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A WEEKLY REVIEW OF MEDICINE

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Original Communications.

BONE SYPHILIS, HEREDITARY AND ACQUIRED.*

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New York,

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I cheerfully accept the courteous invitation of the chairman to participate in this symposium. I shall discourse in a succinct manner on the affections of the bones and joints in hereditary and acquired syphilis.

PART I. EARLY AND LATE HEREDITARY BONE SYPHILIS.

In the light of our advanced knowledge we must recast and enlarge our former opinions regarding the affections of the bones in hereditary syphilis. Heretofore in our nosological studies we summed up these lesions in two words—osteochondritis and periostitis. Now, since a flood of light has been shed on this subject, we have to include many and varied conditions in describing the morbid effects of syphilis on the bones in the hereditary disease. It is important at the outset to make clear the scope of hereditary syphilis and its derivative affections. It is to-day generally recognized that acquired syphilis in the progenitor or progenitors induces in the offspring of such persons two conditions: First, a syphilitic heredity in which the morbid processes are not specifically luetic, but are the result of a general dyscrasia which lowers the vitality and more or less impairs, retards, or vitiates the nutritive processes, and to which the term dystrophic lesions is given; and, second, essential or true virulent hereditary syphilis, in which the virus permeates the whole body and produces its protean lesions.

As instances of syphilitic heredity affecting the bones, we find affections due to backwardness of development, arrest of development, and imperfect development. These cases come under the general head of infantilism, which may be of greater or less extent and intensity. These affec-

tions are found usually as deformities in the skull bones, in the nose, in many of the long and flat bones, and in dystrophic changes in any part of the body, external and internal. In many cases rickets is a prime lesion or a concomitant in syphilitic heredity.

In the category of hereditarily syphilitic lesions, we find osteochondritis, periostitis, osteitis, osteoperiostitis, gummatous osteoperiostitis, and gummatous osteomyelitis. The bones affected singly or in multiple form are the tibia, ulna, radius, humerus, femur, fibula, clavicle, scapula, skull bones, spinal column, and the metacarpal and metatarsal bones. As correlated to bone lesions we find arthropathies in the form of mild and chronic synovitis and deforming synovitis, with more or less destruction of the joints and involvement of the juxtaarticular osseous tissues. Among the rarer manifestations and sequelæ may be grouped atrophy, rarefaction, and elongation of bones, hyperostoses and eburnation of bony tissues, sometimes found in the ribs, clavicles, scapula, and long bones.

The limits of this essay preclude a consideration of the lesions of syphilitic heredity which cover much ground, so I shall confine myself to the study of the specific bone lesions of hereditary syphilis. The earliest, most extensive, constant, and notable lesions are those due to osteochondritis, which have no congeners in the whole range of pathology. These morbid changes have not the character of gummatous infiltration, but seem to be specific, irritative, and proliferative lesions caused by the syphilitic poison. A study of Fig. 1 and the explicative text shows the development of this morbid process, osteochondritis, very clearly.¹ It will be remembered that

¹This affection results from interference with the nutrition of the bone, and presents three stages. In the first the intermediate layer of cartilage is thickened, uneven, and irregular, and under the microscope we find simple hypertrophy of the cartilage cells. In the second stage the cartilage is stratified and is infiltrated with small, round, surface and warty or papillary processes of new bone cartilage placed into the hyaline matrix. Portions of bone are also found in the hyaline matrix between these projections. On the periphery the infiltration encroaches further into the cartilages than at its centre. We find when examining the relations of this calcified line to the spongy bone that there are corresponding depressions into which the spongy tissue passes. Under the microscope the longitudinal rows of cartilage are more abundant than in the first stage, and there is very little intercellular substance. The vessels are numerous, and at the line of ossification are surrounded by a considerable quantity of connective tissue. The walls of the cavities are thicker at their bases and are sclerotic. In many places an osteoid substance is developed from the cartilage and from the medulla which enters with the vessels. This substance is found to be in some places firm bone while in others it is the spongy

* Read before the New York Academy of Medicine, Section of Orthopaedic Surgery, October 4, 1906.

in the growing bone the length is accomplished by little increase in size of the shaft or diaphysis into the cartilaginous layer which exists at its end between the terminal portion or the epiphysis. This part is called the diaphysoepiphyseal junction, and it is here that the morbid process is developed in any of the long bones.

These swellings may be developed slowly or quite rapidly. After reaching their full size, they usually remain in an indolent condition, causing little, if any pain, and interfering but slightly with the motion of the joint. Under appropriate treatment they promptly subside. The integument undergoes very little if any change, but be-

exceptionally large. The joints may be secondarily involved and become the seat of subacute synovitis. Those most commonly attacked are the elbow and knee; as a rule the joints with short epiphyses are most liable to hyperæmia and effusion.

Degenerative changes sometimes take place in these osseous lesions. In their mildest form they consist simply of a superficial breaking down at one part of the swelling. We first observe fluctuation, soon followed by ulceration of the skin, resembling in appearance that which occurs in gummy tumors. These necrotic changes, however, may be much more active and extensive in



FIG. 1. Osteochondritis syphilitica: A, Cartilage and cellular proliferation; B, Calcified cartilage hypertrophied, with cellular proliferation, with its integral limits at the border of the cartilage; C, New formed bone in the medullary cavities, pus cells situated in this bone.

comes tense and thin only when the tumors are

large. In some cases the *condylar heads* we find irregularly distributed masses of cartilage forming a zone of considerable thickness. In other points in the second stage, therefore, are greater proliferation of the cartilage cells, premature sclerosis of the intercellular substance, formation of bony projections, and a thick layer, and delay in bone formation elsewhere. In the third stage, therefore, there is some resorption of the cartilage. In the third stage there is a greater involvement of the epiphyses, with thickening of the periosteum and of the bone. Under the microscope the following conditions are seen: The lowermost layer of hyaline cartilage is bluish and transparent; this layer is succeeded by an irregular layer of cartilage with scattered processes and having an irregular, spongy, and homogeneous formation. This layer is brittle and can be readily removed. Next to this is placed a layer of grayish red or yellow substance, soft, and sometimes viscid, which is gradually lost in the spongy substance of the diaphysis. The medullary tissue of the latter continues for some distance, and instead of being normally red is gray or grayish red. This layer seems to destroy the firm cohesion of the epiphysis to the shaft. In this stage the proliferation of cartilage cells and the lime infiltration is excessive. In the layer next to the bone we see nucleated cells, spindle-shaped cells, and

the bone than in the cutaneous ulcer, which shows very little tendency to increase in size. The epiphysis may be entirely separated from the shaft, and, if the superficial ulcer is large, it may be extruded. In other cases, however, reparative changes of an interesting and peculiar character occur.

The intervening cartilage having been destroyed, the diaphysis is united to the shaft only by fibres of periosteum. This membrane becomes much thickened, and forms a more or less complete cylinder, uniting the two fragments with considerable firmness. Bony spicula shoot from its inner surface between the two osseous surfaces, and eventually bony union is formed. The periosteum continues thickened for a long

time, but gradually resumes its normal proportions, as the union between the bones grows firmer.

The effect of these swellings upon the ultimate shape of the bone depends on the intensity of the morbid process. When resolution takes place the nutrition of the bone is afterwards fully restored; but in case of destruction of the intermediate layer of cartilage the bone is usually short-

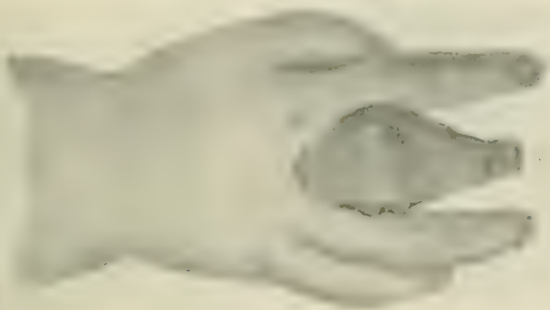


FIG. 2. Dactylitis syphilitica in infant.

ened. These lesions are as a rule found at birth or within the first month or year or two of life. They may appear later, even as late as the twelfth year, when they are developed very slowly, are few in number, and are usually unsymmetrical.

The bones most commonly attacked are those of the forearm, the leg, the arm, and the thigh. The clavicle, sternum, and ribs are also attacked, as well as the metacarpal and metatarsal bones. The number of bones involved varies. It has been noticed that in stillborn infants, and in those dying soon after birth, the majority, or even all, of the long bones are affected. It is very exceptional for the victims of multiple bone lesions to survive.

In the early months of hereditary syphilis, children are often attacked by swelling of the phalanges and the metacarpal and metatarsal bones, called dactylitis syphilitica. These lesions are of the same character as those of acquired syphilis, namely, osteitis and osteomyelitis. The proximal phalanges are most often attacked, and the distal least commonly; sometimes all three phalanges are involved at the same time. The bones may be enlarged to twice or thrice their natural size, the deformity, of course, differing with the phalanx involved. One or more bones of one or of each hand may be involved; in one instance, I have seen every phalanx of each hand swollen. Sometimes the metacarpal bones are synchronously enlarged; the lesion is less frequently seen in the toes and metatarsal bones. The swellings progress slowly or with surprising rapidity. In their early stages the integument is unchanged; at a later period the overlying parts become inflamed and an abscess is formed. The condition is well shown in Fig. 2.²

² In addition to my own plates I have used some of Fournier, Gangolphe, Bergh, Hutchinson, Broca, Dunlop, and Lan-
certain. It is safe to say that no one man's experience is sufficiently great to illustrate such a vast subject as is covered in this essay.

Syphilis of the Metacarpal and Metatarsal Bones.
—These lesions usually occur quite early in hereditary syphilis, and may or may not coexist with dactylitic enlargements. They may appear even as late as the twentieth year. A single bone only is sometimes affected, but in one instance I have found all of the metacarpal and metatarsal bones involved. The accompanying figure (Fig. 3) shows the appearance presented in one of my cases, in which the first metacarpal bone of the right hand was swollen. These swellings usually form rapidly and attain considerable size. They may or may not be attended with pain.

When infants get older and begin to walk the severer forms of bone lesions, already enumerated, are prone to appear. In the majority of cases the femur and tibia are first attacked, sometimes as early as the second year, but generally at the fourth or fifth, and as late as the twentieth or thirtieth year. When long bones are involved the greater part of the shaft usually suffers. The bone becomes very tender, and soon is seen to be much enlarged, even to twice or thrice its normal thickness. It seems bent anteriorly, producing marked deformity. The fibula is also sometimes affected, and generally both legs are attacked. The bones of the forearm are, next to the tibia, most prone to this disease (Fig. 4). The earlier it appears, the more likely is the affection to involve both limbs symmetrically; at later pe-



FIG. 3. Hereditary syphilis of metacarpal bone.

riods it may be unilateral and more localized, perhaps forming circumscribed nodes.

The following condensed report of a case will present a more graphic and illuminating picture of the general course and features of later hereditary syphilitic bone lesions than a didactic description, particularly when elucidated by the figures:

A girl, when fourteen years of age, had a swelling of the upper part of the left ulna, and at her twentieth

year, having in the meantime been unhealthy, she noticed a gradual swelling in the right wrist, left knee joint, and left ankle. Two years after this her right foot swelled; but the skin over the joint was not involved. Motion gradually became impaired until a fixed and slightly flexed position was produced. Spontaneous pain did not exist, but the parts were sensitive to pressure. The knee joint recovered its mobility in

of the hands. When a probe was passed into the fistulæ a spongy tissue was felt, but no denuded bone. The right hand (see Fig. 5) showed the results of the destructive process, the first phalanx of the index finger was considerably shortened and so constricted at its centre, where a small cicatrix was seen, that the bone appeared to be divided into two pieces, and the patient had to fix the finger with a glove, so great was the

mobility. The two other phalanges were normal. The middle finger was much emaciated, the second phalanx was in a position of superextension, while the first was slightly flexed. The bones, though unchanged in form, were atrophied, and the integument, joints, and tendons were normal. In the left hand the lesion was in progress. On the dorsum was a

large, smooth movable cicatrix, adjoining a small retracted spot at the base of the first metacarpal bone, which was atrophied and produced a marked shortening of the thumb. The first phalanx of the middle finger was very much swollen and obliquely perforated by a sinus, and the bone was completely divided into two parts by an intervening newly formed tissue. The two phalanges of the thumb and the first phalanx of the index finger and the first phalanx of the right middle toe were swollen, but there was no sinus nor solution of the continuity of the bone. This is shown in Fig. 6. The femur, the knee, and the ankle were normal; but



FIG. 4. Hereditary syphilis: periostitis of the humerus with joint involvement.

a year, and the left ankle joint in about five years, whereas the affection in the right ankle disappeared and then recurred with greater severity. This was coincident with pain in the head and limbs. Very soon nodes developed upon the shafts of the tibiæ and on the frontal protuberances. The swelling in the right wrist extended, after a few weeks, over the dorsum of the hand, involving the first and second phalanges of the thumb and the three adjoining fingers. The thumb and the second and third fingers recovered their normal condition in about three months; but the integument of the index finger gradually reddened upon its radial side, and in about a year opened and discharged a little pus, but no bone, then closed, leaving the motion of the finger impaired.

In her twenty-eighth year a swelling appeared upon the ulnar side and dorsal surface of the left hand, which, becoming red, extended to the integument of the first and second metacarpal bones. An incision was made into this swelling, which gradually enlarged into an extensive circular gummatous ulcer. This healed slowly, leaving a fistula at the base of the metacarpal bone, which healed later on. In the year following (patient then being twenty-nine), the first phalanx of the thumb of this hand enlarged, and in a year the last phalanx also became enlarged. Coincidentally the first phalanges of the first and second fingers and the whole of the third right toe became enlarged. The course in these instances was more acute and necessitated several incisions. She had been unsuccessfully treated with nonspecific remedies for sixteen years.

At this time her condition was as follows: The body was ill nourished, there were no cutaneous lesions, nor enlargement of lymphatics, but upon the frontal tuberosities were several typical nodes. The spleen was very much enlarged. The right wrist was slightly flexed and fixed, and the styloid processes were prominent. The integument over the affected points was tense and in some spots livid. The cicatrices and fistulæ were small and situated upon the dorsal surface



FIG. 5. Destruction of bone in hereditary syphilis from osteomyelitis.

upon the tibiæ were numerous nodes, and the shafts of these bones were thickened.

The lesions in this case were osteitis, periostitis, gummatous periostitis, and osteomyelitis. The sequelæ were atrophy and loss of bone, elongation of a long bones, eburnation, and ankylosis of joints.

This history shows very clearly the inveterate character of the disease, its frequent relapses;

both its symmetry and asymmetry of invasion, its extensive involvement of the bones, and the customary multiplicity of its lesions being in this instance nine on this one subject. Hutchinson found twelve lesions on the same individual; Lannelongue found nine osseous lesions and nine bones attacked. Fourneau Jordan observed nine hyperostoses of the cranium, and a number of cases are reported of five, six, seven, eight, ten

sions, particularly when the shafts are attacked, there is more or less pain. Sometimes it is rather mild and episemeral, and at other times it presents as instances of growing pains. In other cases the pains are truly osteocopic of varying intensity, even to the severity of causing agony. It is a good rule to suspect hereditary syphilis in any other chronic bone lesion accompanied by pain, mild or severe, continuous, paroxysmal, or nocturnal.

Many of these massive lesions run a long and uneventful course, but in some degenerative changes take place in the form of suppuration and necrosis.

Gummatous osteoperiostitis represents a very severe order of lesion. In these cases the long bones are the principal ones involved, but exceptionally the cranial bones are attacked. In Fig. 8 gummatous periostitis of the tibia is characteristically shown. In this case there was also gummatous osteomyelitis. Gummatous osteomyelitis is a rather rare development, and it is usually found in the long bones, either on their shafts or on their expanded ends.

It is very probable that traumatism in many cases acts as the exciting cause in the development of bone lesions, particularly of the shafts of the long bones of the extremities.

While it is not uncommon in late hereditary syphilis to observe gummatous ulcers as the dominating symptom of the infection, these lesions often coexist with bone lesions, and in some cases they are developed in the skin over the morbid areas of bone. These ulcers are in all particulars similar to analogous lesions of late acquired bone syphilis.

A goodly number of cases of late hereditary syphilis have been reported in which elongation of long bones has been described under the title of *partial or local gigantism*. In one case a child had atrophy of the thorax and pelvis, together with partial elongation of the bones of the forearms and legs; in a second case a young man presented infantilism of the trunk and the upper



FIG. 6.—Periostitis and osteomyelitis of the bones of the hand.

lesions, and even more. We naturally may conclude that multiplicity of bone lesions is one of the diagnostic features of late hereditary syphilis.

Another feature is also of diagnostic import, namely, that in this late form of inherited bone disease there is a decided tendency to the involvement of the terminal extremities of the diaphyses, the parts of union of the epiphysis and the diaphysis.

But besides this terminal localization it is very common to see very extensive involvement of the shafts of the long bones even to their entirety. In many cases of late hereditary syphilis we find examples of localized or diffuse periostitis of long bones, such as one sees in the late acquired form. In these cases the gravamen of the attack seems to be in the periosteal sheath, and the bony tissues are not deeply, if at all, invaded. These cases are the exception rather than the rule, for in a given case of localized periostitis the probability is strong that the bony shaft will be attacked. Fournier, Hutchinson, Lannelongue, and Augagneur have called special attention to what are termed massive hyperostoses, the outcome of osteitis, in which large segments of long bones are enormously enlarged. This feature is well shown in Fig. 7. In one of Hutchinson's patients the swelling was as large as a man's fist, and in Augagneur's patient it was of the size of an orange. In some of these extraordinary cases a suspicion of a malignant growth has been entertained.

In most cases of hereditary syphilitic bone le-



FIG. 7.—Massive hyperostosis of tibia; osteoperiostitis.

extremities, contrasting strangely with gigantism of the lower extremities. A number of cases have been reported in which one bone has been elongated, namely, the femur, radius, tibia, and ulna.

Few cases of general gigantism are on record, and Fournier's case is most interesting, and is well shown in Fig. 9. The points of interest, in addition to the elongation, are the anterior curvature of the bones of the legs, which are not caused by rachitic complication, but by hyperostoses which

have developed on the anterior surfaces of the long bones. This condition is called *incurvation* (from *in* and *curvus*, *incurvation*) for ob-

time complicated with rarefaction of the bony tissues and consequent fragility of the bones, and may by traumatism or muscular action become

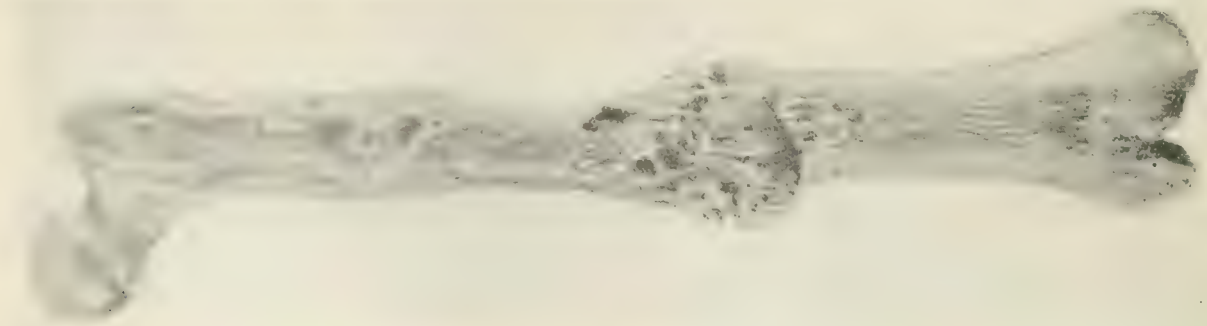


FIG. 8.—The condition of the bone in a young subject: periostitis, gummatous periostitis, and osteomyelitis, also fracture of the bone.

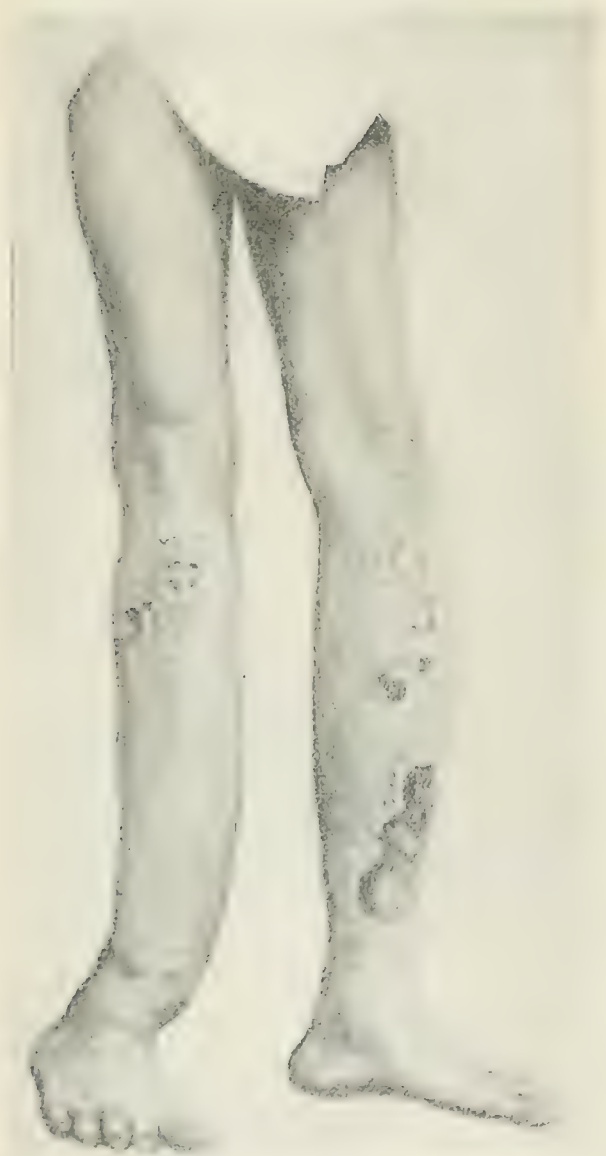


FIG. 9.—The condition of the legs in a young subject, showing the ulceration, and gummatous ulceration.

vious reasons. The complicating feature of gummatous ulcers in this case is very characteristic. These profound osseous lesions may be in due

the seat of fracture. This accident may occur to any long bone the seat of any of the already mentioned morbid processes, even when active. Its occurrence, with subsequent bony union, is well shown in Fig. 8.

Hereditary syphilis of the joints is to-day seem-



FIG. 10.—Late hereditary syphilitic synovitis of knee joints.

ingly little understood, and yet it is of not infrequent occurrence. Synovitis may occur in cases of osteochondritis in which the epiphysis is very narrow and the synovial membrane very near or contiguous to the seat of inflammation. The larger joints are the ones usually involved.

The lesion in older children seems to be an

addition to a lesion of this zone of Wernicke, also an involvement of the region of the lenticular nucleus. Lesion of the lenticular nucleus gives rise to anarthria, therefore in so called motor aphasia, or Broca's aphasia, we have merely ordinary Wernicke's aphasia *plus* anarthria. Marie denies that the third left frontal convolution plays any rôle in aphasia whatever. He believes that the involvement of this convolution seen in so many cases—in half of Marie's cases—is purely a coincidence, due to the extent of the vascular territory obliterated and to nothing more.

No matter how subversive of the prevailing views of aphasia this position of Marie's appears to be, it is incumbent upon us to dispassionately review the subject and study our material anew. The time allotted is entirely too short for an adequate discussion, and I will limit myself to a brief presentation of the facts at my disposal. I have during the past month examined fourteen cases of aphasia and, in addition, three cases of pseudobulbar palsy; one of the latter came to autopsy.

I at first attempted to classify these aphasics as formerly into motor and sensory, and I signally failed. I was merely able to group them into aphasics in which the motor speech disturbances were more pronounced and aphasics in which the motor speech disturbances were less pronounced, or perhaps absent. All presented sensory elements.

I began my studies by applying one of Marie's tests for the presence of intellectual deficit. Marie, as just stated, asserts that aphasics always present an intellectual deficit, and further, points out that this deficit varies in degree; some aphasics cannot comprehend a single word; others on the other hand, comprehend things that are relatively simple. As a rule they can execute simple instructions, but not complicated ones. Marie instances such instructions as these. Three pieces of paper of unequal size having been placed on a table, he says to an aphasic: "Give me the largest piece, mark the medium sized piece, throw it upon the floor and put the smallest piece in your pocket;" or, he says: "Get up, tap three times on the window with your finger, go back to the table, walk around your chair, and seat yourself." Some aphasics have great trouble in executing a single act, others are embarrassed by a direction to perform two consecutive acts; others by three or four.

In all of my fourteen aphasics, I found an unquestionable deficit. In one in whom motor elements were absent, the one in whom a so called sensory or Wernicke's aphasia alone was present—there was an absolute failure to execute even so simple an instruction as "raise your left hand" or "raise your left hand and put it on your head." Of the other thirteen aphasics in whom motor elements were more or less present, three were alike unable to carry out any instructions whatever, no matter how simple. Two others, when the request was exceedingly simple, such as "raise your left hand," would usually comply, but if the instruction contained two factors, such as "raise your left hand and put it on your head," would invariably fail. Another patient was able to perform one instruction quite well, usually failed

when the instruction contained two factors, and always failed when the instruction contained three factors. Four other patients were able as a rule to execute instructions containing two factors, but always failed when they contained three. The three remaining patients could usually execute instructions containing three factors, but generally failed when this number was exceeded.

Another interesting problem now suggested itself. Of the fourteen aphasics, I found that seven could read; that is, they could read single words, written or printed. Thus one patient could read the word "hand" and would correctly indicate the object intended upon his own person by raising and exhibiting his hand. He would read the word "head" and would indicate this portion of his body. However, other words, such as "clock," he would utterly fail to read nor could he indicate a clock, although there was a clock hanging very near him. A short sentence, embodying the two objects, the visual memory of which he retained, namely, "hand" and "head," was now placed in writing before him; thus "put your hand on your head;" he failed absolutely to comply; he evidently could not comprehend the sentence and was as helpless in the presence of a written instruction as he had been in the presence of the verbal instruction.

Another patient could readily read aloud a large number of single words, such as Ireland, Lawrence, Jordan, leaf, house, head, and hand, and yet when the simple sentence "put your hand on your head," was written before him, he failed utterly, just as he had when the instruction had been given verbally. Similar results were obtained in the other cases; one of these proved to be particularly interesting. This man could carry out verbal instructions containing three factors, and occasionally as many as four, though he always failed at five. But when the sentence was *written* and placed before him, "Stand up, walk half way down the ward, come back, walk around your chair, and sit down," he failed; he puzzled a long time, finally got up, but merely walked around his chair and sat down. The instruction was then given to him verbally and he at once complied, performing the instructions correctly. This man could read single words readily. He could write single words at dictation, but he could not write any but very simple sentences.

All of the fourteen aphasics exhibited in an unmistakable manner the intellectual deficit claimed by Marie. They were unable, as detailed, to comply with any but the simplest instructions. In this respect they present a striking difference from normal individuals. In those aphasics who were still able to read, the deficit, as has just been shown, became even more glaring when their instructions were given in writing. Certainly there could not be here mere questions of word blindness or word deafness, there must be an intellectual deficit as shown in the failure of the power to understand, to comprehend. Equally striking proofs of intellectual deficit was furnished when I gave the patient simple sums in arithmetic; usually the additions were incorrect, and one patient actually began his additions with

the left hand column, also, of his errors and incongruities.

The intellectual deficit insisted upon by Marie must, I think, be unhesitatingly admitted. Dérjérine freely admits this intellectual deficit in clear and unmistakable language in his *Semiology of Nervous Diseases*, and yet in his recent paper upon aphasia in *La Presse médicale*, denies the existence of such a deficit. This denial is evidently the result of a misapprehension. As Marie points out, intellectual deficit manifests itself in three ways: First, in the deficit seen in cases of arrest and imbecility; secondly, in cases of mental disease in which dementia is present; and, thirdly, as seen in aphasia. Clearly the deficit in aphasia is different from that observed in either of the other states, but it is none the less a deficit—an intellectual deficit. The deficit in aphasia differs from the deficit in arrest and dementia in that it is lacunar, involving one function or a closely related group of functions, while in arrest and dementia, the deficit is more or less generalized.

The next step in the study of my cases was an attempt to arrange them into groups according to the presence or absence of anarthria. My first thought was that Marie's contention that the motor speech disturbances of aphasia were due to anarthria, was erroneous. Particularly was this the case when I contrasted the utterances of one of my patients with motor involvement with those of one suffering from typical pseudobulbar palsy. The difference seemed quite striking for the utterance or articulation of the aphasic seemed less deranged than that of the pseudobulbar case; but when I contrasted the utterance of the aphasic with that of a normal person, the great departure from normal articulation was at once evident. The same result was obtained in all of the motor aphasics; in some anarthria was less pronounced and in others more pronounced, but it was present in all. It so happens that in one of the patients, in whose aphasia considerable improvement has taken place, the anarthria is very persistent. As Marie points out, anarthria does not necessarily mean that the glossolabial laryngeal apparatus is paralyzed, as it so often is in a more or less degree in pseudobulbar palsy; anarthria may be due to an ataxia of movement. In other words, anarthria may be due to a derangement in the harmonious action of the various organs concerned in articulation; the larynx, the tongue, the lips, the muscles of expiration.

In attempting, therefore, to classify my cases according to the presence or absence of anarthria, I again failed. Defective utterance of such words as were still preserved in the motor aphasics was common to all; though in some it was more pronounced, in others less pronounced. In the only case in which anarthria was entirely absent, loss or impairment of motor speech was also absent. In this case, too, there was no paralysis of the right arm or right leg; in all of the other cases, but one, there was present a right sided hemiplegia. This might suggest the possible relation of anarthria to lesion of the internal capsule. However, although Raymond and Artaud years ago stated that there existed in the internal cap-

sule an aphasic fasciculus just in advance of the knee—namely, a fasciculus understood as a projection from the third frontal convolution and lesion of which was supposed to give rise to aphasia—Pitres showed in 1894 that this fasciculus had no existence; that lesion of the capsule could very readily give rise to a dysarthria or to an anarthria, but that it never gave rise to an aphasia. That lesions of the capsules and basal ganglia cause pronounced anarthria is of course well known, and is well illustrated in cases of pseudobulbar palsy. If the lesion is double, as in pseudobulbar palsy, the anarthria is persistent; if single, unless it be linked to an aphasia, it is likely to disappear. Anarthria always accompanies the onset of a hemiplegia whether this be right sided or left sided. In left sided hemiplegia, it usually disappears or becomes markedly less—sometimes within a few days or sometimes after a number of weeks. In some cases, however, it persists indefinitely, though usually in a lessened degree. For instance, in eleven cases of left sided hemiplegia which I have recently examined, a history of anarthria, more or less pronounced, accompanying or immediately following the attack was present in every case. In four of these more or less marked evidences of anarthria persist. As regards pseudobulbar palsy, the difficulty in articulation may closely approximate that met with in aphasia; indeed, it may be indistinguishable from the latter; this was notably the case in a patient who recently died in the nervous wards of the Philadelphia Hospital.²

The motor speech difficulty appeared in each of the cases studied by myself as something added to the essential symptoms of the aphasia; an anarthria added to the special intellectual deficit—the failure to comprehend words or sentences—which constitutes aphasia. It would seem that Marie's contention that aphasia is a unity is well borne out by the clinical facts.

The determination of the value of Marie's claim that all aphasia is due to an involvement of the zone of Wernicke, and that all of the motor speech phenomena are due to involvement of the zone of the lenticular nucleus, and that lesion of the third left frontal convolution has nothing to do with the motor phenomena, is a matter for future pathological research. Marie's contention that motor phenomena may be produced by the involvement of the inferior longitudinal bundle and the isthmus which connects the zone of Wernicke with the region of the basal ganglia bears a strong probability of truth; notwithstanding it is only the confirmation of his clinical and pathological observations by other observers which will definitely determine the question. The occasional isolated lesion of the left third frontal

convolution was a man, sixty-three years of age, who had had a typical pseudobulbar palsy. He understood everything that was said to him, and would readily comply with positive instructions of various kinds. He was, however, unable to utter any words except "Yes" and "No," the latter word standing evidently for "No." In other words, he presented a complete loss of motor speech with the exception of the two words "Yes" and "No." This is a case of so-called motor aphasia. The very substitution of the letter "d" for the letter "n" in the word was exactly that which has been reported by other observers. Although the case, though the latter has not yet been submitted to microscopic examination. The point of importance, however, is that the left

convolution occurring in right handed persons without producing aphasia is difficult to explain away. To say, as does Déjerine, that the cause should be sought for in the possibility that a given patient may have been ambidextrous, or that the symptom may have to do with a complementary action of the corresponding convolution of the other hemisphere cannot be regarded as a satisfactory explanation. The third frontal convolution is almost always involved along with other structures, subjacent white matter, basal ganglia, and capsules. Why should it happen that just in those exceptional instances in which the left third frontal convolution alone is involved there should occur that equally rare and unusual phenomenon, the assumption of the speech function by the right hemisphere? Certainly we are here entitled to a legitimate doubt as to the real function of the left third frontal.

The specimen presented before the Société médicale des hôpitaux of Paris on October 19, 1906, by Souques, is, in this connection, most interesting. Souques presented the brain of an aphasic. The case was that of a young woman suffering from a mitral lesion who had been attacked with a right sided hemiplegia and aphasia. The aphasia involved all the modes of speech, but aphemia and agraphia predominated, and the diagnosis of a Broca's aphasia was made. The patient died three years later of a pleuropulmonary lesion of embolic origin. At the autopsy there was found a focus of softening in the left hemisphere. This focus involved the posterior half of the two first temporal convolutions—the zone of Wernicke. The third left frontal convolution—Broca's centre—was intact. The integrity of the third frontal was also shown in a Flechsig section. The focus involved the posterior convolutions of the insula, the posterior half of the temporal convolutions, and also the posteroexternal part of the lenticular zone and adjacent regions of the capsule. The value of this case, it seems to me, cannot be questioned.

Perhaps it is going too far afield for the purposes and limits of this evening's discussion to touch upon Marie's views of alexia and its cause. Suffice it to say that Marie dethrones the pli courbe (the angular gyrus) just as he has dethroned the third frontal. He believes that alexia is due to a lesion of the inferior longitudinal fasciculus, which lesion causes a break in the connection between the zone of Wernicke and the visual centres in the occipital lobe; a lesion in the fusiform and lingual lobules encroaching upon the subjacent white matter and thus by involving the inferior longitudinal bundle may cause alexia. Alexia, therefore, would be as truly dependent upon the zone of Wernicke as would the inability to comprehend spoken language; for the zone of Wernicke is (according to Marie) the zone of language, and if communication with the visual centres be cut off, alexia must of necessity result.

We are reminded by this position of Marie toward the angular gyrus, of the attitude assumed in regard to it by the younger Seguin who pointed out many years ago that the visual functions commonly attributed to the angular

gyrus might be due to the involvement of the subjacent white tracts passing to the visual centres farther back.

It must be conceded that Marie's view is very attractive. It would indeed appear that aphasia is in reality a unity, that it consists not in a word deafness, not in a word blindness, not in an inability to utter words, but in a difficulty or impairment of the faculty of comprehending language, and that it is due to lesion of the zone of Wernicke. Whether in a given case anarthria is also present depends entirely on the concomitant involvement of the inferior longitudinal fasciculus or isthmus in its passage to the lenticular nucleus and involvement of the lenticular nucleus itself. Whether in a given case on the other hand, alexia is also present, depends upon the involvement of the inferior longitudinal bundle posteriorly in its passage to the visual centres of the occipital lobe.

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1719 WALNUT STREET.

WHERE TO SEND CONSUMPTIVES?

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In the routine of general practice it is nearly a daily occurrence for the physician to have his attention called to a new case of consumption, and immediately he is confronted with one of the hardest problems of his always returning experience, for he must, then and there, settle the question as to the future management of the case. Is the patient poor, or fairly well to do, or rich? It certainly becomes a serious matter if the patient be the father with a family depending upon him for their daily bread; or a laboring man's wife with a number of young children; or a young sewing woman eking out the barest living with her needle. More than likely it is one of these, and if so, there must be no reckless, unthought action upon the physician's part.

Most of these unfortunates finally fall into the hands of charity, but it is not seldom the case that the physician, either through ignorance or thoughtlessness, orders patients who may be bookkeepers, or clerks, depending upon their salaries for a living, to pack up bag and baggage and make for the West, and leave the cold, and snow, and slush. The magic word, West, stands an ever alluring, beckoning wonderland to the eastern physician and the eastern physician's patients. The easterner has a vague smattering of this wonderful arid West, probably knows from books and advertisements the altitudes, actual and relative humidity of certain places, not to mention many wonderful mineral springs said to cure any case. So, off the patient is rushed pell mell to the West, on the wild goose chase of

climate cure, regardless of his physical condition, or the state of his pocketbook. After the exhaustive and expensive trip, he rarely has enough left to enable him to procure, in this expensive land of sunshine and plenty, the needful things for his comfort and health. Too often the home is broken up, recklessly, foolishly, upon the illusion that easy employment can be found for the father, or that the son can go upon a ranch and ride bucking broncos and recover in six months, or that the storekeeper or office man is lying in wait to give the daughter a snap position. The physician who has patients in this class of society is tampering with a dangerous expedient in ordering them off to the West. True, he is sending them to the finest climate in the world where they may even fall into the hands of physicians especially skilled in treating the disease, but unless they have sufficient means to supply their needs, the physician who sent them will stand blamable for the bad results which will surely follow.

To obtain good results lung specialists of the West must have patients sent to them early in the disease, and they must come with money enough to enable them to have the best of food and care for a period of not less than two years, during which time they must leave off work absolutely. It is not denied that patients can do laborious work and sometimes recover, for, out West, one sees scores of people who have recovered in spite of such foolishness; but speaking of the average case, he who must work will surely succumb. Climate cannot save these patients, unless they have proper food, and freedom from work and worry; and climate cannot cure the average case in six months, or twelve months. The fatal weakness of climate cure is the fact that the stay is too short, by far. What can be expected in three months? The stay should not be less than two years.

Now if a patient has sufficient money and the determination to get well, then by all means send him somewhere in the great arid West, it makes very little difference where, in so far as climate itself is concerned, but there is no sense in rushing him off between trains. Find out the place where that particular patient will feel best satisfied, and if he is fairly contented, and has proper food and rest, and attention, the climate will take care of itself. A few feet more or less altitude; an occasional precipitation of dew; the foolish contentions of different localities over the actual and relative humidity, and number of inches of rainfall—even the reluctant admission that sometimes there is snow and ice and fog, need not deter one. Of the two, the patient without sufficient money in the West, or the consumptive in a fairly comfortable home in the fogs, and cold, and dampness of the worst of our great cities, I would certainly choose the latter, knowing that the results would be better.

The hardest case for the physician to decide is the patient who is neither well to do, nor poor, but who is anxious to sacrifice everything to get well. It is not always easy to know where to send such a person to obtain proper attention. If he goes uninstructed, for example, to Denver,

or to Phenix, or Los Angeles, there is every likelihood that he will fall among thieves, and if he has but a moderate amount of money his story will run rapidly to a close. From one quack to another he drags his utterly weary legs, the disease creeping upon him in spite of the never ceasing sunshine. Then the lack of funds begins to pinch; if he has been fortunate enough to secure a position, he loses it, even boarding houses turn him from their doors. Down the rapids of despair rushes his frail bark and the man who thoughtlessly sent him to the West is responsible for the disastrous outcome. It would have been better for such a patient to have stayed at home.

And even though the patient has plenty of money and comes West, it is not easy for him to obtain the kind of attention best suitable to his case, unless he goes to a good sanatorium. The average consumptive and his friends will not admit that he has the disease, and they nearly always try to delude themselves, and others, that he is only "threatened," or has "weak lungs." To suggest that the patient go to a sanatorium usually brings trouble for the physician, for the patient foolishly believes that to go to such an institution is to proclaim the nature of his disease. The only thing to which he will consent is to go West, but as a rule such a person is never satisfied, and it is first this altitude and that, his gaze ever westward. On he moves from one town to another, while the tache of the great white plague deepens upon his prominent cheekbones, and his rasping voice harshens to a croak. He little knows the tragedy written in his face as he turns from the unwelcoming stare of one boarding-house keeper to another. Hotels and boarding houses do not want the consumptive, whether rich or poor.

Now, if the physician had but insisted that there be no concealment of his trouble and had placed the patient in good hands at the start there would have been at least seventy-five chances that he would have recovered. So, by all means try and persuade your patient to go first to a sanatorium, or at least arrange that he be under the direct supervision of a skilled specialist who will attend to the proper details for his care. Many patients come out West and promptly lose their lives, or all chance for recovery, because they have not been taught how to care for themselves. There is everything in right living for the consumptive, and he can only learn the details of this new life under the guidance of a specialist. All scientific means to arrest the disease should be exerted early, but if the patient has not the money to secure everything needed, then by all means keep him at home, where if he must die, he will be among friends and relatives.

However, if, after careful deliberation the decision is reached to send the patient to the West, explain all the conditions, as to length of stay, expenses, etc., then fix upon the place. There is a very foolish idea widely prevalent that if the consumptive is a young man he should be sent on a cattle ranch. Of all places the ranch is the worst for him. By all means beware of the ranch, for, with thousands of cattle there will not be a drop of milk to drink, and the food and cook-

ing! It is enough to say that the consumptive has no business there, for it requires a rawhide constitution to keep pace with the roving cowboy. And, too, don't send your case to a small town unless you know just what is there, for the accommodations and food is about on par with the ranch. Send the patient to some well known place like Denver, Colorado Springs, El Paso, Albuquerque, Phoenix, Tucson, or Southern California. In and around the cities enumerated, and in the cities of Southern California, there are sanatoria and skilled specialists for the special care of these cases. But don't send your patient off to hunt them up, attend to all the details yourself before allowing him to start West.

We, as a people, have done less for the consumptive than any of the great modern powers, and the reason for it, partly, is that we have grown up with the fixed idea that such cases must go to the West and have a special climate to enable them to recover. It is this wrong idea which keeps back the local sanitorium movement in the large cities of the East, where hundreds of such institutions are needed to care for that large class unable to go off to special climates. Truly, climate is the least essential of the consumptive's necessities. And so, if there be the least doubt of your patient's ability to properly maintain himself in the West, then by all means keep him at home, for the West is already overwhelmed with poor consumptives and the sad stories of their distress makes one's heart sick. But, if he has plenty of money and is set upon it, do not hesitate to send him West, and advise and urge him to stay until he is well. And before you send him there, disabuse his delusion that climate cure is some concrete, specific thing which grows upon the sage bush, or hangs temptingly upon the cacti, which he can reach out for and take unto himself in one, deep, satisfying gulp. If he would make a satisfactory and permanent recovery impress upon him that his patience must be enduring, his faith supreme.

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MALIGNANT DISEASE OF THE OVARY.*

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The subject, malignant disease of the ovaries, was suggested to me by the study of two cases (one carcinoma and the other sarcoma), which recently appeared in Dr. Krusen's service at the Samaritan Hospital.

A close study of the literature reveals a great number of cases in toto, but comparatively speaking they are very rare. My study of many cases has proved a waste of time. Many ovarian tumors are reported as malignant without a microscopical examination being made. Many are too meagrely described to be of any real value to any one not acquainted with the case in some other way. Again, many carefully reported cases end with a diagnosis hesitating between fibroma and sarcoma. Solid tumors are much less common than cystic tumors of the ovary. To give you some definite idea as to the frequency of solid

as compared with cystic tumors of the ovary permit me to quote statistics:

Billroth had eight solid tumors in eighty-six extirpations of ovarian tumors; Schröder five in 102; Thornton ten in 338; Hildebrandt ten in 37; Weber fifty-one (?) in 123; Krassowski none in 128; Brawn ten in 81; Keith seventeen in 200; Olshausen twenty-six in 293. Total, 137 in 1,388.

Weber's high percentage, which is questioned by good authority, causes this table to show almost ten per cent. solid tumors in 1,388 extirpations of ovarian tumors. Penrose seems to have the weight of authority with him in his statement that five per cent. of all ovarian tumors submitted to operation are solid. No attempt has been made to explain the marked variation in proportion of solid tumors in the hands of different operators from a percentage of zero in the practice of Krassowski to forty-one per cent. in that of Weber.

Of necessity it follows that the percentage of malignant tumors also varies widely with different operators. C. C. Norris, in a recent article, reports out of sixty-three cases operated on at the University Hospital a proportion of 15.8 per cent. malignant; Olshausen found fifteen per cent. of all ovarian tumors malignant. Schröder found 16.4 per cent.; Fritch eighteen per cent.; Leopold twenty-three per cent.; Kelly eight per cent.; Weber 15.3 per cent.; Freund twenty-one per cent. W. Roger Williams in 804 primary ovarian tumors found 6.3 per cent. malignant. Norris concludes that one in every four to six cases of tumors of the ovary is malignant.

At this point let it be understood that sarcoma and carcinoma shall, in this paper, constitute the malignant tumors to the exclusion of papilloma, or as Kelly terms them, the "semimalignant tumors of the ovary."

As regards the relative frequency of sarcoma and carcinoma there is some difference of opinion. In Billroth's eighty-six ovary tumors were three sarcoma and five carcinoma; Schröder 102, five sarcoma; Hildebrandt's thirty-seven, seven carcinoma; Olshausen's 293, twelve sarcoma and eight carcinoma; University of Pennsylvania sixty-three, ten carcinoma; Werder's 130, five sarcoma and fifteen carcinoma; Leopold's 152, twelve sarcoma and twenty-three carcinoma. From this table it would appear that carcinoma is more frequent than sarcoma, for in 991 ovarian tumors there were sixty-eight carcinoma and only thirty-seven sarcoma. Norris's ten cases of carcinoma were collected from 1,588 consecutive gynecological cases, but in this number there was not a single case of sarcoma. However, Penrose is not alone in his assertion that "the majority of solid tumors of the ovary are sarcomatous in character." Despite the very general agreement of all authors as to the rarity of malignant disease of the ovary we can readily see that their frequency demands greater attention than is accorded them.

Some of the peculiarities manifested by the sarcoma and carcinoma in common with other solid tumors and in contradistinction to cystic tumors are: They are more generally bilateral; they do not attain the enormous size that an undisturbed cyst will; their surface is smoother and

their shape more regular (especially that of the sarcoma) than that of cystomata. All solid tumors of the ovary follow the general shape of the organ in their growth, probably because the pathological change effects the tissue of the whole organ, and the enlargement is more nearly uniform than that in cystic degeneration, which grows and extends in the directions of least resistance; fewer adhesions are found complicating carcinoma and sarcoma than cystoma. Ols-hausen attributes this to their smaller size and the presence of ascites. The presence of ascitic fluid is quite characteristic of solid ovarian tumors, especially carcinoma. Aside from the pressure upon the large vessels which often causes œdema of the feet and legs, but rarely causes much free fluid in the abdominal cavity, only metastases to the peritonæum and the mechanical irritation of the tumor can account for this almost constantly accompanying complication.

By way of introduction to the subject—carcinoma of the ovary—I will report Dr. Krusen's case referred to before:

CASE I.—Mrs. C. B., aged fifty-six years, born in Switzerland, was admitted to the hospital December 8, 1905. Her father died at seventy years of age of dropsy and her mother at thirty-five years of paralysis. As a child, the patient had the usual diseases of childhood. Puberty at nineteen years; menses regular and painless. Mrs. B. has been married twice. She has given birth to two premature children. Menopause came on eight years ago. Has always worked hard and enjoyed good health until two years ago, when she suffered with hemiplegia for three months following an attack of pleural pneumonia. Her family physician, Dr. McAniff, caused the paralysis to disappear by the employment of electricity, massage, iodides, salicylates, and mercuric chloride. Very soon after the disappearance of the pneumonia and paralysis pain of a decided character was experienced in the right iliac region. A slight swelling was soon felt in this region, and was succeeded by swelling of the leg, thigh, and abdomen. Three days after admission to the hospital coeliotomy was performed. A fibroid uterus and right ovary of malignant appearance was removed. The left ovary was removed along with a great deal of friable inflammatory tissue, but was not thought to be undergoing any pathological change. Enlarged retroperitoneal glands were also removed. The bladder, which was suspended by adhesions midway between the umbilicus and symphysis pubis, was released and lowered into the pelvis. That part of the omentum thickened and inflamed was ligated and removed. Abdominal drainage was carried into the pelvis and the incision closed. Six days later the temperature was normal and the patient left the hospital forty-two days after admission.

The pathological report was as follows: The uterus (9 cm. by 5 cm.) is quite hard, and has evidently undergone fibrous change. The posterior lip has been torn off. A portion of the right tube is still attached. Anteriorly and to the lower segment are attached two subperitoneal fibroids, each is attached by a slender pedicle. One is 2.5 cm. in diameter and the other twice that size. The appearance of the posterior wall of the uterus gives evidence of its having been torn from strong adhesions. The uterine cavity, except at the fundus, is obliterated, the remaining mucous membrane is roughened. Sight and touch reveal a hard, white growth involving the posterior wall to within 2 cm. of the fundus, with fairly clear outline.

Microscopical examination shows the fundus normal plus an excess of fibrous tissue. A section from the

posterior wall shows typical adenocarcinoma. The tumor glands do not penetrate beyond the muscular wall of the uterus, and the surrounding tissue is not infiltrated by cancer cells. The tumor is composed of nests of cells cover stems of stroma and fill in the intervening spaces. In places these glands are

vesicular. In some places the cells are cylindrical, and are arranged at right angles to the stroma, occasionally between the stroma and the muscular wall.

One cell contains two large well stained nuclei. In places the stroma is infiltrated with round cells. The specimen marked right ovary is 5 cm. in diameter, hard and white. It is surrounded by a mass of inflammatory tissue, in which the tube is lost.

The microscope reveals the typical appearance of adenocarcinoma. The cells of this growth are closely packed together, and have oval or slightly irregular nuclei, but the cell outlines cannot easily be made out. The retroperitoneal glands and omentum gave no signs of malignancy, as sections of each were characterized by round celled infiltration and wandering leucocytes.

Four months after operation Dr. McAniff reports Mrs. B. as gradually becoming weaker. The incision is swollen, glazed, and still discharges pus. She has no appetite and is rapidly losing weight. A post mortem examination will very likely reveal carcinoma in the incision transplanted there during operation. It will also be of great interest to determine whether metastases caused the pleural pneumonia of two years since.

Since I wrote this history the patient has passed away, and fortunately I was able to perform an autopsy, eight months after operation, with the following result:

Cadaver very much emaciated, abdomen not distended. Incision of operation visible with opening of sinus at lower angle, showing extremely thin abdominal walls. No adipose tissue and almost no muscular tissue present. Sinus, opening about three inches above the pubis at the lower angle of the scar, extends like a rubber tube to a pocket situated just beneath the promontory of the sacrum and retroperitoneally; it is large enough to easily admit the handle of the scalpel, and has thick, smooth, noncollapsible walls. The omentum is adherent to the sinus and to the head of the cæcum. The intestines are collapsed. They are normal in appearance, except for a small, hard nodule the size of a hickorynut situated at the ileocecal junction, from which point the appendix, one inch long, stands out as though decidedly fibrous in structure. Section of the nodule shows a surface gray in color and crumbly in nature. Section of the appendix fails to disclose any calibre; indeed, it is quite solid. Retroperitoneal glands show no enlargement. The bladder could not be removed—the body had been embalmed and the peritoneal cavity filled with fluid, which was sponged out and replaced—though its walls felt normal. No evidence of cancer could be found except the intestinal nodule and appendix prove carcinomatous. The liver was slightly enlarged, edge rounded, surface blotched, and grayish. Numerous sections through both lobes failed to reveal anything except an excess of fibrous tissue and extreme friability. The stomach hangs low, but is small. Its walls are thin, but not diseased. Spleen enlarged to twice the natural size, very friable, and deeply colored. Section reveals nothing further. Pancreas normal. Left kidney slightly enlarged. Section shows capsule easily removed, cortex thick, color light, evidently a large white kidney. Right kidney less than one third the normal size, section proves it to be cystic; when the clear fluid is emptied from the numerous

small cysts it collapsed like a toy balloon. Its cortex is thin and its pelvis preserved. Both lungs are normal, except for a decided hypostatic congestion in the lower lobes. Heart is small. It could not be opened. Liver section shows proliferation of the connective tissue, with fatty infiltration of the hepatic cells. A typical picture of hepatic cirrhosis. Kidney is marked by degenerative changes in the epithelial cells of the tubules and Malpighian bodies, evidently the large white kidney of chronic parenchymatous nephritis. Appendix normal, except for some round celled infiltration and excess of fibrous tissue. Small gray nodule from ileocaecal region is made up of fibrous tissue and round cells. Spleen presents evidence of chronic passive congestion in the hyperplasia of trabecula and stroma and disintegrating blood cells.

The post mortem examination does not show that the patient suffered from recurrence of the carcinoma.

While a hospital resident I was privileged to study a very interesting case of carcinoma of the ovary, and through the courtesy of Dr. Wolfe and Dr. Applegate, to whose services the case properly belonged. I am permitted to report it at this time.

CASE II.—Mrs. R. J., age thirty-four, admitted to the hospital on April 4, 1905. Family history negative. As a child, Mrs. J. had measles, whooping cough, and malaria. Menstrual history normal. Has been married twelve years, and is the mother of four children, all living and well. Youngest child is five years of age. Labors have always been normal. Patient has always had excellent health until about seven months ago. On August 2nd, or eight months previous, she noticed her last menses. Soon after this conception she suffered two severe falls, which caused her to feel sick and vomit. She, however, continued weaving in the factory until two months ago. Edema of the feet and legs was then quite marked, though it had been noticeable a month previous to this. During the last two months she has lost a great deal of flesh. Her appetite is poor. No vomiting; no melena; tongue thick, red, and beefy; bowels regular; urination frequent.

On admission it was noted that her face was drawn and skinny; body wasted to a skeleton; abdomen very much enlarged and nodular; skin was pale, with a decided tendency to cachexia. Caput medusae plainly noticeable. Palpation showed the liver nodular, and enlarged downward to the right ilium and, in the median line, to the umbilicus. Because the enlarged left lobe occupied the splenic area and could be moved in certain directions, independent of the right lobe, it was at first mistaken for the spleen. The uterus was enlarged to the umbilicus. Dulness was present in the right flank and over the abdomen, excepting a small area above the left iliac fossa. Fœtal heart sounds could not be elicited, and the patient stated that she had not felt life for some days. Ureanalysis showed albumin in decided quantity, but no further evidence of disease. A blood count gave the hæmoglobin sixty-five per cent., red blood corpuscles 3,500,000, white blood corpuscles 28,000, and the presence of many nucleated red corpuscles.

A rapid, painless delivery took place twelve hours after admission. The child was resuscitated with difficulty. By means of oxygen it was kept alive eight hours and then died of atelectasis. The mother died a few hours later.

At autopsy a sixteen pound liver riddled with carcinomatous nodules was removed. No further evidence of carcinoma was noted at the time, but the uterus and appendages were removed to further study the uterus at this stage of involution and the left ovary, which was three centimetres in diameter.

On section the enlarged ovary was found solid and the microscope revealed its tissue also riddled with carcinoma. The case was considered primary carcinoma of the left ovary, with secondary nodules in the liver. Since beginning this paper I have made sections of the right ovary, which is apparently normal macroscopically, and was surprised to find plain carcinomatous changes. I regret not having made a complete autopsy of the baby. Perhaps I would have found a very interesting cause for the atelectasis.

Little or nothing will be said of carcinomatous degeneration in ovarian cysts, dermoids, etc. Carcinoma accompanying cystoma, papilloma, and dermoids is of frequent occurrence. That many of these malignant cysts, dermoids, etc., come under observation after the disease has advanced to a stage that it is almost impossible to tell just what the original tumor was is also well known. However, a hard noncystic tumor, where the entire ovary is evolved uniformly, is most apt to be primary carcinoma, while a more cystic condition would indicate secondary carcinomatous change.

Carcinoma of the ovary is more often primary than secondary, though secondary infection of this organ is not infrequent. Secondary carcinoma of the ovary when the primary lesion is in the breast or pylorus of the stomach is not uncommon. Coupland collected eighty-nine cases of mammary cancer, which showed at post mortem examination secondary involvement of the ovaries in five cases; in three cases both ovaries were carcinomatous and in two cases only one. Penrose says: "In twenty-nine cases of death from cancer of the breast, both ovaries were involved in three cases." J. W. Kelly reported a case of carcinomatous ovary occurring in a patient of his from whom he had previously removed a cancerous nodule of the breast. With such evidence before us we are hardly justified in giving too bright a prognosis after even a very radical breast amputation for almost incipient malignancy.

Carcinoma of the ovary secondary to carcinoma of the uterus is said to be rare. Cullen states, in his very practical work, that he "has never had a single case of carcinoma of the body in which involvement of the appendages had taken place." Cullingworth reported one case, and commented on its extreme rarity. He reported the patient in good condition fourteen months after radical operation. (It will of course be understood that I do not refer to the spreading of cancer from uterus to appendages by direct contact.) Mr. L. Hudson, in 1887 to 1889, was able to show in fifty-two autopsies following cancer of the uterus six cases of secondary deposits in the ovary; in three cases both glands were involved and in three but one. Most authors, including Dudley and Penrose, say that carcinoma of the ovary is more often bilateral. Thirty-three cases from Leopold's sixty-three (twenty-three of his own and forty collected from literature) were bilateral. Of the ten cases reported by Norris only four were bilateral. Four of Kelly's thirteen case were bilateral.

In the diagnosis of carcinoma of the ovary age is of little value, carcinoma of the ovary is said-

to have occurred during childhood. Atlee reports a case at eighteen years of age. After making the diagnosis of malignant disease he refused to operate, but an autopsy showed carcinoma with pulmonary metastases. He reports another case of malignant disease at the age of twelve years, but does not specify carcinoma.

Of the ten cases reported by Norris two were under thirty years of age. Olshausen has observed it at the age of twenty-six, twenty-three, twenty-one, nineteen, twelve, eleven, and eight years. In his *Diseases of the Ovaries*, he gives ten cases occurring before twenty years, seventeen from twenty to twenty-nine, eight from thirty to thirty-nine, fifteen from forty to forty-nine, seventeen above fifty. From his experiences he concludes that puberty is a predisposing factor and an important point in diagnosis. The most common symptoms noted were: Pain, menorrhagia followed by amenorrhœa in the later stages, constipation, loss of weight and strength, foul discharge, pleuritic effusion, ascites without evidence of hepatic disease or organic disease of the heart or kidneys. Bland-Sutton says: "Carcinoma of the ovary grows rapidly, if removed recurs, and speedily causes death." Undoubtedly this is true as concerns the course and termination of this disease in the majority of cases.

But the occurrence of pregnancy, as reported by Kelly and others, in an individual where both ovaries are well advanced in carcinoma, shows that occasionally quite a little time elapses before all the ovarian tissue is involved and destroyed functionally. Many of the cases (especially cystocarcinoma) give a history of disturbed menses over a period of two years before a tumor is discovered. On the other hand, many patients seek medical aid for "swollen stomach" (ascites) and a few general symptoms affirming that they were absolutely in good health two months before. Death usually results from exhaustion, marasmus, pulmonary, embolism, metastases to the peritonæum causing peritonitis, or to the lung causing pleurisy. I believe intestinal obstruction has caused death in some few cases.

Cancer secondary to that of the ovary may occur in the peritonæum, lymphatic glands, stomach, intestines, liver, spleen, abdominal walls, uterus, and lungs. Olshausen says he observed one case of metastases to the liver such as our obstetrical patient suffered from. Dr. Thorne reported the removal of an ovary for carcinoma; death five months later from recurrence in the incision and in the other ovary with metastatic nodules in the liver. Price also reported metastatic nodules in the liver of a patient upon whom he operated for cystocarcinoma of the ovary. Two of Norris's ten cases showed metastases, one to the body of the uterus, as did Dr. Krusen's, and the other to mesenteric glands and intestines. One of Cullingworth's cases occurring in a woman of thirty-three years showed metastases to the uterus.

We repeat that in the diagnosis of carcinoma of the ovary age can bear no important part. Cessation of menstruation before the menopause is a suspicious symptom. More important is ascites, accompanied by a small tumor—usually bilateral.

The mobility of the tumor, although somewhat slight, and the nodular irregular surface are very indicative of carcinoma. Rectal examination may reveal enlarged lymph glands. The majority of these patients come under observation late, when emaciation, cachexia, etc., make the diagnosis. Fibroma may be mistaken for carcinoma. While fibroma is hard it is not nodular. Ascites is present in both, but the constitutional depression is not nearly so great in fibroma. Carcinoma is found in younger patients and metastases is pathognomonic of carcinoma.

The prognosis is bad. Penrose says seventy-five per cent. of all patients operated upon suffer a recurrence and death. And Olshausen says "the prognosis is absolutely fatal. Even in the most favorable event, if the ovarian tumor is extirpated completely, and no metastases can be discovered, a rapid return appears to be the invariable rule." Not many years ago surgeons of such note as Wells, Keith, Atlee, and even Olshausen (early in his career) advised against operation whenever malignancy was diagnosed, because of the high mortality and almost certain return. I have already mentioned Atlee's refusal to operate upon the girl of eighteen years. Concerning the patient, aged twelve years, he says, "the case had every appearance of being malignant and necessarily fatal, hence an operation was unjustifiable." But surgeons have grown since Atlee's day. Although a gloomy prognosis still prevails, nearly all operators advocate radical operation. To the usual history of extirpation of carcinomatous ovary or ovaries, recovery, return, and death four months later there are exceptions. Cullingworth reported a case where he operated on a woman, sixty-two years of age, for bilateral carcinoma of the ovary against the advice of several eminent consultants. The patient recovered and enjoyed good health for more than three years. Then she began to fail, and died from a supposed recurrence. In the same lecture he reported an operation for coexisting carcinoma of the ovary and uterus in a single woman of thirty-three years, with recovery, recurrence in the vaginal scar, which was excised, and health in perfect condition three years later. A second case of carcinoma of ovary and uterus, mentioned before, was well fourteen months after the operation. Perhaps the rule of operation saves more cases of apparently inoperable carcinoma which prove to be nonmalignant.

We cannot tell how many patients die of exhaustion after suffering months or years with what has been diagnosticated as malignant disease of the ovaries. Sometimes the surgeon has been so bold as to open the abdomen, saw the tumor face to face, felt that his diagnosis was confirmed, and made sure that it would not be proved wrong by getting the patient back to mother earth at an early day. But the literature is teeming with cases of so called inoperable cancer, where the patient, instead of dying after an exploratory incision followed by great relief because of the removal of the ascitic fluid, improved in health. Occasionally in such a case the surgeon has placed a query mark after his diagnosis and consented to attempt a removal of the tumor, and is never-

theless surprised when the pathologist finds no evidence of malignancy, the patient continues to enjoy good health and the tumor shows no signs of recurrence. In the face of such evidence it would appear wise to rule out all so called borderline cases. Kelly says "from a practical standpoint all ovarian tumors must be considered as malignant until removed and proved otherwise." But the inoperator's inborn fear of malignancy causes us to change it to read "from a practical operative standpoint all ovarian tumors should be considered as benign until removed and proved otherwise." Perhaps a case of positive metastases may be absolutely inoperable, but that depends on the part involved secondarily.

When the metastases occurs on the uterus it can as readily be removed as the primary lesion. Billroth is said to have removed both ovaries and a metastases to the intestines with at least temporary results. In the ten cases reported by Norris there was an operative mortality of ten per cent. Of Werder's fifteen patients two died during operation—operative mortality of 13.3 per cent. Two died four months later; three eight months; one died three years and four months later; one three years and six months; one recurred five months later; one was well one year and five months later; one two years and five months; one two years and nine months later; one three years and seven months later; one had not been heard from. Cohn reports eleven patients operated upon with four deaths; operative mortality 36.3 per cent. One patient died nine months later from recurrence; one was well 1.5 year after operation; one, 1.3 year; one, one year; one had not been heard from. The conspicuous cause for the high operative mortality was sepsis.

Recurrence in the ovary left behind at the time of operation, because it was apparently not involved, has been reported so often that it seems advisable to look upon this as the rule, and at the first operation remove both ovaries.

Because sarcoma of the ovary is more rare and gives a better prognosis than carcinoma of the ovary, Dr. Krusen's case has proven very interesting. The history is as follows:

CASE III.—Mrs. L. O., age thirty-three years. Her family physician, Dr. Goebel, on January 19, 1906, called Dr. Krusen in consultation. For three days the patient had suffered from persistent nausea and vomiting. One week before the trouble began with pain in the right inguinal region and distended abdomen. Examination revealed a mass extending up to the umbilicus and occupying the lower right abdomen; a mass was also detected posterior to the uterus. The pain radiated to the back. The bowels moved frequently and freely. A diagnosis of ovarian cyst with twisted pedicle was made, and the patient sent to the hospital for operation.

The hospital record states that the patient's father died of consumption at fifty-four years of age; her mother is still living, aged sixty-four years, but suffers from severe attacks of vertigo. Two brothers and two sisters are living and well. Otherwise, the family history is negative. The patient, as a child, had measles, chickenpox, typhoid, diphtheria, scarlet fever, and rheumatism. Puberty at seventeen years, regular and painless, but scanty. She is the mother of three children. The first child was born in 1893, after thirty-

two hours' labor. The second labor was easy. The third labor lasted three days, but no instruments were used. On admission the temperature was 103.2° F.; pulse, 100; and respiration, 30. Coeliotomy was performed on the 21st, and revealed a quantity of bloody fluid, in the abdominal cavity. The pedicle of the tumor originated at the right ovary and had one half twist. This pedicle was clamped, and the tumor removed. Because the opposite ovary was involved, its pedicle was likewise clamped and the tumor removed. During the operation a gangrenous appendix, with a corresponding gangrenous mesoappendix, floated up into view and was removed. The stump was cauterized with carbolic acid, followed by alcohol. The lower half of the omentum was thickened, inflamed, and friable. It was ligated and amputated. The abdomen was flushed and filled with salt solution, and closed without drainage. The operation then was: Bilateral salpingo-oophorectomy, appendectomy, and ventral suspension of the uterus.

On the first day following the operation the temperature was 105; pulse, 140; respiration, 42. This was attributed to reaction. The second day temperature, 98.3°; pulse, 106; respiration, 22. On the third and fourth days temperature 98.3° to 99°. On the fifth day temperature, 97.3° to 101°; pulse, 120 to 124; respiration, 30 to 34. On the ninth day temperature, 98.3°; pulse, 120 to 128; respiration, 34 to 36. On the eleventh day temperature, 103°; pulse, 130 to 140; respiration, 34 to 36. This day she died, exhibiting a temperature by axilla of 107.2°; pulse, 148 to 152; respiration, 50 to 52.

The pathological report was as follows: The right ovary weighing four pounds is enlarged uniformly. Its surface is smooth and white, several small cysts appear near the surface. Upon section the greater part of it is milky white in color, and mottled areas are in evidence. Necrotic changes have begun. The entire growth, excepting the cysts, is composed of cells having small round nuclei which stain deeply, except in the necrotic places. Numerous bloodvessels and capillaries, with little or no walls about. The tumor is a small round celled sarcoma. The left ovary weighs one half pound, and is of the same nature macroscopically and microscopically, except that there are no cystic changes. The small round cells indicate a very malignant and very rare sarcoma. The appendix and omentum show only signs of inflammatory changes. The autopsy revealed nothing further, but knowing the tendency to emboli in sarcoma, it would have been interesting to have discovered the exact cause of the gangrene of the mesentery and the appendix.

Bland-Sutton says "the ovary, like other paired organs, is very prone to become the seat of sarcoma in early life; to this succeeds a period of comparative immunity, followed by a second period of renewed but diminished liability." All authors agree that ovarian sarcomata are more common in children than in adults. Doran delivered a seven months child, which survived birth but a few minutes, suffering with bilateral round celled sarcoma complicated by ascites. Winchell reported a similar case. Harris reported a sarcomatous ovary with twisted pedicle, causing obstruction of the bowels of a baby, twenty-two months old, with good result. Another case of removal of ovarian sarcomata at thirty-three months is on record. Sutton collected twenty-one cases occurring in children fifteen years of age and younger. Kelly had one case in a girl of twelve years, and Baldy one at sixteen years. Olshausen collected thirty-seven cases, five of

which were from twenty years old to twenty to thirty, eighteen from thirty to forty, and four from fifty-eight to sixty-seven. In 1894 Pick collected twenty-three cases, ten of them under twenty years of age.

The majority of observers believe ovarian sarcomata to be more often bilateral than unilateral. Sutton states that half of the cases are bilateral in infancy, and in adults twenty per cent. of the cases are bilateral. Landau collected twenty-eight cases (four of these were so called endotheliomata and five epitheliomata), they were all unilateral. Seven of Leopold's twelve cases were bilateral, and one of Olshausen's fourteen cases. According to Olshausen spindle cell sarcoma is the most frequent form of ovarian sarcoma, while pure round cell sarcoma is extremely rare; one out of fourteen in his experience.

We have already stated that the surface is smooth and the shape much like that of a monster ovary, hypertrophy of the ovary. On section they are milky white, with pink areas here and there. Sarcomata are said to undergo carcinomatous transition and fatty degeneration. Of still greater importance is the tendency to the development of thrombi in the vicinity of the fatty changes. These thrombi readily break down and cause emboli or hæmorrhages, which may rupture the tumor and set up a peritonitis. Metastases does not occur early. It does not involve the lymphatics, although it is far from uncommon to the peritonæum, intestines, stomach, and pleura. Pure spindle cell sarcoma is said to exhibit the least tendency to metastases. The round cell form is much more apt to show metastases. According to Klebs, adenosarcoma has the greatest tendency to the development of metastases. Leopold states that diffuse metastases always occur in bilateral ovarian sarcoma. Olshausen found metastases (to the peritonæum, pleura, and uterus) in one of his fourteen cases, one of the fourteen developed metastases (of the omentum) three months after operation.

The duration of sarcoma varies. Definite knowledge as to the duration is obtained rarely and with difficulty. These patients present themselves only when some complication, as ascites becomes marked. Leopold states that in three of his cases the duration was three to six months. Pick had one case of round-cell sarcoma which had had constant symptoms for one and one half years, and at operation no metastases were found. Olshausen says in one case of undoubted cystosarcoma he observed a duration of nine years. It is quite probable in this case that the cystic changes did have a duration of nine years, but who can say the sarcoma was not secondary and of only a few months' duration? Baldy's case of sarcoma, weighing ten or fifteen pounds in the girl of sixteen years, had a duration of four years.

The immediate cause of death is usually exhaustion and marasmus. Sometimes death is caused by peritonitis, pleurisy, or pulmonary embolism.

From these statements it would seem that sarcoma is more often unilateral, rarely attended with metastases, duration indefinite, but its malignancy is not to be compared to that of carcinoma.

effecting other organs gives the best prognosis of all malignant tumors of the ovaries." Pick agrees concerning those unilateral, but maintains that the prognosis is bad when the affection is bilateral. Kratzenstein says that fibrosarcoma never recurs. Sarcoma must be differentiated from carcinoma and fibroma, more for the sake of science and prognosis than treatment. Age is of no value in differentiating it from carcinoma. In carcinoma the nodular tumor will have a restricted motility, and signs of peritonitis are often present. General systemic failure, cachexia, great loss of flesh and strength characterize the carcinoma earlier in its course. After removal carcinoma is more apt to recur and cause death. Fibroma usually occurs in adults of forty to fifty years. According to Olshausen, when "the diagnosis of a solid ovarian tumor is assured, we may suspect a fibroma from the good general condition, the small size of the unilateral tumor, the absence of ascites, and especially from demonstrable lamellar calcification of the tumor; the opposite conditions make the diagnosis of sarcoma more probable." Fibromata are extremely rare, and are usually found at autopsy. Penrose hangs his diagnosis of sarcoma as differentiated from myoma and fibroma on three pegs, viz.: (1) Rapidity of growth; (2) bilateral tumor; (3) presence of ascites. Pleurisy, especially on the same side as the effected ovary, is a common complication in sarcoma. Torsion of the pedicle, such as occurred in Dr. Krusen's case and first called attention to the patient's need of a physician, is not infrequent. It is probably accounted for by the small or medium sized smooth tumors without anchoring adhesions. The treatment is extirpation. Contrary to what we found to be true in carcinoma (recurrence) extirpation rarely fails to effect a radical cure. Of Werder's five patients one died during the operation. She was suffering with general peritonitis when operated upon. The other four made permanent recoveries. Of Olshausen's fourteen patients two died of shock on the day of operation, and one of sepsis on the third day; one had a recurrence in the remaining ovary three months later. Cullingworth reported two patients cured; one well thirteen years after operation, the other seven and one half years. Of Sutton's twenty-one cases in girls, fifteen years old and under, seven patients died during operation, two suffered recurrence and death in one year, one died two years later of unknown cause; the eleven others remained cured. Cohn reported three deaths from marasmus, shock, and sepsis in ten operations. One patient died one year after operation of recurrence and one two years after operation; one was well fifteen months after operation; one four months; one five weeks; one four years; and one was well eight months after operation. Pfannestiel believes there are about thirty per cent. of permanent cures, but this is a much smaller percentage than any of the cited statistics.

A recurrence in what appeared to be a healthy ovary as reported by Alcock, Fenton, Olshausen, and others, make it advisable to remove both ovaries.

In closing, I should like to register a remonstrance against the indiscriminate use of the word "malignant" as applied to tumors of the ovary. Despite the very favorable prognosis, that we have endeavored to picture in the case of sarcoma as compared with carcinoma operators make the broad diagnosis of "malignancy," and may even refuse to operate; writers make true but very misleading statistics when they state that Schröder or some one else operated on one hundred cases of malignant tumors of the ovary with (x) percentage of operative mortality and (y) percentage of recurrence.

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2721 WEST LEHIGH AVENUE.

ALBUMINURIA OF PROSTATIC AND SEMINAL ORIGIN, WITH REPORTS OF TWO CASES.

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As I have been able to find practically nothing in the literature concerning albuminuria of prostatic or seminal origin, and as the recognition of this form of albuminuria is very important, especially in examinations for life insurance, the two cases mentioned in this article seem worth reporting in detail.

We all know that albumin is not necessarily of renal origin. It may be due to the presence of pus or blood in the urine. These causes are mentioned in the textbooks on the urine, but absolutely nothing is said about the fact that semen or prostatic fluid when mixed with the urine may give the reactions for albumin.

It is common when we find albumin and no other evidence of kidney disease, to say that it is "functional" or "physiological" or "cyclical," and the literature on these forms of albuminuria is rather abundant.

It is often very important to determine positively whether an albuminuria is due to kidney disease, whether it is "physiological," or whether it is due to some extraneous cause. This is particularly true in the case of applicants for life insurance. Each of the cases reported below was refused life insurance several times. It was afterwards determined that they had absolutely no kidney trouble.

Every one who has had much experience in examining urine voided after massage of the prostate and vesicles knows that it is not at all uncommon in such cases to obtain a more or less marked reaction for albumin. In fact, when the more delicate tests are used almost every case will show a slight trace of albumin. The reactions may show serum albumin, nuclealbumin, and globulin all present, or any one or two of these. The reaction for nuclealbumin is usually the most distinct, however, and when the quantity of albumin present is very small, this is usually the only form present. The ordinary tests are used, but in order to show albumin after massage of the prostate and vesicles it is sometimes necessary to use the more delicate tests.

CASE I.—The patient was a young man of twenty-one. There was no history of venereal disease, or of any previous disease of the genitourinary tract. He had never had any illness except measles, whooping cough, and typhoid fever when he was a child. His habits were good, he did not smoke nor drink, and had led a continent life sexually.

About two years ago he applied for life insurance, but was rejected on account of the presence of albumin in his urine. He went to a physician, who confirmed the finding of the insurance doctor as to albumin, but said he could find no evidence of kidney trouble on microscopical examination of the urine. He was put under treatment, and his urine examined from time to time. It usually contained albumin, in varying quantity, but no other evidences of renal trouble could ever be found. The patient's general health was fairly good during this time. In fact, instead of getting worse, he improved steadily. After continuing treatment for about six months, he went on the road as a traveling salesman, paying no further attention to his urine until a few weeks before he came to me. While he was traveling his general health was better than ever before in his life. I do not know what treatment he received from his first physician, except that he was put on a diet.

Recently he went to his physician again, to see if it would be safe for him to apply for life insurance a second time. The physician found albumin, but nothing else. This visit was in the afternoon. An examination of his urine the next morning showed no albumin whatsoever, but an examination that afternoon showed a considerable quantity, and a clouded urine. I examined a specimen of this last urine.

The urine was light yellow, cloudy, contained no shreds, specific gravity 1.026, reaction acid, urea 1.5 per cent., albumin present about one fourth of one per cent. by weight; no sugar, moderate excess of indican. Microscopical examination showed considerable mucus, a very few leucocytes, a few epithelial cells, apparently from the prostate and bladder, and a few spermatozoa, which were broken up and difficult to recognize. There were no casts, blood, or pus. The finding of spermatozoa in the urine, together with epithelial cells, apparently of prostatic origin, suggested a further inquiry into the history of the case, and a physical examination of the patient to determine the origin of the albumin.

On careful inquiry, it was found that for about two years the patient had suffered from frequent nocturnal pollutions. These had recently increased in frequency, until now they were of almost nightly occurrence. Physical examination showed the prostate to be large and boggy, and very tender. The vesicles were distended and tender. The bladder was emptied, a catheter inserted, the bladder thoroughly washed with sterile water, and the catheter left in place for a half hour. The urine thus obtained was examined, and failed to show even a trace of albumin.

CASE II.—The patient was a man thirty-eight years of age; stenographer by occupation. No venereal history. Eight years ago he had had a mild seminal vesiculitis, due to withdrawal, was treated and recovered. When the patient came to me he did not complain of any symptoms, but said he had been refused life insurance by a number of companies, and wanted an examination to see whether he had any kidney trouble or not. He was first refused one year before he came under my care. Appetite and digestion were good, bowels acting regularly. The patient was a large, well nourished man; did not appear to be anæmic. The genitals were normal. First urine slightly cloudy (phosphates), second also cloudy, prostate was slightly tender, rather large and oedematous, both seminal vesicles were tender but not enlarged. The third urine (after massage of the prostate and vesicles) was turbid, and contained numerous tapiocalike bodies. The urethra and bladder were normal. Physical examination of the kidneys was negative.

Examination of the urine (passed before massage of the prostate and vesicles) showed it to be yellow, acid in reaction, specific gravity 1.030, urea 2.2 per cent., albumin, a trace of serum albumin and a trace of nuclealbumin; no sugar; indican normal. Microscopical examination showed a few hyaline casts, a few crystals of calcium oxalate, and an occasional large squamous epithelial cell but no spermatozoa. After washing the bladder and allowing the urine to collect and then drawing it off with the catheter, no albumin was found.

The form of albuminuria under consideration seems to occur in cases of prostatic congestion and mild inflammation, in individuals who are continent or whose sexual lives are irregular. In one of the cases reported the patient was continent; the other had practised withdrawal for several years. Habitual sexual excitement without gratification is an important factor in bringing about the condition of the prostate and vesicles responsible for this form of albuminuria. Constipation is usual in these cases and I believe it is a factor in causing and keeping up the trouble.

The prostates in these cases are found to be tender, slightly enlarged, soft, and oedematous. The vesicles are usually tender, often distended, and the posterior urethra very sensitive. An interesting feature in these cases is the fact that the albuminuria is intermittent. It was noticed

that it was sometimes absent in the morning, but present the same afternoon. The prostate and vesicles are probably in a relaxed, atonic condition, and empty a taseo of tapiocalike bodies, squeezing out their contents into the posterior urethra and bladder.

How can we differentiate this from other forms of albuminuria? We examine the urine of a patient and find albumin. We examine it microscopically for evidences of renal trouble. Finding none, and no pus or blood to account for the albumin, we can say it is either a so called "physiological" albuminuria, or one of prostatic or seminal origin. In our microscopical examination we may have found a few leucocytes, epithelia from the prostate, and few or many spermatozoa. These findings should suggest a physical examination of the patient, to determine whether he has any disease of the prostate and seminal vesicles.

The patient passes his urine in two glasses, but not entirely emptying the bladder. The first two specimens may be clear, or they may show a slight cloudiness, not referable to phosphates or to pus. The prostate and vesicles are then palpated per rectum, and their contents expressed. In these cases the expressed fluid is often sufficient to appear at the meatus. The remainder of the urine is then passed, and is found to be turbid, and often to contain bluish white, translucent, tapioca-like bodies. This urine will be found to give a much more marked reaction for albumin than that passed before massage.

The urethra is now irrigated, a catheter passed into the bladder, and the latter washed thoroughly with sterile water. The catheter is allowed to remain in place from a half to one hour, or until sufficient urine is collected for examination. If the bladder has been cleansed thoroughly, and the albumin is from the prostate and vesicles, the urine collected by catheter will not show any albumin. It is very difficult, however, to cleanse the bladder and posterior urethra so that none of the prostatic secretion will become mixed with the urine. In fact, the presence of the catheter in the posterior urethra sometimes seems to cause a flow of secretion back into the bladder, contaminating our specimen. For these reasons, the surest way of obtaining an uncontaminated specimen is to catheterize the ureters and draw the urine directly from the kidneys. Catheterization of the ureters is such a simple procedure in such a case that I think it is justified in every case where the bladder washing and the use of a catheter are not sufficient. If the ureters are catheterized with aseptic precautions, the procedure is entirely without risk.

The question that I have not been able to settle positively is the exact source of the albumin. Is it due to semen, to prostatic fluid altered by a transudation into it of serum from the blood, or may both of these be factors? I do not believe normal prostatic fluid alone when mixed with the urine would give the reaction for albumin. The albumin usually found in the urine after massaging the prostate and vesicles is probably due to the semen expressed during the massage. There is no question but that semen, even in small

with absolutely normal urine, will give positive reactions for albumin. I have made this experiment a number of times since I first began to study this question, and by adding a sufficient quantity of the seminal fluid very marked reactions for albumin may be obtained. The second possible origin of the albumin, i. e., by transudation of serum from the blood, seems plausible, especially when we remember that in almost all these cases the prostates are in a relaxed, cedematous condition. Where spermatozoa are found in the urine, I think it is safe to ascribe the albumin to semen, but when they cannot be found we must look elsewhere, and the second explanation is the only one that seems at all plausible.

I hope that a further study of this subject will enable us to explain the origin of the albumin more satisfactorily than is possible at present. Sexual disorders are not very well understood, and should receive more careful study. The majority of genitourinary men seem to take very little interest in the purely sexual diseases. I am of the opinion that a more careful investigation of albuminuria of prostatic or seminal origin will clear up many of the cases that are now loosely denominated "physiological" or "functional" albuminuria.

903 M STREET, N. W.

THE TREATMENT OF TUBERCULOUS GLANDS OF THE NECK BY THE X RAY.

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It has been proved beyond doubt that tuberculous glands of the neck can be successfully treated by the x ray. During the past year numerous articles have been written on this subject, and a great many cases have been reported.

Those cases that have been successfully treated can be regarded as almost permanent cures due to the fact that the histology of the affected part has been changed. A fibrous tissue formation is the result of the treatment, and by its presence it both retards the growth of the tuberculous glands, and most probably prevents the enlargement of the glands in the immediate neighborhood.

There have been cases of tuberculous glands of the neck in which x ray treatment has not been successful, and this may be ascribed to the fact that the surgeon should have been consulted instead of the radiographer. In these instances caseation and softening have taken place, and, notwithstanding active treatment by the x ray no absorption has occurred. They then discharge their contents with the formation of sinuses. Therefore, in glands where softening has occurred, treatment by x ray is not advisable, for it gives no positive results, and these patients should be referred to the surgeon.

The postoperative treatment of tuberculous glands of the neck is important and is usually overlooked. After operation, even though it has seemed most thorough and all the glands that the surgeon sees and feels have been removed, it is

often found that in a few weeks or months a swelling will appear in the region which has been operated on, and sometimes a discharging sinus will form. This is due undoubtedly to some glands which have been overlooked and left behind and then rapidly grow, causing this seemingly recurrence of the trouble. In order to prevent this, x ray treatment after each operation is therefore advised.

It has been shown that many of the glands of the neck are inaccessible and are prone to undergo tuberculous change if some of the more superficial glands are involved. It seems, then, most important that postoperative x ray treatment should be given.

In several cases treated by the writer the patients who were girls or young women have been most grateful that an operation was unnecessary, due to the fact that an unsightly scar was obviated. They have seen cases or have friends who have had operations performed for this trouble, and the idea of having such a blemish as a scar was very distasteful. Therefore this is another reason why x ray treatment should be given whenever it is possible. But, should a case be not proper for x ray treatment and require surgical intervention there should be no hesitation on the physician's part to recommend operation.

The following case is of interest because a previous operation had been performed:

CASE I.—Mrs. F., age thirty-two years, a well built person, was recommended to me at the Jewish Hospital for x ray treatment of tuberculous glands of the neck. On examination I found a scar on the left side of the neck, which was due to an operation performed about one and a half years ago for enlarged glands. The scar was large, unsightly, and produced a long, deep groove throughout its length. There was no pulmonary involvement. On the right side of the neck several enlarged glands were present of firm consistency, which were movable. The glands averaged in size from a small bean to a hickory nut. The patient told me that the glands which had been removed from the left side of the neck felt like those on the right side, and seemed just as large. The glands were present on both sides of the neck at the same time, but the patient only allowed the surgeon to operate on the one side.

In all sixteen x ray treatments were given, and then all but one of the glands had disappeared. The one remaining gland was hard, flat, movable, and about the diameter of a pea. The skin over and around the region where the glands had been, was somewhat tanned due to the x ray exposures, but no dermatitis had been present during the whole course of treatment.

The question arises, could not this woman have been as successfully treated by x ray on the left side of the neck, upon which an operation had been performed, as on the right side?

The size of the gland or glands do not seem to influence the result of the x ray treatment, as shown by the following case:

CASE II.—L. R., female, age seventeen, a well built person with no history of tuberculosis in the family, and no pulmonary involvement, noticed a "lump" on the right side of the neck, which rapidly increased in size in a few months. On examination it was firm, movable, and measured four centimetres in the horizontal diameter and a little over six centimetres vertically. It projected about two centimetres out-

ward. No other glands were test in that region, and the other side of the neck seemed normal.

In all, nineteen x ray treatments were given, and then upon examination no swelling could be seen, but palpation revealed a hard, movable mass behind the angle of the jaw. In size it felt like a grape. The treatments were discontinued at this time, because the patient was obliged to leave the city. During the whole course of the x ray treatments the patient received no internal medication, and she was quite happy that no operation had been performed, on account of the resulting scar. It is to be regretted that no photograph was taken before and after treatment.

In conclusion, the value of x ray treatment of tuberculous glands of the neck may be summarized:

1. They should be treated by the x ray when no softening or caseation has taken place.
2. Softened or caseous glands should be referred to the surgeon, and ought not to have x ray treatment.
3. Postoperative x ray treatment is important if there is any doubt of remaining glands which might be infected.
4. For cosmetic reasons.
5. The size of the gland or glands does not influence the successful result of the treatment.

1626 DIAMOND STREET.

NOTES ON THE METABOLISM OF SPLEEN NUCLEOPROTEID.

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Introduction.—It is well known that the feeding of organs rich in nucleoproteid, such as pancreas, liver, spleen, causes a marked increase in the urinary elimination of the purin bodies (among which we include uric acid). Kossel (1) in 1882 suggested that the increase might be due to certain xanthin bases which he found to be the chief decomposition products of the nucleins present in large amounts in these organs. That this supposition is correct was shown by Horbaczewski and later by Spitzer (2), by the actual derivation of either purin bases or uric acid from the partially putrefied spleen (and also from its nuclein); the purin bases occurring in the absence of oxygen, the uric acid in its presence.

On adding five grammes of nuclein prepared from spleen pulp to the diet of a man, Horbaczewski found an increase of 0.28 gramme in the urinary uric acid. He explained this result by supposing that a leucocytosis is brought about, with accompanying increased destruction of leucocytes, and that the increased uric acid elimination is derived from the nuclein liberated by this destruction. That this is unfounded was proved by Weintraud (3) who showed that a thymus diet produced an increased uric acid elimination altogether too great to be commensurate with the small change in leucocytosis consequent on its feeding. He concluded therefore that the nuclein fed itself furnishes the urinary purin substances. Moreover, the excretion of purin substances is not increased by a diet rich in proteid primarily, but depends solely upon the quantity of nuclein contained therein. This has been shown by Sivén, Burian and Schur, and many other investigators.

Since, then, the nucleoproteids are the sole source of the urinary purins, either endogenous or exogenous, what is the portion of the nucleoproteid molecule which furnished the purin nitrogen? An answer can be obtained only by considering the constituents, or at least the decomposition products of nucleoproteid. These may be shown as follows (4):

Nucleoproteid		
Albumin	Nuclein?	
Albumin nucleic acid		
Carbohydrate	Phosphoric acid	Purin bases and pyrimidin bodies.

The characteristic portion of the molecule is seen to be the purin bases, which theoretically would seem to be the source of the urinary purin bases, and uric acid also, since both the purin bases and uric acid are closely related derivatives of purin itself. That this supposition is correct is shown with regard to spleen, and its purin, hypoxanthin, by Burian and Schur (5), who found that in the human being the percentage elimination of both hypoxanthin and spleen (with regard to its purin nitrogen) is the same. A corresponding relation has not been shown for the amidopurins.

The same experiments of Burian and Schur proved that a constant proportion—fifty per cent.—of hypoxanthin nitrogen reappears in the urine as uric acid. An analogous constant, twenty-five per cent., was found to hold in the case of adenin. An important fact is that the constant is unaffected by individual characteristics, but remains the same in all individuals of the same species. As to species, however, it may vary; thus, in the case of hypoxanthin nitrogen, man excretes one half as uric acid, the dog one twentieth.

The subcutaneous injection of uric acid is followed in the dog by an excretion of about the same proportion of nitrogen (five per cent.) as follows the feeding of an equivalent amount of hypoxanthin nitrogen. It may be derived from this that in whatever manner the purin reaches the circulation it is there, probably, converted into uric acid, of which a constant proportion will be eliminated as such in the urine. It follows that endogenous purins will suffer the same fate. In the case of man, subcutaneous injection of uric acid is shown to be followed by the same proportion nitrogen excretion—about fifty per cent.—as follows the ingestion of hypoxanthin. Again, the following experiment of Burian and Schur (5) may be quoted in this connection. On adding to the diet of a normal person 400 grammes of spleen (which, as previously determined by them, contains 0.16 per cent. purin nitrogen) the purin nitrogen of the urine,—including under this term both uric acid and purin bases,—was found to increase 0.3386 gramme. Since the purin nitrogen of the administered spleen amounted to 0.64 gramme, the excretion as purin bodies in the urine amounted to 52.9 per cent. of that ingested. Repeating the same experiment, but using 3.2 grammes hypoxanthin—equivalent to 1.317 grammes nitrogen—in place of spleen, an increase in purin nitrogen excretion of 0.609 gramme was found to occur—46.2 per cent. of the hypoxanthin nitrogen fed.

From these facts Burian and Schur deduce the existence of an "integral factor for purin excretion," that is, a factor which denotes the relation between the purin ingestion and purin excretion; thus in man it is two, in the dog twenty. Although, as shown, it differs with the species, yet it is constant for all members of a species; individual peculiarities do not affect it.

With regard to the ultimate fate of that portion of the purin which does not appear as such in the urine after feeding with purin bases, two explanations are possible; first, Haig's theory, that it is stored up in the tissues in some insoluble form (6); second, that it is broken down and excreted in other combinations. If the former were the true explanation, the injection of the hypoxanthin, which is readily soluble in body fluids, should be followed by a much greater excretion than the injection of a similar amount of uric acid. This, however, is not the case; one twentieth, in the dog, being excreted in each.

The second supposition therefore is the more generally accepted. The probable fate of the purin unexcreted as such is therefore destruction, and elimination in some other form. Artificially decomposed the most important nitrogenous products of uric acid or the purin bases are urea, glycocholl, and allantoin. With regard to urea, I have been unable to find references in the literature to the part it plays in purin excretion. Allantoin was long supposed to be the chief intermediary product of uric acid destruction in the body. Experiments of Minkowski, and later Salkowski, seemed especially to favor this view. In so far, however, as it applies to endogenous purins, some recent evidence has been brought forward by Wiener to show that doubt must be thrown upon this conclusion. The same investigator has shown that in the herbivora, glycocholl is undoubtedly a decomposition product of purins. It is very probable that the same is true of man.

Methods. The nucleoproteid was obtained as follows: The decapsulated and minced spleen was boiled, and the nucleoproteid precipitated by the addition of acetic acid to the filtrate. The resultant precipitate was suspended in water and washed repeatedly. After dissolving with sodium hydroxide and reprecipitating with acetic acid, the nucleoproteid was again washed, and finally freed of water by boiling in alcohol and drying in the air. The nitrogen content of the nucleoproteid used in the first course of feeding was 14.99 per cent. of that used in the second, 14.52 per cent. The phosphorus content was 1.621 per cent.

The total nitrogen determinations were made by the Kjeldahl method. The urea and ammonia were determined together on account of the small amount of urine, Folin's method being used. Uric acid and purins were estimated by the method of Salkowski.

The dog used in the experiment weighed 5.8 kilogrammes. The diet was purin free, consisting of two thirds cracker meal and one third lard, intimately mixed. The nitrogen content was 1.048 per cent; 75 grammes were fed daily from March 24th until April 4th, and from April 20th until May 3rd. During neither of these experiments did the dog defæcate. The urine was drawn daily by catheter, and showed no trace of albumin at any time.

	MAR. 28.	MAR. 29.	MAR. 30.	MAR. 31.	APR. 1.	APR. 2.	APR. 3.	APR. 4.
Total N	1.3417	1.3430	1.2640	1.8280	1.8757	1.3880	1.1697	1.2116
Urea and NH ₃ N	1.1360	1.1071	1.0641	1.4752	1.5271	1.1754	0.9840	1.0164
Uric acid N	.0041	.0053	.0047	.0067	.0057	.0043	.0041	.0042
Purin N	.00056	.00071	.00071	.00085	.00085	.00073	.00066	.00061
Remaining N	.2007	.2299	1.45	.3452	.3420	.2076	.1809	.1904

TABLE I.

Showing grammes of nitrogen excreted in various forms.

Experiment.—The results of the experiment are shown in the accompanying tables and diagrams as follows: Table I gives the results of the urine analysis during the first course of feeding (March 28th to April 4th) under the headings of the various urinary products determined. Under the caption "remaining nitrogen," is placed that portion of the total nitrogen not determined directly, that portion which is present in forms other than urea and ammonia, uric acid, and purin bases. This fraction will be referred to later.

From March 24th until April 4th the dog was kept on a purin free diet, as described; on March 30th and 31st, were fed in addition 18 grammes of spleen nucleoproteid, (containing 1.349 grammes nitrogen) 9 grammes each day. The urines of the two successive days respectively show the result of the feeding, the time of catheterization being in the morning. (12 m.) and the time of feeding in the afternoon (3 p. m.).

	APR. 25.	APR. 26.	APR. 27.	APR. 28.	APR. 29.	APR. 30.	MAY 1.	MAY 2.	MAY 3.
Total N	1.2319	1.3101	1.3057	1.4208	3.0308	3.3334	1.6662	1.5219	1.4290
Urea and NH ₃ N	1.0337	1.0912	1.1002	1.1844	2.4528	2.6717	1.3737	1.2955	1.2028
Uric acid N	.0028	.0023	.0026	.0022	.0068	.0073	.0026	.0020	.0022
Purin N	.00038	.00047	.00043	.00047	.00066	.00071	.00056	.00047	.00047
Remaining N	.1951	.2162	.2025	.2338	.5705	.6537	.2804	.2239	.2235

TABLE II

Showing grammes of nitrogen excreted in various forms.

Table II is arranged in corresponding fashion, the dog being kept on the same purin free diet, 75 grammes per day, as in the first experiment. On April 28th and 29th, were fed in addition 40 grammes of spleen nucleoproteid (containing 2.904 grammes nitrogen), 20 grammes each day. The elimination of these feedings is shown respectively under the dates April 29th and 30th, owing to the time of catheterization.

Table III shows the percentage elimination of the various urinary constituents (taking the total nitrogen as the standard) during the first experi-

	Mar. 5	Mar. 9	Mar. 20	Mar. 21	Apr. 1	Apr. 2	Apr. 3	Apr. 4
Urea and NH ₃ N	84.68	82.44	84.1	82.3	81.41	84.68	84.22	83.89
Uric acid	0.31	0.39	0.5	0.35	0.31	0.3	0.33	0.35
Purin N	0.049	0.05	0.04	0.046	0.046	0.04	0.05	0.05
Remaining N	14.96	17.12	15.38	18.83	18.23	14.96	15.46	15.29

TABLE III

Showing percentages of total nitrogen excreted in various forms.

ment; Table IV serves the same purpose with regard to the second.

On examining Tables III and IV, an interesting change of percentage excretion is found to occur in the urea and ammonia nitrogen, and in the remaining nitrogen, on the feeding of nucleoproteid. Thus in Table III, the average of the three days preceding and the three days immediately following nucleoproteid excretion is 84 per cent. urea and ammonia nitrogen. The average of the nucleoproteid days is 81.06 per cent., a diminution of 2.94 per cent. In the same table, the corresponding remaining nitrogen proportions are (average) 15.52 per cent. for the purin free days, and 18.56 per cent. for the nucleoproteid days. Thus the proportion of remaining nitrogen is found to increase 3.04 per cent. during nucleoproteid feeding, while the urea and ammonia decreases 2.94 per cent.

stated and a reaction at a glance—the remaining nitrogen percentage rising on the nucleoproteid days (marked with star) the urea and ammonia percentage coincidentally falling. The fact that in either diagram the one curve is almost the exact reverse of the other, rising and falling according to the fall or rise of the latter, is due to the method of derivation of the remaining nitrogen and the slight change in purin percentage.

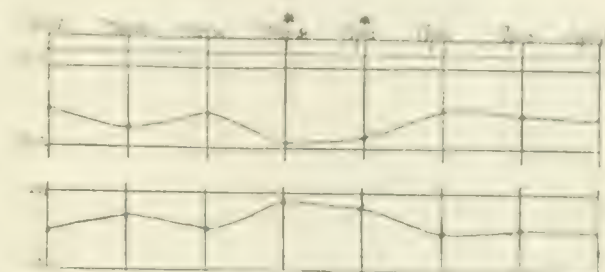


CHART I.—Upper curve represents urea and ammonia percentage excretion; lower curve represents remaining nitrogen percentage excretion.

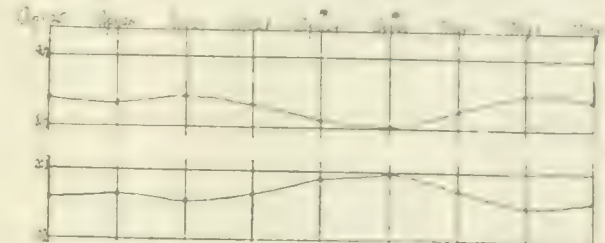


CHART II.—Upper curve represents urea and ammonia percentage excretion; lower curve represents remaining nitrogen percentage excretion.

	Apr. 25	Apr. 26	Apr. 27	Apr. 28	Apr. 29	Apr. 30	May 1	May 2	May 3
Urea and NH ₃ N	83.91	83.29	84.26	83.36	80.93	80.15	82.45	85.12	84.17
Uric acid N	0.32	0.17	0.20	0.15	0.22	0.22	0.16	0.13	0.16
Purin N	0.031	0.036	0.033	0.033	0.022	0.021	0.034	0.031	0.033
Remaining N	15.84	16.50	15.51	16.45	18.82	19.61	17.37	14.71	15.64

TABLE IV

Showing percentages of total nitrogen excreted in various forms.

In Table IV, approximately the same condition is found to exist; a diminution of 3.25 per cent. in the urea and ammonia excretion of the nucleoproteid days as compared with the average urea and ammonia excretion of the purin free days, while the remaining nitrogen proportion shows a corresponding increase of 3.22 per cent. It is noticed that the increase in remaining nitrogen percentage coincides, practically, with the decrease in urea and ammonia percentage—a fact due to the minute change, if any, in the uric acid and purin bases percentage excretion, and to the method of difference used in estimating the remaining nitrogen. This interdependent change is shown graphically in the two diagrams herewith presented, A and B. In both the percentage of excretion is marked off vertically, while the horizontal is lined to correspond with the days of the experiment. The upper curve in each case represents the urea and ammonia; the lower, the remaining nitrogen. The relations previously

In discussing these findings, we must first take into consideration the forms in which the remaining nitrogen may be excreted. Since urea and ammonia, uric acid, and purin bases were determined individually, none of these may be considered as forming part of the percentage in question. The only important nitrogenous bodies of the urine remaining are glycoch (as hippuric acid) and allantoin. These, therefore, among other less important substances are contained in the remaining nitrogen.

As to glycoch, nothing definite is known with regard to its formation from purin bodies in carnivora, though in herbivora Wiener (7) has shown that it is one of the products of purin metabolism. Allantoin, on the other hand, has been long recognized as an important method of elimination of exogenous purin bodies in the dog. Minkowski (8) after feeding a dog with thymus found allantoin in large amounts. Salkowski (9) had previously shown that uric acid fed to dogs is largely eliminated as allantoin, and quite recently (10) reported similar observations after pancreas feeding. These findings have been confirmed by Mendel and his pupils. Allantoin therefore may be considered an important elimination product of exogenous purins in the dog.

Taking these facts into consideration, the increased percentage elimination of the remaining nitrogen may be very properly attributed to an increased excretion of allantoin, due to the ingestion and katabolism of nucleoproteid. At all events, we may say positively, from a study of the comparative percentages in these experiments, that nucleoproteid nitrogen is not excreted as urea to the same extent

as nonpurin nitrogen, but that it presents an increased elimination in forms other than urea, ammonia, and purin bodies.

With regard to the excretion of the nucleoproteid as uric acid and purin bases, the experiments unfortunately show nothing positive. The amount fed furnished so small an amount of uric acid, and especially purin bases, to the urine that trustworthy conclusions are not possible.

In examining the figures for total nitrogen elimination, it was noticed that the percentage nucleoproteid nitrogen excreted in the second experiment was much greater than that in the first experiment, and the question arose as to whether any relation can be shown to exist between the amounts of nucleoproteid nitrogen excreted in toto during the two courses of feeding.

The following method of calculation was used: The total nitrogen excretions of the days preceding the nucleoproteid feeding were averaged. This gave the average nitrogen on purin free diet, and amounted to 1.3162 grammes in the first experiment (Table I) and 1.3171 grammes in the second (Table II). This figure was then subtracted from the total nitrogen figure of each day following the ingestion of the nucleoproteid for as many days as an increase in the total nitrogen elimination over this average could be noted—thus March 31 to April 2 in the first experiment, April 29 to May 3 in the second. The sum of the nucleoproteid nitrogen excreted on successive days being thus obtained, gave the total nucleoproteid nitrogen excreted, and the percentage elimination could then easily be figured.

In the first experiment (Table I) 2.698 grammes of nitrogen were administered in the 18 grammes of nucleoproteid, and of this 1.1431 grammes were excreted, an excretion of 42.37 per cent. In the second, (Table II) 40 grammes of nucleoproteid were fed, containing 5.808 grammes of nitrogen. Of this 4.3958 grammes nitrogen were excreted: 75.68 per cent.

No relation, however, can be shown to exist between these percentages, for on placing them in the ratio $a : a' :: b : b'$ where a and a' equal respectively the percentage nucleoproteid nitrogen eliminated in experiments 1 and 2, and b and b' the corresponding total nucleoproteid nitrogen fed, an error of approximately 20 per cent. is found.

Considering now the percentage of nucleoproteid nitrogen retained (not excreted in the urine) instead of that eliminated, a different state of affairs exists. It would be moreover logical to suppose that a relation, if any, exists between those portions of ingested nucleoproteid nitrogen retained rather than between those excreted, because of the fact that the primary concern of the organism is anabolism rather than katabolism—what it can make use of, rather than what it must reject.

The percentage retained in the first experiment is 57.63; in the second experiment, 24.32. Placing these quantities in the following ratio $a : a' :: b' : b$, where a and a' represent the percentage retained of the administered nucleoproteid nitrogen in experiments 1 and 2 respectively, and b and b' the corresponding amounts of nucleoproteid nitrogen fed, an apparent error of 9.2 per cent. is found, which reduces to an error of 4.6 per cent. \pm on either side

of the equation. That is, subject to an error of 4.6 per cent., the percentage of nucleoproteid nitrogen excreted is in inverse ratio to the amounts of nucleoproteid fed.

That this error is probably much smaller, so small in fact, that it affects not at all the validity of the conclusion, may be shown as follows: In the total nitrogen excretion of the purin free days, from which was derived the average nitrogen figure used in calculating the amount of nucleoproteid nitrogen eliminated, the amount varies from 1.2319 (April 25th) to 1.4208 (April 28) in the second experiment, and from 1.2640 (March 30th) to 1.3430 (March 29th) in the first experiment. In the method of determination previously described, May 3 was considered as one of the days on which nucleoproteid nitrogen was excreted. This date shows total nitrogen 1.4290. Naturally, to make any estimation, an average purin free nitrogen elimination was a necessary figure; but since, as shown, the figures from which this average was drawn fluctuated between 1.2319 and 1.4208 in the very experiment of which May 3rd forms a part, the excretion of the latter date may reasonably be considered as a normal purin free day, showing no nucleoproteid excretion. (In passing, it may be noted also that the validity of the average nitrogen figure is in no way affected by the fluctuations of its components, since they are not excessive, and again, the average purin free nitrogen figures for the two experiments agree most closely—1.3162 in experiment 1, 1.3171 in experiment 2.) If, then, we consider May 3 as a purin free day instead of a day of nucleoproteid excretion, the error mentioned reduces to 2 per cent., or 1 per cent. \pm on either side of the equation.

It must be noted that no defæcation occurred during either experiment, so that the complete absorption of the nucleoproteid could not be positively determined. But it is most improbable that any remained in the intestine, for comparatively small quantities were given, and spleen nucleoproteid is easily absorbed; also hypoxanthin, its purin, is readily soluble in body fluids. The lack of defæcation on the purin free diet shows that the intestine possessed good absorptive power. Besides, any residue of the nucleoproteid in the intestine would have stimulated the latter to active peristalsis, and thus caused a defæcation.

We are therefore justified in assuming that the proposition previously outlined—the percentage of nitrogen retained is in inverse ratio to the amount fed, in the case of spleen nucleoproteid—is at least extremely probable.

The writer is indebted to Dr. John A. Mandel for suggestion and valuable assistance.

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PARDONS FOR DISEASED CONVICTS

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Among the recognized pleas for executive clemency in favor of convicted criminals is that of alleged incurable disease, notably pulmonary tuberculosis in its later stages. An authenticated statement that a prisoner is in the last stages of consumption is often considered sufficient grounds for a pardon. Very often this one feature of the case alone receives consideration, no notice being taken of the applicant's personal record, characteristics, and probable habits of life.

It is an open question whether such pardons are generally justified. Executive action is usually based upon the recommendation of medical men connected with penal institutions, and it is too often the case that such physicians will urge clemency without due consideration of all aspects of the matter. It is not pleasant to observe a man dying by inches behind prison bars, and often there is the incentive to be rid of undesirable cases and to reduce the mortality of an institution.

But the welfare of the general public must be considered as well as the desires of the convict and the convenience of the physician, and herein lies the argument against the promiscuous and ill considered granting of such pardons. In pardoning a patient with advanced phthisis it must be remembered that there is being returned to the community a person capable of infecting others, and that much less harm might result by keeping him in confinement under definite control and medical supervision.

The whole question should resolve itself into the careful consideration of individual instances. The general rule should be not to recommend the pardon of consumptives, and to make exception to this rule in selected cases. Habitual criminals should in no case be excepted from the rule. These degenerates are natural foes to society, and no matter how ill they may be they will become implicated in crimes. Their inbred disregard for the rights of others naturally includes an indifference to sanitary precautions, and their liberation plants within a community both a menace to its rights and a focus of infection.

The same line of reasoning applies in the case of an extremely ignorant prisoner, and to such as have no homes or whose social connections are in the submerged masses. There can be no excuse for the liberation of a consumptive prisoner whose intellect is so clouded that he cannot understand the simple means necessary to prevent the spread of contagion, or who is indifferent to such precautions. Neither is it wise to release a man mortally ill whose family connections are such that he will receive no care, or one who has no home and must become an outcast and a dependent on charity.

A majority of convicts belong to one or the other of these classifications, and hence it may be repeated that as a general rule a pardon should be withheld. There are, however, quite a number of men in prisons who are not really criminals in the strict sense of the term. They are men who are no better or no worse than the average man on the outside, but

about of the way. Some men require no special treatment and others require only a little. Often they are intelligent and have good homes and family connections. Such persons if found suffering from pulmonary tuberculosis may with propriety be recommended for executive clemency. It may be assumed that they can appreciate the rights of others, can understand instructions in sanitary matters, and that they can depend upon the aid of relatives and friends in their misfortune.

A pardon is rarely granted a sick man except in the very last stage of his disease, when it is assumed that recovery is impossible. This is a mistake. No man should be pardoned unless he has within him the elements that go to make a good citizen, and in such case he should not be held in confinement until he no longer has a chance to live. If a consumptive is entitled to clemency at all he is entitled to it at any stage of his disease, and the earlier the stage of the disease the better the argument for his liberation.

Incipient cases are the most worthy, because in confinement they must certainly die, but if given liberty and proper treatment the disease may be arrested, and the individual returned to health and good citizenship.

A case which illustrates some of the points herein advanced is that of a convict recently pardoned by the governor of the State of Washington on the grounds that he was an incurable consumptive, so certified by the prison physician. The man was released merely that he might spend his few remaining days with his own people, but he unexpectedly and ungratefully proceeded to recover his health, which fact coming to the notice of the governor, that official felt aggrieved and announced that the pardon would be revoked. The ex-prisoner, however, demurred to this, claiming that his pardon was unconditional and that his restoration to health was a merciful act of God, and could not be construed as an evidence of bad faith on his part. The matter is now in the courts, where it must be decided whether the prisoner has succeeded in cheating both the grim reaper and the governor, or whether he must sadly sing, "Take back the lung that thou gavest," and return to his prison cell.

If the rule were followed that none but the most worthy cases should be pardoned there could ensue no such embarrassing situations as that mentioned. If freedom be granted it should be granted ungrudgingly and with a hope that life as well as liberty may be given with the act of clemency.

FORMALDEHYDE IN THE DISINFECTION OF ROOMS.

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Dr. McClintic's work upon *The Limitations of Formaldehyde Gas as a Disinfectant, with Special Reference to Car Sanitation*,¹ was conducted in the Hygienic Laboratory of the United States Public Health and Marine Hospital Service. The work was carefully supervised and conscientiously performed.

The intimation in the *New York Medical Journal* of December 8, 1906, page 1140, that the room in which these experiments were done was not efficiently sealed is not in accordance with the facts. The room is zinc lined, and tighter than an ordinary room in a well built structure. In fact, the room in which the experiments were carried on was built especially tight for the purpose of testing disinfecting gases under precise conditions.

That sufficient formaldehyde gas was present in the room to kill the bacteria exposed is shown by the chemical determinations. Thus we have direct proof that considerable volumes of formaldehyde gas are not sufficient to destroy bacteria unless the proper conditions of temperature and moisture are present.

It is not amiss to point out that much of the work upon the germicidal action of formaldehyde gas is contradictory. We know that the usual source of error is that the cultures exposed are sometimes moist and sometimes dry. Moist cultures may be killed with dry formaldehyde gas. But the dry gas does not kill dry cultures. In Dr. McClintic's experiments the cultures were always carefully and thoroughly dried before exposure.

In a general way it may be said that the most serious limitations to the use of formaldehyde gas as a disinfectant are temperature and moisture. The gas cannot be depended on in cold or dry weather. When the temperature is below 60° F., and the relative humidity of the atmosphere is below 65 per cent., the gas frequently fails to kill nonspore bearing organisms.

Dr. McClintic spent a year upon this one problem. He reviewed the entire subject of formaldehyde disinfection and obtained a large amount of experimental data, which fully justified his conclusions.

Therapeutical Notes.

To Purify Drinking Water.—M. Lambert proposes to add 6 centigrammes of potassium permanganate to each litre. This should be left ten minutes, after which 10 centigrammes of manganese sulphate should be added. This precipitates all germs and impurities to the bottom of the vessel. Carefully decanted this, says the Paris correspondent of the *Chemist and Druggist*, will give "water not containing a single microbe, limpid, colorless, of pleasant taste, and even richer in oxygen than ordinary water."

Dangers of Administration by Hypodermic Injection of Insoluble Preparations of Mercury.—At a recent meeting of the Société médicale des hôpitaux (*La Clinique*, November 23, 1906), Letulle and Chauffard reported two cases of gangrenous stomatitis due to the use of a preparation of metallic mercury, one of which terminated fatally. The preparation employed was gray oil, which was given hypodermically. Gaucher, in discussing this communication, said that six patients suffering from gangrenous stomatitis had come under his observation, some of whom had also necrosis of the maxilla. He condemned the

routine use of hypodermic injections, and preferred the oral administration as the rule. In exceptional cases, where quick action was necessary, he gave the remedy hypodermically, but preferred the soluble salts to the insoluble preparations. Renaut said that gray oil should only be used exceptionally, and is contraindicated in old people, Bright's disease, and arteriosclerosis.

The Treatment of Constipation in Neurasthenia.—Gilbert Ballet (*La Quinzaine thérapeutique*, October 10, 1906) discriminates between the different cathartic agents usually employed for neurasthenic patients, and states that the saline laxatives (sodium sulphate, magnesium sulphate, magnesium citrate, purgative lemonades, and mineral waters) are not suited to these cases. Although they act promptly they have the inconvenience of producing a secondary constipating effect. At the most, they should be used only exceptionally as an "accidental purgative." Belladonna, alone or associated with podophyllin, is very useful in the constipation of neurasthenics. Castor oil is too irritating to the stomach, even when administered in gelatin capsules. The compound laxative powders, especially compound licorice powder, are often very useful. As in many of these cases, there is a condition of spasm of the intestine, aloin and the majority of the drastic cathartics should, as the rule, be withheld on account of their being too irritating for the intestine; but enonymine in five centigramme pills, associated with extract of hyascyamus one centigramme, or powdered rhubarb in doses of fifty centigrammes to one gramme, are valuable resources. As regard the use of tobacco, Ballet considers the moderate use, *i. e.*, one cigar or a few cigarettes, after meals, as possessing more advantages than inconveniences. In neurasthenics with a good digestion, the dietetic treatment (with whole wheat bread, or bran bread, green vegetables, baked or uncooked fruits, coffee and hot milk, honey, etc.) may be successful; but if the digestion is defective this treatment cannot be carried out. Hygienic treatment should be systematically arranged. There should be a fixed time for attempting to move the bowels, suppositories or injections which irritate the bowel should not be used for fear of exciting spasm. Gymnastics, particularly flexion of the body forwards and sideways, should be practiced morning and evening.

Trigeminal Neuralgia Improved by X Rays.—Béclère and Haret (*Journal de physiothérapie*, June 15th) showed a case of this kind to the Société médicale des hôpitaux of Paris. The disease was of the type called by Trousseau epileptiform. The patient had suffered many things at the hands of surgeons, until, in the words of the authors, he was more scarred than a German student. First, the teeth of the left upper jaw were extracted, without relief. Next, the infraorbital branch of the left trifacial was resected; still no relief. Then the Gasserian ganglion was ablated; the pain disappeared for seven months. At the end of that time it began gradually to return, until it occurred, as before, every ten minutes in paroxysms lasting twelve or fifteen seconds. The

patient was contemplating suicide if nothing could be done, and Dr. Delbet, in the final resort, excised the left superior cervical ganglion of the sympathetic. The pain gradually disappeared and remained in abeyance for two or three months, only to reappear with undiminished violence, though apparently, from the report, with less frequency. In March, 1905, the patient began with x rays. These were directed on to the left upper jaw at the place whence the first and second molars had been extracted. Weekly sittings were given, dosage 4 Holzknecht units, and quality 7 to 8 Benoist. At the third sitting the patient declared that the pain was easier. After the fourth the pain disappeared completely, and has been gone for a whole year. Gramegna reports a somewhat similar case in the *Riforma medica*, No. 49. Here also there had been operation without success, a partial resection of the Gasserian ganglion. After two irradiations the patient felt the pain easier. Six treatments were given, with a total dosage of 26 Holzknecht units. There has been no return of pain during seven months, so that it seems as if the patient were cured.

These cases are certainly remarkable, and one can scarcely resist the idea that something, if not much, was due to suggestion; but surely no amount of suggestion—that is, autosuggestion as contrasted with hypnotic—could overcome and dismiss a facial neuralgia in full blast. None of the authors attempt to explain the success, but the results are worthy of remembrance for future use.—Through the *Archives of the Röntgen Ray*.

The Automobile from the Medical Standpoint.

—At the opening session of the Société de thérapeutique, Legendre, who presided at the meeting, spoke of automobilism from the point of view both of hygiene and of the treatment of disease (*Le Progrès médical*, November 17, 1906). The points chiefly to be considered are the speed; the jolting (trepidation); the volume of air striking the body; the loss of bodily heat; the dust; the constrained position, or immobility, unduly prolonged; and the psychic state induced in the person driving the apparatus. The portions of the body most affected are the skin; the respiratory organs; the circulation of the blood and hæmaturia; the digestive apparatus; the locomotor apparatus; the senses, and the nervous system. General nutrition is therefore necessarily modified. Dermatitis and pruritus, and increase of capillary circulation are noted. The latter, which is favorable to asthmatics and especially when it is associated with emphysema, should be positively forbidden to the tuberculous. Chlorosis is benefited by moderate riding in a comfortable carriage. The class of patients with decided cardiopathy, of which compensation is incomplete, and also cases of disease of the arteries, would do better to abstain. As regards the stomach, digestion of a hearty meal is delayed by riding in the automobile; but, on the contrary, dyspeptic patients of a nervous type are benefited by using it in moderation. Lithæmic patients, on the other hand, should abstain from it; also women suffering with pelvic diseases. Rheu-

matic subjects may ride if they are careful to avoid exposure to cold. Neurasthenics generally enjoy this sport, but they would do well not to drive, on account of the excitement and of the possible danger to the public and to themselves. From the standpoint of public hygiene the principal disadvantages to be considered are the dust, the odor, and the risk to pedestrians.

Treatment of Hæmophilia by Injections of Serum.—Weil (*La Tribune médicale*, November 10, 1906) reports successful results in the treatment of hæmophilia by injections of serum, either human, or obtained from the horse or ox. He distinguishes two forms of hæmophilia, the spontaneous and the hereditary, or family type. The former is less marked in its manifestations, either in frequency or gravity, than is the latter. It appears in these acquired cases that a trauma of some importance is needed to produce the obstinate hæmorrhage. The recurrence of the bleedings may be separated for several years, and the general health may be excellent. In the hereditary type, on the contrary, the bleedings commenced in infancy, and every lesion is followed by prolonged hæmorrhage. Epistaxis and visceral bleedings are of common occurrence, often without apparent cause. Effusions of blood into the joints may follow violent exercises, or fatigue, and lead to permanent lameness. The general health is affected. In the spontaneous or acquired form a study of the blood appears to show that it has undergone no pathological modification, except the absence or an alteration of the *kinase*. In the inherited form, the cause of the incoagulability of the blood is much more complex. There is some evidence that it is due in part to the presence of some substance which delays coagulation. This may possibly be of hepatic origin. It was found, however, that by the injection of fresh serum the tendency to bleeding was greatly reduced in this class of patients, and entirely overcome in the cases of acquired hæmophilia. The injections of fresh serum were given in doses usually of from ten to twenty cubic centimetres. Human serum or serum from the horse was found to be better borne than the bovine serum. After administering the latter, almost immediately as a rule there was a short but violent febrile attack, with chilly sensations, yawning, vomiting, and pain in the back. A single injection in a case of spontaneous or acquired hæmophilia was found to be sufficient to restore the blood for the time to its integrity. The immunity from bleeding continues for two weeks to a month. The injections may be repeated if thought necessary at the end of this period. The serum injection does not act upon the cause of the condition, but is merely a symptomatic treatment. The method, however, is very useful as a prophylactic in a patient, known to be a bleeder upon whom a surgical operation may be required, or even for the extraction of teeth. It is also curative in cases of hæmaturia and other conditions of prolonged bleeding. As pointed out by Widal and Courmont, the serum from the horse may be injected into a vein without any bad result, and this is also true of human serum.

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CERTAIN LICHENS AND THEIR USE AS
FOOD.

The so called "Iceland moss," *Cetraria islandica*, which, as is well known, is not a moss at all, but a lichen, has always been an interesting plant. Growing in great profusion as it does in northern countries, where the summers are so short that the ordinary bread making grains rarely have the opportunity to ripen, it seems that it might be more widely made use of as a food stuff. But it has had a limited application, and then usually more as a last stand against starvation in arctic climes. Certainly the various *Cetrariae* have a very distinct food value, being particularly rich in soluble carbohydrates, if we can accept the results of a recent research by E. Poulsson in the Pharmacological Institute of Christiania (Festkrift tillegnad Olof Hammarsten, *Uppsala Läkerforenings Förhandlingar*, xi, 1906), which carbohydrates, consisting largely of substances such as lichenin, analogous to dextrin, are turned to account to at least fifty per cent. of their amount in digestive experiments carried on by the author. The bitter taste of *Cetraria islandica* is a disadvantage. This is readily removed, however, by soaking for twenty-four hours in a solution of wood ash or potassium carbonate. If it is used without the addition of any other flour, it makes a bread or cake with great difficulty. But the use of white of egg or the addition of comparatively small quantities of wheat flour renders it possible to mould a good bread, and when cooked without raising, it makes a not unpalatable food.

Care must be exercised in the choice of *Cetrariae*. Some are rich in a peculiar acrid, bitter substance termed usnic acid, having first been isolated from species of a related genus, *Usnea*, which bitter principle has been known to cause paralytic symptoms (Ischizaka, *Archives internationales de pharmacodynamie*, 1905, No. 14). *Cetraria nivalis*, a Swedish species, contains small quantities of this substance. Our Alaskan species of *Cetraria* are numerous, but up to the present time we have had no chemical work done upon them; indeed, they are in much need of exact botanical description.

Used in the manner described by Poulsson, bread made from *Cetraria islandica* has proved wholesome, and, moreover, when used in diabetes, it has seemed to allay the carbohydrate hunger of his patients and has not caused an increase in the reducible sugars of the urine. Further investigations are highly desirable in view of the large use of *Cetraria* among native Alaskan tribes and because of the comparative abundance of this genus in our Alaskan possessions.

SYPHILIS AND CANCER OF THE TONGUE.

In a discussion upon cancer before the Académie de médecine de Paris, very recently, Poirier flatly declared his personal conviction that cancer of the tongue was not a disease which might appear in any one. Two conditions were almost indispensable for its appearance—the patient must be a smoker and syphilitic. Those who presented these conditions, especially the latter, were much more liable than other persons to become affected in this way. In fact, we might give it the special designation of the cancer of syphilitic smokers. Commenting at some length upon this thesis, Fournier (*Bulletin médical*, November 23rd) gave it his entire approval. He reviewed the course of syphilitic lesions of the mouth and the development of leucoplakia, which might be regarded as intermediate between syphilis and epithelioma. He also pointed out the effects of tobacco in inveterate and persistent smokers, but insisted that tobacco alone was rarely if ever followed by cancer of the tongue.

A case in point, reported by Barthélemy, cited in which a man smoked excessively for thirty years without presenting the slightest leucoplakia. At the end of this period, however, he contracted syphilis, and continued his abuse of tobacco as before. Two years later he presented himself with an intense form of leucoplakia of the tongue. The rule, as pointed out by Fournier, is that cancer does not develop directly in a tongue that was previously healthy, even in a syphilitic; but it requires a local lesion, and in the great majority of

cases leucoplakia is the forerunner of epithelioma of this organ.

We should therefore present mouth lesions by early and effective treatment of syphilis, and warn syphilitic patients against the excessive use of tobacco, whether leucoplakia is actually present or not.

THE DEPARTMENT OF PUBLIC HEALTH AND CHARITIES OF PHILADELPHIA.

The annual report of the Department of Public Health and Charities of Philadelphia for the year ending December 31, 1905, has just been received. The director of the department, Dr. W. M. L. Coplin, calls attention to the fact that the death rate was 17.25 per mille, the lowest in the history of the city. Diseases of the lungs caused about twenty-two per cent. of the deaths (5,420), while diphtheria (including membranous croup), scarlet fever, and typhoid fever, together occasioned only five per cent. of the deaths (1,110). The director calls attention to the high typhoid fever incidence and the necessity for the rapid completion of the filter plant before that incidence can be lowered. He also refers to the necessity for an improvement in the sanitary condition of that part of the twenty-first ward, which borders the east bank of the Schuylkill River. Improvement and extension of the sewage system are imperatively needed. To this end a larger appropriation for the abatement of nuisances is required.

The conditions at Blockley receive extended consideration at the director's hands. Blockley, which includes the Philadelphia Almshouse, the Philadelphia General Hospital, and the Department for the Insane, has a total population of 5,000 persons. This institution has grown to such an extent that measures of relief are urgently needed. A number of recommendations are made, among which may be mentioned the removal of the Almshouse and the Department for the Insane to a more suitable neighborhood and to more commodious quarters. During the present year a plot of ground has been purchased for the Department for the Insane, and building operations, it is understood, will be begun soon. In the Philadelphia General Hospital alone the average daily number of patients is 1,250. These patients are cared for at an average cost of forty-nine cents daily for each patient. The Cook County Hospital in Chicago, with 881 patients daily, spends \$1.02 a day for each patient; while Bellevue Hospital in New York, with 817 patients, spends \$1.41. It is evident that Philadelphia needs an increased appropriation for the maintenance of this institution.

The director makes a plea for the establish-

ment of a Department of Public Health and Charities in connection with his department, and a report by Miss Ethel Thomas, acting secretary, is submitted with the reports of the other division chiefs. We note in our news columns at periodical intervals the work done by the various divisions of this great department. It would not be amiss, however, at this time to state that in 1905 the birth rate was 23.05, while the marriage rate was 14.51 per mille of population. The report of the chief of the Bureau of Health and that of the chief resident physician of the Municipal Hospital contain much of interest to any one engaged in administering the sanitary affairs of a large city.

A TOE FOR A THUMB.

At a recent meeting of the Berlin Medical Society (*Presse médicale*, November 21st) Dr. F. Krause showed a man for whom he had replaced a lost thumb by substituting a great toe for it. The right thumb had been crushed by a machine while the man was a child, and only a stump about a third of an inch long was left. At the first operation Krause divided the soft parts on the dorsal aspect of the right great toe and resected the head of the corresponding metatarsal bone, to give room for applying the stump of the thumb to the base of the toe. The thumb was refreshed in like manner on its dorsal aspect, but care was taken not to disturb the cicatricial tissue at the end of the stump, for the aim was to establish a false joint. Tendons having been sutured to tendons and skin to skin, the newly apposed parts were immobilized by means of plaster of paris, and this retentive apparatus was kept in place for seventeen days. Then the plaster was removed and the plantar and palmar tissues were divided and properly sutured, the toe having been disarticulated at its base. Satisfactory union took place, and the cosmetic result was all that could be desired, but, although the false joint had been established, there was hardly any power of voluntary movement of the transplanted digit. This was attributed to the man's unwillingness to devote sufficient time to passive motion and massage, and it was still hoped that such treatment might decidedly improve the man's control of his acquired thumb.

Seventeen days seems a long time to keep a man bound hand to foot in a procedure involving no osteoplasty, and the many years that intervened between the loss of the natural thumb and this attempt to furnish the patient with a useful substitute may, we imagine, have resulted in such a degree of atrophy of the muscles proper to the thumb as to render the restoration of the thumb

movements somewhat problematical. It seems that this is not the first case of operative substitution of a toe for a thumb; Krause tells us that a similar procedure was once adopted by Nicoladoni, only it was the second toe that was made use of by that surgeon, and it turned out to be too small for the purpose.

THE PTYALISM OF PREGNANCY.

One of the afflictions with which pregnant women occasionally suffer is ptyalism. According to Dr. P. Rudaux, who deals briefly with the subject in *La Clinique* for November 9th, it is one of the many untoward results of that state of poisoning which is the outcome of defective elimination, especially by the kidneys and by the liver. The renal secretion is apt to be very deficient in amount, and Pinard has recorded a case in which the daily quantity of urine voided was only a little over three ounces, although the woman was discharging at least three pints of saliva in the twenty-four hours.

Ptyalism is one of the annoyances that come on early in the course of gestation. In one instance it made its appearance before the woman had noted that menstruation was suspended. It usually lasts until the fifth or sixth month, and has been known to continue to the very end of the pregnancy. The submaxillary and sublingual salivary glands are apt to be enlarged, and the saliva has such a repulsive taste that the woman is thoroughly miserable, being deprived of appetite and hardly able to sleep. She consequently loses flesh and strength to a notable degree. With all this the breath is foul, there is nausea, great thirst is experienced, and sometimes there is frequent vomiting.

This trouble seems to be observed most frequently in women of neuropathic heredity or antecedents, and it occasionally occurs in several successive pregnancies. The rational treatment consists in the use of eliminants, especially cathartics and diuretics, and the avoidance of such food as is prone to give rise to toxic products. It has been said that in this affection the saliva does not contain ptyalin.

THE ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES.

We learn that the association's excellent journal is hereafter to be called *The Military Surgeon*, its former name being retained as a subsidiary title. The new name is sufficiently distinctive and far more easily remembered. The editor of the

journal, Major James Evelyn Pilcher, deserves great credit for having developed an unexcelled repository of the literature of military medicine.

ARTIFICIAL PNEUMOTHORAX IN CONSUMPTION.

It has seemed to us that too little use had been made of the method of treating pulmonary tuberculous disease advocated a few years ago by Dr. John B. Murphy, of Chicago—that of compressing the diseased lung by injecting nitrogen into the pleural sac—though we are informed that it is one of the measures in comparatively frequent use in a sanatorium conducted by the Public Health and Marine Hospital Service, where it is looked upon as decidedly serviceable, especially in hæmorrhagic cases. It is gratifying to learn, therefore, that an Italian physician, Professor Carlo Forlanini, of Pavia (*Deutsche medizinische Wochenschrift*, August 30th), has employed it rather extensively and with good results. Dr. Forlanini states, indeed, that it was so far back as in 1892, a time prior to Dr. Murphy's communication on the subject, that he first resorted to it.

Forlanini injects from 200 to 300 cubic centimetres of nitrogen, and repeats the procedure until the absence of respiratory murmur shows that the lung is inactive. The fever and the expectoration are apt to be increased at first, but rapidly progressing improvement follows. In all, he has treated twenty-five cases in this way.

Obituary.

FRANK E. BECKWITH, M. D.,

OF NEW HAVEN, CONN.

While only of middle age, and still in the possession of his full intellectual abilities, Dr. Beckwith has been taken from the field of his earthly activity. He was a graduate of the College of Physicians and Surgeons of New York, of the class of 1871. About twenty-five years ago he was appointed professor of obstetrics in the Medical School of Yale University. He performed the duties of that office most creditably for several years. He had previously served for a considerable period as the chief house officer of the Nursery and Child's Hospital, New York, where the obstetrical service was large. In New Haven he soon acquired an ample private practice, and he was highly esteemed by his professional brethren.

News Items.

NEW YORK CITY AND STATE.

The Buffalo Academy of Medicine.—The programme for a meeting of the *Section in Surgery*, to be held on Tuesday evening, January 8th, includes a paper on Certain Diseases of the Peritoneum by Dr. James G. McDonald of Buffalo.

The Harvey Society Lectures.—The sixth lecture in the Harvey Society course will be delivered at the New York Academy of Medicine on Tuesday evening, January 12th, by Professor F. G. Benedict. Subject: Metabolism During Fasting.

The Medical Society of the County of Monroe, N. Y.—At a meeting of this society held recently at Rochester, officers were elected as follows: President, Dr. W. L. Conklin; vice-president, Dr. C. D. Young; treasurer, Dr. R. R. Fitch; secretary, Dr. C. R. Witherspoon; censors, Dr. J. W. Whitbeck, Dr. E. H. Howard, Dr. W. S. Ely, Dr. R. M. Moore, Dr. F. F. Dow.

The West Side Clinical Society of New York.—The annual dinner of this society will be held on Thursday evening, January 10th, at the Hotel Knickerbocker. At a meeting held on Thursday, December 13th, 1906, officers were elected as follows: President, Dr. J. R. Bingham; secretary, Dr. Charles A. Haffner; treasurer, Dr. A. C. Metcalf.

An Addition to the State Hospital at Utica.—The State Commission in Lunacy has awarded a contract for erecting a new building in connection with the State hospital for the care of the acute insane at Utica. Work upon the new structure will be commenced early in the spring of 1907. The new building will be of brick and will accommodate eighty-eight patients, each having a separate room.

The Women's Medical Association of New York City.—A memorial meeting, as a tribute to the late Dr. Mary Putnam Jacobi, was held at the New York Academy of Medicine, on Friday evening, January 4th. Among those who were announced to deliver addresses were: Dr. William Osler, Dr. Elizabeth Cushier, Dr. Charles L. Dana, and Professor Felix Adler.

The New York Academy of Medicine.—The following programme was arranged for the annual meeting of the academy on Thursday, January 4th: Presentation of Annual Reports; Address of the retiring president, The Academy of Medicine; Address of the incoming president, The Value of Organization in Medicine. In view of their long and conspicuous position as fellows of the academy during the last fifty years, Dr. Stephen Smith, 1855, and Dr. Abraham Jacobi, 1857, were invited to give some reminiscences of the medical and surgical practice in New York during the period of the early history of the academy.

The following order was arranged for a meeting of the *Section in Surgery*, held on Friday evening, January 4th: Presentation of Patients: (a) Abscess of the Temporo-sphenoidal Lobe; (b) Glioma of the Brain (Motor Area), by Dr. A. A. Berg; (c) Traumatic Amputation of Finger—Autoplasty, by Dr. Dalton M. Brickner; Papers: (a) Motor Boat Fractures, by Dr. Henry P. de Forest; (b) Duodenal Fistula—Its Treatment by Gastroenterostomy and Closure of the Pylorus, by Dr. A. A. Berg; report of cases; Exhibition of apparatus.

The *Section in Dermatology* will hold a meeting on Tuesday evening, January 8th, with the following order: Presentation of Cases; Reports on Cases previously shown.

A meeting of the *Section in Public Health* will be held on Tuesday evening, January 8th, with the following order: Remarks on Some Problems of the Past Concerning the Health of New York City, by Dr. Joseph D. Bryant; Problems of the Present Day, by Dr. Hermann M. Biggs; Sanitary Problems: Water Supply and Sewage Disposal, by Dr. George A. Soper; Discussion as to the Aims and Objects of the Section and Means of Accomplishment, by Dr. W. Freudenthal, Dr. E. G. Janeway, Dr. S. A. Knopf, and others.

The *Section in Paediatrics* will hold a meeting on Thursday evening, January 10th, with the following programme: Presentation of Patients: A Case of Diabetes Insipidus in a Child, by Dr. Eli Long; Reports of Cases: A Case of Afebrile Pneumonia in a Child, by Dr. A. L. Goodman; Papers: (a) The Enlargement of the Epitrochlear and Other Glands in Infants, by Dr. A. F. Hess; (b) A Clinical

Study of Congenital Syphilis, by Dr. W. B. Jennings; General.

The *Section in Otolaryngology* will hold its annual meeting at a meeting to be held on Thursday evening, January 10th: Report of a Case of Lateral Sinus and Jugular Thrombosis with Abscess Development in the Neck, by Dr. J. J. Fennell; Paper: The Present Status of the Question as to Progressive Spongification of the Labyrinthian Capsule, by Dr. Norval H. Pierce, of Chicago.

Society Meetings for the Coming Week:

MONDAY, January 7th.—Brooklyn Anatomical and General Society (private); Morrisania Medical Society, New York (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Niagara Falls, N. Y., Academy of Medicine (private); Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; South Pittsburgh, Pa., Medical Society; Chicago Medical Society; Practitioners' Club, Newark, N. J.

TUESDAY, January 8th.—New York Medical Union (private); New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Surgery); Kings County, N. Y., Medical Association; Practitioners' Club of Jersey City, N. J.; Medical Society of the County of Schenectady, N. Y. (annual); Rome, N. Y., Medical Society; Medical Society of the County of Rensselaer, N. Y.; Newark, N. J., Medical Association (private, election); Trenton, N. J., Medical Association; Northwestern Medical Society of Philadelphia; Richmond, Va., Academy of Medicine and Surgery; Practitioners' Club, Richmond, Ky.

WEDNESDAY, January 9th.—Medical Society of the Borough of the Bronx, New York; Lenox Medical and Surgical Society, New York (private); New York Pathological Society (annual); New York Surgical Society; American Microscopical Society of the City of New York; Society of the Alumni of the City (Charity) Hospital, New York; Society for Medical Progress, New York; Pittsfield, Mass., Medical Association (private); Philadelphia County Medical Society; Medical Society of the County of Allegheny, N. Y.; Brooklyn Medical and Pharmaceutical Society Association (annual); Richmond County, N. Y., Medical Society (annual).

THURSDAY, January 10th.—New York Academy of Medicine (Sections in Otolaryngology and Paediatrics); Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia; Church Hill Medical Society of Richmond, Va.; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers, N. Y.; Practitioners' Society of Eastern Monmouth, Camden, N. J.; Society of Physicians of the Village of Canandaigua, N. Y.

FRIDAY, January 11th.—New York Academy of Medicine (Section in Neurology); New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York; Saratoga Springs, N. Y., Medical Society; Medical Society of the Town of Saugerties, N. Y.; German Medical Society of Brooklyn; Dermatological and Genitourinary Society, Brooklyn (private).

SATURDAY, January 12th.—Obstetrical Society of Boston (private).

PHILADELPHIA AND THE MIDDLE STATES

Philadelphia Municipal Hospital Census:

	Remaining last report	Received.	Discharged.	Dead.	Relieved.
Internal	70	106	108	14	74
Surgical	59	29	27	4	57
Out-patients	1	2	1	0	2

Charitable Bequests.—By the will of Mrs. M. Louise Delaveau, the Methodist Episcopal Hospital receives \$5,000 to endow a bed, to be known as the Rebecca E. S. Delaveau Free Bed; The Methodist Home for the Aged received \$2,500; the Methodist Orphanage \$2,500; the Children's Aid Society of Pennsylvania, \$2,500; and the Philadelphia Society for Organizing Charity receives \$1,000.

Reading Sanitarium for the Treatment of Tuberculosis.—The annual meeting of the medical staff of the Reading

Sanitarium for the Treatment of Tuberculosis was held in December 1906. The following officers were elected: President, Dr. F. W. Frankhauser; vice-president, Dr. S. Banks Taylor; secretary, Dr. Oan J. Thompson. Since the foundation of the institution 346 cases have been treated.

Philadelphia Pathological Society.—At a meeting of the Philadelphia Pathological Society, held on Thursday, December 27, 1906, Dr. L. Johnson read a paper on Primary Carcinoma of the Gallbladder; Dr. John Speese read a paper on Primary Squamous Carcinoma of the Gallbladder. Dr. W. H. MacKinney gave a demonstration of *Spirochæta Pallida* in Syphilitic Lesions. Dr. Brooke M. Anspach and Dr. Herman B. Allyn read a paper on Syncytioma Malignum. Dr. Allen J. Smith exhibited card specimens of aneurysm of the heart.

Scientific Society Meetings in Philadelphia for the Week Ending January 12, 1906.—Monday, January 7th, Philadelphia Academy of Surgery; Pathological and Microscopical Section, Academy of Natural Sciences; West Philadelphia Medical Association; Northwestern Medical Society. Tuesday, January 8th, Philadelphia Pædiatric Society; Botanical Section, Academy of Natural Sciences. Wednesday, January 9th, Philadelphia County Medical Society. Thursday, January 10th, Pathological Society; Section Meeting, Franklin Institute. Friday, January 11th, The Northern Medical Association; West Branch of the Philadelphia County Medical Society.

Philadelphia Personals.—Dr. Edward Anthony Spitzka, professor of general anatomy, and Dr. George McClellan, professor of applied anatomy, at Jefferson Medical College, were entertained, on the evening of December 22nd, by the Penn Club.

Dr. George A. Piersol, professor of anatomy in the University of Pennsylvania, has been elected president of the Pennsylvania State Anatomical Board.

Dr. W. Joseph Hearn, who was so seriously injured a few weeks ago, is gradually and surely recovering, and his physicians expect that he will be able to go out in a short time.

Dr. John Fassett Edwards, of Laceyville, Pa., is registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

The Philadelphia Dental College and the Garretson Hospital will be absorbed by the Temple College of Philadelphia. Temple College is an institution which owes its foundation and development to the energies of Russell H. Conwell, D. D. It has been in operation for several years in connection with Dr. Conwell's church; and, a few years ago, in addition to its literary and scientific departments, a medical department was added, in which most of the teaching is done in the late afternoon and evening. The classes are composed of men who have been employed during the day. There is much regret among physicians generally in Philadelphia at this step, as it is believed by many that people who have been working all day are not in suitable mental condition to study medicine during the evening. The school seems to have prospered, however, and the Samaritan Hospital, which is also managed by the same trustees that manage Temple College, supplies abundant clinical material. Now the addition of a dental department will place Temple College on a par, so far as departments are concerned, with universities. We understand that the institution is in the future to be called a university. It is reported that extensive building operations are to be begun at Broad and Brown streets for the accommodation of the enlarged institution.

Christmas in Philadelphia Charitable Institutions.—Christmas day was observed as usual in the Philadelphia institutions devoted to the alleviation of the sufferings of the poor. Christmas trees were erected in the wards of the University Hospital, the Presbyterian Hospital, the Philadelphia General Hospital, the Medicochirurgical Hospital, St. Joseph's Hospital, St. Christopher's Hospital, St. Agnes's Hospital, the Methodist Episcopal Hospital, the Philadelphia Polyclinic Hospital, the Pennsylvania Hospital, and St. Timothy's Hospital. In addition, in these institutions and also in the German Hospital and the Episcopal Hospital, special dinners were served. The Heimgartner Club, of 32 Girard Avenue, gave away more than 30 tons of coal to the poor in the section of the city in which it is located. The Helping Hand Mission gave a Christmas dinner, and distributed about 100 dinners to poor fami-

lies. The Whatsoever Gospel Mission and Rescue Home, and the Neighborhood Guild, also supplied dinners and presents for people in straightened circumstances. The Salvation Army fed more than 1,000 families. The American Salvation Army gave dinners for 1,500 men and women. The Volunteers of America gave dinners to 500 persons at its headquarters and distributed packages among about 250 families. The Home for Hebrew Orphans benefited from the receipts of a ball.

Philadelphia Bureau of Health Statistics.—During the month of November, 1906, in the division of medical inspection, 3,667 inspections were made, exclusive of schools, and 614 fumigations were ordered; sixty-seven cases were referred for special diagnosis; 251 cultures were taken; 207 injections of antitoxine were given, and 414 persons were vaccinated. In the division of vital statistics, 2,351 deaths, 3,044 births, and 216 marriages, were reported. In the division of milk inspection, 6,624 inspections were made of 136,319 quarts of milk, of which 1,295 quarts were condemned; twenty-six specimens were examined chemically and 848 microscopically. In the division of meat and cattle inspection, 4,237 sanitary inspections were made, of which twenty-four were found unsanitary; 4,237 inspections of dressed meats were made, of which 466 were condemned; 1,787 post mortem examinations were made and 174 carcasses condemned. In the division of disinfection there were 107 fumigations for scarlet fever, 345 for diphtheria, 146 for typhoid fever, 158 for tuberculosis, 151 for miscellaneous diseases, and twenty-one schools were fumigated. In the bacteriological laboratory, 1,484 cultures were examined for the presence of bacillus diphtheriæ, 583 specimens of blood were examined for the serum diagnosis of typhoid fever, 841 specimens of milk were examined, 128 specimens of sputum, 2,302,500 units of antitoxine were supplied, and ten disinfection tests were made. In the chemical laboratory 121 analyses were made.

The Health of Philadelphia.—During the week ending December 22, 1906, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Malarial fever	1	0
Typhoid fever	176	31
Scarlet fever	26	0
Chicken pox	73	0
Diphtheria	79	17
Cerebrospinal meningitis	3	1
Whooping cough	13	1
Measles	18	1
Tuberculosis of the lungs	81	57
Pneumonia	59	52
Erysipelas	15	1
Septicæmia	4	1
Tetanus	1	0
Mumps	4	0
Cancer	21	18

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 8; diarrhoea and enteritis, under two years of age, 13. The total mortality was 526, in an estimated population of 1,469,126; corresponding to an annual death rate of 18.62 in 1,000 population. The total infant mortality was 90; under one year of age, 78; between one and two years of age, 12. There were 31 still births, 13 males and 18 females. The temperatures were seasonable; the total precipitation was 1.42 inches.

BOSTON AND NEW ENGLAND.

The Cumberland County, Maine, Medical Association.—At a meeting, held at Portland, on Thursday evening, December 20, 1906, Dr. C. O. Hunt read a paper on New Remedies, and Dr. C. B. Sylvester, of Harrison, read a paper on What Drugs We Use and Why We Use Them.

Free Public Lectures at Harvard Medical School.—The faculty of Harvard Medical School has arranged for a course of free public lectures on medical subjects, to be given at the new medical school buildings on Saturday evenings and Sunday afternoons, beginning January 12, 1907, and ending May 12th. Among the names of the lecturers who are to deliver one or more lectures are those of Dr. Robert W. Lovett, Dr. Edward H. Bradford, Dr. Harold C. Ernst, Dr. John Lovett Morse, Dr. William T. Councilman, Dr. Clarence J. Blake, Dr. Joel E. Goldthwait, and Dr. Thomas Morgan Rotch.

The Rutland, Vermont, Railroad Surgeons held their second annual meeting at Rutland, on Tuesday, December 18, 1906. Officers for the ensuing year were elected as follows: President, Dr. S. E. Maynard, of Burlington; vice-

Pease, of Burlington; Dr. G. G. Marshall, of Wallingford; and Dr. D. W. Whittier, of Haverhill. The program for the meeting was: "The Importance of the Railroad Surgeon," by Dr. W. N. Bryant; "Care of Infected Wounds," by Dr. W. N. Bryant; "Ununited Fractures and Their Causes," by Dr. C. W. Peck; "Shock in Railroad Injuries," by Dr. J. S. Hill; and "Traumatic Neurasthenia," by Dr. S. W. Pease.

BALTIMORE AND THE SOUTH

The Madison County, Tennessee, Medical Society.—At a meeting of this society, held at Jackson, on Monday, December 17th, 1906, the following officers were elected: President, Dr. W. F. Rochelle; vice-president, Dr. A. B. Dancy; secretary-treasurer, Dr. E. K. McNeil, of Jackson.

The Fulton County, Georgia, Medical Society.—At a meeting of this society held at Atlanta, on Thursday evening, December 20, 1906, officers were elected as follows: President, Dr. Claude A. Smith; vice-president, Dr. Walter B. Emery; secretary, Dr. Michael Hoke; treasurer, Dr. Emil Van Gondsdoorn, of Atlanta.

The Orangeburg County, South Carolina, Medical Society.—At the annual meeting of this society, held at Orangeburg, on Monday, December 17th, officers were elected as follows: President, Dr. W. L. Pou, St. Matthew's; vice-president, Dr. A. S. Hydrick, Orangeburg; secretary, Dr. L. C. Shecut, Orangeburg; treasurer, Dr. William R. Lowman, Orangeburg; board of censors, Dr. A. R. Able, St. Matthew's, Dr. A. W. Browning, Elloree; and Dr. M. G. Salley, Orangeburg.

The Perry-Greene Counties, Mississippi, Medical Society.—At the annual meeting of this society, held at Hattiesburg, on December 27, 1906, officers for the ensuing year were elected as follows: President, Dr. I. H. C. Cook, of Hattiesburg; vice-president, Dr. W. R. Thames, of Hattiesburg; secretary and treasurer, Dr. Lewis Knight; censor, Dr. G. M. Lackey, of McLain; delegate to the State medical association, Dr. T. E. Ross; alternate, Dr. J. J. Stevens, of Hattiesburg.

Life Insurance Examinations in Mississippi.—We are informed by the secretary of the Leflore County, Miss., Medical Society that the following agreement has been signed by every physician in Leflore County: "The undersigned agrees to comply with the resolution passed by the American Medical Association, the Mississippi State Medical Association, and the Leflore County Medical Society looking to a minimum fee of \$5 for all examinations for standard life insurance companies doing business in Mississippi."

The Jefferson County, Alabama, Medical Society.—The recent election of officers of this society resulted as follows: President, Dr. B. L. Wyman, of Birmingham; vice-president, Dr. George A. Hogan, of Bessemer; county health officer, Dr. J. M. Mason, of Birmingham, (to serve two years, reelected); city health officer, Dr. R. B. Harkness, of Birmingham, (to serve two years, reelected); secretary and treasurer, Dr. A. F. Toole, of Birmingham; member board of censors, Dr. J. D. Heacock, of Birmingham, (reelected for five years).

The Mortality of Baltimore.—The report of the Health Department for the week ending December 22nd, showed a total of 229 deaths, as compared with 193 for the corresponding week of last year, 202 in 1904, and 183 in 1903. The annual death rate in a thousand of population was: Whole, 20.69; white, 19.03; colored, 20.55. The principal causes of death were: Typhoid fever, 5; scarlet fever, 1; whooping cough, 2; diphtheria, 5; membranous croup, 1; influenza (la grippe), 2; consumption, 33; cancer, 5; apoplexy, 10; organic heart disease, 21; bronchitis, 3; pneumonia, 27; Bright's disease, 15; congenital debility, 16; lack of care, 3; old age, 8; suicide, 1; homicides, 2; accidents, etc., 12. The nativity of the decedents was: United States—White, 136; foreign, 40; colored, 50; unknown, 3. Eleven deaths occurred at Bayview Asylum, 16 in hospitals, and 8 in other institutions. Twenty-two coroners' inquests were held. The following number of

the corresponding week of last year:

Mumps 1

The following officers were elected at a meeting held at Detroit on Wednesday evening, December 19, 1906: President, Dr. B. D. Parker; vice-president, Dr. Roy D. Hensel; secretary and treasurer, Dr. Anna M. F. Starring; curators, Dr. M. R. Van Baalen and Dr. William C. Stevens.

The Butler County, Ohio, Medical Society.—At a recent meeting of this society, held at Hamilton, officers for the ensuing year were elected as follows: President, Dr. John Francis, of Hamilton; vice-presidents, Dr. L. H. French, of Hamilton, and Dr. D. B. Bundy, of Middleton; secretary, Dr. L. H. Frechtling, of Hamilton; treasurer, Dr. F. M. Fitton, of Hamilton.

Statement of Mortality of Chicago for the Week Ending December 22, 1906, compared with the preceding week, and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of midyear population—2,049,185 for 1906, 1,990,745 for 1905.

	Dec. 22, 1906	Dec. 13, 1906	Dec. 23, 1905
Total deaths, all causes	618	598	496
Annual death rate in 1,000	15.77	15.22	12.99
Sexes			
Males	358	350	261
Females	260	248	232
Ages			
Under 1 year of age	123	120	76
Between 1 and 5 years of age	72	69	46
Between 5 and 20 years of age	47	57	40
Between 20 and 60 years of age	253	230	235
Over 60 years of age	127	131	109
Principal causes of deaths			
Apoplexy	11	8	6
Bright's disease	14	5	13
Bronchitis	21	26	11
Cancer	35	35	63
Consumption	25	25	20
Croup	10	17	7
Diphtheria	21	24	8
Dysentery	62	49	8
Heart disease	7	2	5
Influenza	29	23	18
Measles	2	2	5
Meningitis	2	2	22
Nephritis	113	88	81
Other diseases	15	12	5
Scarlet fever	1	1	6
Suicide	1	1	11
Unlabeled deaths	4	4	27
Wholesale deaths	3	5	2
Wholesale deaths	123	124	114

GENERAL.

The American Physiotherapeutic Association.—The officers of this association for the ensuing year are as follows: President, Dr. H. H. Roberts, Lexington, Ky.; secretary, Dr. Otto Juettner, Cincinnati, Ohio; treasurer, Dr. George H. Grant, Richmond, Ind.; executive council: Dr. W. F. Klein, Lebanon, Pa.; Dr. James Hanks, Brashear, Mo.; Dr. J. W. Unger, West Point, Miss.; Dr. Charles S. Northern, Talladega, Ala.; Dr. R. W. Gibbes, Columbia, S. C.; Dr. S. J. Crumbine, Topeka, Kas.; Dr. A. L. Blesh, Guthrie, Okla.

Mosquitoes on the Isthmus.—The conditions, says Gorgas, were very different from those in Havana (*Journal of the Association of Military Surgeons of the United States*, for December, 1906), fully 99 per cent. of the Panama mosquitoes being *stegomyia* against 5 per cent. in Havana, and the territory covered being very much larger. The practical result, however, has been the same in the stamping out of yellow fever. Malaria, however, is the principal difficulty, but here the results have also been favorable, the principal recourse being superficial ditching. Out of 22,000 employees in October last there were only 21 in 1,000 on the sick list, and he thinks the health conditions are fully as favorable as they would be in similar work in Maryland or in Pennsylvania.

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

December 29, 1906

1. The Management of Tuberculosis. Sanity: Candor: Humanity, By J. H. MUSSER.
2. The Stem Pessary for Amenorrhœa and Dysmenorrhœa, By J. H. CARSTENS.
3. The Best Method of Closing Aseptic Wounds, Especially Those of the Abdomen, By HENRY O. MARCY.
4. Cases of Meningitis with Isolation of Diphtheria Bacillus from Cerebrospinal Fluid, By JOSEPH MORRELL and HERMAN E. WOLF.
5. Ætiology of Cerebral Palsies in Children, By WILLIAM J. BUTLER.
6. Bacteriologic and Blood Findings in Thirty-six Cases of Bowel Infection of Infants, By J. C. COOK.
7. The Dietetic Treatment of Diabetes Mellitus, By MAX EINHORN.
8. A Novel Method of Using Strychnine and Hydrastine in Sexual and Vesical Weakness, By WILLIAM J. ROBINSON.
9. The Results of the Complete and Incomplete Occlusion of the Abdominal and Thoracic Aortas by Metal Bands (Abstract), By W. S. HALSTED.
10. Reduplication of Heart Sounds, By HENRY C. PILLSBURY.
11. The Cultivation of *Spirillum Obermeieri*. A Preliminary Note, By F. G. NOVY and R. E. KNAPP.
12. The Tuberculosis Dispensary: Its Methods, Value, and Limitations, By EDWARD O. OTIS.

2. **The Stem Pessary for Amenorrhœa and Dysmenorrhœa.**—Carstens observes that the stem pessary will generally cure amenorrhœa after all other means have failed. It will develop an infantile uterus, enlarge a prematurely atrophied one, and restore a super-involuntional womb to a normal condition; it will cure most cases of intractable dysmenorrhœa, when no special pathological condition can be found; if worn for six months or a year it sometimes cures sterility. All inflammatory conditions about the pelvic organs must be rigidly excluded before it is used. The same septic precautions should be taken during its introduction as a surgeon would take with the most complicated case of abdominal surgery.

5. **Ætiology of Cerebral Palsies in Children.**—Butler says that on reviewing the ætiology of infantile spastic hemiplegia of postnatal origin, the conclusion seems unavoidable that the causes are essentially the same as produce hemiplegia at later periods of life. While we do not find in children the miliary aneurysms or arteriosclerosis that are found in later life, and which with high arterial tension are the source of spontaneous hæmorrhage at this period, we may have a hæmorrhage resulting from spontaneous rupture during sudden, intense, venous congestions, as in convulsions or the paroxysms of whooping cough, or we may have a hæmorrhage from head injuries. Likewise an infantile spastic hemiplegia may depend on a specific cerebral endarteritis and thrombosis, or an embolus from a nearby arterial or cardiac thrombus or an endocarditis, resulting in areas of cerebral softening, all of which are common causes of hemiplegia at all periods of life. Although the frequency of inflammatory processes as a cause of infantile spastic hemiplegias may remain a disputed question, the fact of their occurrence seems to have been placed beyond a doubt, in view of the pathological reports of Ganghofner, Nauwerk, Raymond, Batten, etc. Encephalitis, however, is a lesion that may occur at any time of life, and is probably an important factor in the causes of cerebral paralysis in children. Close clinical observation of some cases of infantile spastic palsies seems to allow of no other assumption than that of an acute encephalitis as its cause. Cerebral tumor is hardly to be considered as a factor in these cases, because hemiplegia,

if it exists, will merely form one of a series of clinical manifestations of the tumor, the diagnosis of which will take precedence over a symptom.

7. **The Dietetic Treatment of Diabetes Mellitus.**—Einhorn gives a list of various diets for diabetes, among them von Noorden's, Seegen, Winternitz, Mossé, and others. His own diet is as follows: Breakfast, three eggs, 240 calories; half a roll (20 grammes), 50; butter (30 grammes), 251; coffee (150 grammes), milk (100 grammes), cream (50 grammes), 203; dinner, a plate of soup (200 grammes), with egg, 85; meat (200 grammes), 200; half a roll and butter (15 grammes), 175; asparagus with butter sauce (salad), 30; supper, oysters or fish (100 grammes), 100; three scrambled eggs with butter (15 grammes), 365; half a roll with butter (15 grammes), 175; Westphalian ham (50 grammes), 200; apples, tea, and cream (50 grammes), 138. Total, 2,212 calories. He then speaks of those cases which are complicated with affections of the stomach: 1. If hyperchlorhydria complicates diabetes the treatment is easy, as the diet is the same in both (principally fat and albumin). Even the medicinal treatment of hyperchlorhydria (alkalies, sedatives) influence also the diabetes favorably. 2. It is different in achylia gastrica complicating diabetes. As is well known, meat is not well borne in achylia gastrica, whereas a vegetarian diet (plenty of carbohydrate) usually agrees best with these patients. We are thus confronted by a dilemma. The diabetes requires a preponderance of animal, the achylia a preponderance of vegetable food. We must find a way to select the food so that while it is rich in albumin and fat it still contains little meat. In these cases a trial of the von Noorden oatmeal cure would be appropriate. The author gives a diet list which he has used with advantage: Breakfast, three soft boiled eggs, 240 calories; one roll (40 grammes), 100; butter (30 grammes), 251; coffee (200 grammes), and cream (50 grammes), 138; dinner, beef tea (200 grammes), with meat powder (30 grammes), 118; three scrambled eggs, 240; half a roll, 50; butter (30 grammes), 251; spinach or asparagus (50 grammes), 82; supper, two eggs beaten with 150 grammes of milk and 50 grammes of cream, 394; mashed potato (50 grammes), 63; crackers (10 grammes), 24; cream cheese (20 grammes), 79; butter (30 grammes), 251; 9.30 p. m., 300 grammes of Kumyss, with almonds and nuts, 100. Total, 2,381 calories.

10. **Reduplication of Heart Sounds.**—Pillsbury remarks that reduplication of the heart sounds is a not uncommon sign. The cause may be either asynchronous contraction of the ventricles or the auricular sonud. Normal persons with thin chest walls usually show reduplication. Persons with thick chest walls should not. In persons in whom no reduplication should be present it is a sign of positive value. Reduplication of the first sound means that the heart is not working properly. This may be due to nervous interference, as in persons with bad habits, or it may mean that the heart is hampered by external agencies, by pressure, or by traction, or, finally, it may mean that the heart muscle is not efficient, either due to systemic disease or inherent conditions. Reduplication of both first and second sounds is usually only a more advanced degree of the same condition. Reduplication of the second sound alone means an alteration in the relative blood pressure of the systemic and pulmonary circulations.

MEDICAL RECORD.

December 29, 1906.

1. On the Sensibility of Abdominal Organs and the Influence of Injections of Cocaine Upon It, By L. KAST and S. J. MELTZER.
2. Schlösser's Treatment for Trigeminal Neuralgia, By OTTO KILIANI.

3. The X Ray vs. Surgery in Sarcoma, with Report of Cases, By ASPINWALL JUDD.
4. Notes on Fevers in the Tropics, By E. S. GOODHUE.
5. The Bursting of the Standardization Bubble, By WILLIAM J. ROBINSON.
6. A Plea for the Simple Round-Ligament Ventrosuspension, By B. S. TALMEY.

1. On the Sensibility of Abdominal Organs and the Influence of Injections of Cocaine Upon It.—Kast and Meier have made some very interesting experiments. They review the present situation on the question of sensibility of abdominal organs as follows: There is no fact which is more real than intraabdominal pain. Peritonitis, appendicitis, enteric, biliary, and renal colic, etc., are frequent phenomena in the physician's daily work. We are confronted at present with an accumulation of reliable surgical evidence that intraabdominal organs feel neither pain nor other sensations. The physiological literature of the last few decades contains hardly any investigation on that subject, and in many leading textbooks of physiology there is not a word on visceral pain. It is the surgeon who now deals with the subject, and for good reasons. For the last quarter of a century surgeons perform, as we all know, very many laparotomies, and since the introduction of infiltration anæsthesia by Schleich some of these operations were carried out without general anæsthesia. There was then apparently an excellent opportunity of studying the sensibility of abdominal organs—the tranquil and wide awake patient with a wide open abdomen could give a better account of sensations than the seminarcozized dumb beast. Many surgeons have made in recent years more or less systematic observations on the subject in question, but none has carried out a more careful, painstaking, scientific study of our problem than G. K. Lennander, the excellent Swedish surgeon. All his numerous observations gave uniformly one result: Stomach, intestines, omentum, mesentery, spleen, liver, gallbladder, kidneys, bladder, uterus, etc., are completely devoid of sensation of pain, and of any other sensations. Only the parietal peritonæum feels pain. According to Lennander the painlessness applies to the normal organs as well as to the inflamed. The pain is explained as caused by pressure, sliding, or pulling of the parietal peritonæum; some other pains are caused by pulling the mesentery, and thus irritating the posterior wall of the abdominal cavity, which is provided with pain fibres derived from the spinal nerves. In other conditions the pain is caused by a lymphangitis and lymphadenitis which reaches the nerves of the posterior wall; and, again, in others some irritating toxic products or chemicals, like hydrochloric acid in gastric ulcer, reach the lymphatics of the posterior wall. In short, all pains come either from the parietal peritonæum or from the spinal nerves of the posterior wall of the abdominal cavity. That is the view which is now held by authoritative men practically without any contradiction on the subject of pain and sensibility in abdominal viscera. Internal organs do not feel more pain than dead tissue or our hair and nails. To settle the question the authors have experimented with cats and dogs, and have found that in these animals the sense of pain is present in normal organs, and that it is considerably augmented in inflamed organs. They found, further, that a subcutaneous or intramuscular injection of cocaine is capable of completely abolishing this sensation in normal as well as in inflamed organs. Another interesting point is the observation that the parietal peritonæum also loses its sensation by a hypodermic injection in any part of the body, but the anæsthesia sets in here later and disappears earlier than in the internal organs. It is possible also that the degree of the anæsthesia is lower, but the authors are

not yet ready to make any positive assertion on that point. They therefore offer the suggestion that the anæsthesia of the internal abdominal organs observed by the surgeons was due to the use of cocaine.

3. The X Ray vs. Surgery in Sarcoma, with Report of Cases.—Judd states in an interesting position that he believes that all neoplasms of whatever kind and wherever situated, with the possible exception of superficial epithelioma, in which a plastic surgical procedure will not result satisfactorily, should at once be subjected to operation. There are, however, many cases in which, owing to the flat refusal of the patient to submit to operation, to the fact that the tumor is already found inoperable on first examination, and also to the further fact that in a certain class of tumors the cancer, small in itself, will require a grave or disfiguring operation for its removal, the surgeon is compelled to weigh the chances of radiology in effecting a cure. The author states that the action of the ray in sarcoma is the same as in carcinoma, but owing to the different reaction of tissue the result is far different. The stimulation in these cases causes the changing over of the embryonic type of connective tissue into the adult type, a change from preponderant cells to a tumor mostly composed of fibres; the obliterating endarteritis diminishes the amount of nourishment, and the final result is a fibroma, with possibly latent sarcoma cells included in the mass. Nearly all cases of sarcoma treated by the x ray recur, and in one of his cases this was even true for the third time. The author then concludes: "Whether I shall be obliged to go on treating these patients for the rest of their natural lives, or whether they will finally cease to be favorably affected as some of them already have, I have no means of knowing, but at any rate if I can prolong for one or more years in apparent health even a small fraction of these patients, I shall feel that in the x ray we have a remedy which, the knife proving impossible, is better than any other so far suggested." He employs a tube as rich in x rays and poor in cathode rays as possible. This means a very high tube, lighted by a current of considerable ampèreage, and produced by a coil or static machine of many plates, a small static machine not being effectual in lighting the tube. The distance should be considerable, never nearer than six inches, and usually nine or twelve, to prevent the action of the remaining cathode rays upon the skin. Reaction, as proved by the diminution in the size of the tumor, is usually slow at first. This depends, of course, upon the relative softness of the tumor or preponderance of cell elements.

5. The Bursting of the Standardization Bubble.—Robinson summarizes his article as follows: Standardization is useless: 1. When the active principle fully represents the drug it requires no argument that standardization is useless, and worse than useless, because the active principle offers indisputable advantages in (a) smallness of dose, (b) convenience of administration, (c) exactness of dose, (d) freedom from objectionable and irritating inert material, (e) nonchangeability, (f) nonvariability, (g) and more rapid absorption. 2. When the active principle does not represent the drug in every respect, standardization of one active principle is worse than useless, because it gives no information as to the absolute and relative amount of the other active principles, and does not provide for the removal of antagonistic principles. Furthermore, standardization is unreliable, unscientific, and imperfect; changes in temperature, exposure, evaporation, cause a change in the menstruum, which in its turn produces precipitation, etc. That such deterioration is actual, and not hypothetical, has been publicly acknowledged by one of the most prominent manufacturers of galenical preparations.

BRITISH MEDICAL JOURNAL.

December 15, 1906.

(British Medical Journal of the British Medical Association).

Section of Surgery.

1. A Discussion on Acute Septic Peritonitis,
By C. J. BOND.
2. Appendicitis: Some Points in Diagnosis and Treatment
Based on Over Six Hundred Operations,
By H. A. BRUCE.
3. Intestinal Obstruction in Association with the Vermi-
form Appendix,
By G. G. TURNER.

Section of Anatomy.

4. The Valves of the Iliac Vein,
By J. P. McMURRICH.
5. The Arteriolæ Rectæ of the Mammalian Kidney,
By G. C. HUBER.
6. The Morphology of the Uriniferous Tubule of the
Reptilian Kidney,
By G. C. HUBER.
7. The Mechanical Supports of the Pelvic Viscera,
By A. M. PATERSON.
8. Preliminary Communication on Some Features of the
Brain and Skull in Mongolism,
By D. WATERSTON.
9. The Morphology of the Hip Joint,
By G. L. JENKINS.
10. Experiments on the Developing Ear Vesicle of the Tad-
pole,
By G. L. STREETER.
11. The Development of Ova of the Toad Fertilized by
Spermatozoa Which Have Been Exposed to the
Röntgen Rays,
By C. B. BARDEEN.
12. The Development of the Nerve Elements in Verte-
brates,
By R. G. HARRISON.
13. The Early Development of *Geomys Bursarius*,
By T. G. LEE.
14. The Development of the Stria Vascularis,
By C. E. SHAMBAUGH.
15. The Chromaffine Characters of Certain Parietal Cells
of the Stomach,
By B. C. H. HARVEY.
16. An Unusual Peritoneal Anomaly Simulating Retro-
peritoneal Hernia,
By E. GOETTSCH and B. C. H. HARVEY.
17. A Symelian Monster (*Symphys Dipus*),
By R. J. GLADSTONE.
18. A Case of Innervation of the Nervus Lateralis Oculi by
the Nervus Oculomotorius, with Absence of the
Nervus Abducens,
By B. C. H. HARVEY.

Section of Obstetrics and Gynecology.

19. A Discussion on the Appendix Vermiformis in Relation
to Pelvic Inflammation, By T. A. HELME and others.
20. Antistreptococcus Serum in Puerperal Fever,
By M. CAMERON.

Section of Paediatrics.

21. The Early Diagnosis of Infectious Diseases by the
Recognition of the General Involvement of the
Lymphatic Glandular System, By A. E. VIPOND.

Section of State Medicine.

22. Plague Procedure in Hong Kong,
By J. M. ATKINSON.
23. The Prevention of Tuberculosis,
By S. G. DIXON.
24. Cancer: Its Treatment by Modern Methods (*Bradshaw
Lecture*),
By E. OWEN.

1. **Acute Septic Peritonitis.**—Bond, after discussing the present day views as to the pathology and bacteriology of acute septic peritonitis, goes on to discuss treatment. Morphine should only be given in the very earliest stage of peritonitis, and then only when given in one single and unrepented dose. It masks the symptoms and produces an illusory sense of betterment, it markedly inhibits leucocytosis, and lastly, it increases intestinal paresis and furthers the accumulation of toxic fluids in the intestine. The action of purgatives is usually more beneficial, providing they are given early in the disease, and produce some passage of flatus. Late in the disease they do harm. The best is calomel in grain doses, repeated at frequent intervals. Since most cases of diffused septic peritonitis owe their virulence to the colon bacillus, our hope in the future lies in some form of anticolon serum, valent against the various strains of the bacillus. Unfortunately, at present such an antidote is not forthcoming. The streptococcal cases are so rapidly fatal, that sera are likely to be of little service. In the gonococcal, pneumococcal, and staphy-

lococcal forms, however, the patients produce their own antitoxines, and aided by wise surgical interference, often recover. As a rule the surgeon should regard the upper or diaphragmatic area of the peritoneal cavity as sacred; free irrigation of this area will wash away the serous exudates containing the active phagocytes. The primary seat of infection must be sought for and attacked, local abscesses drained, the perforated appendix removed, the perforated bowel sutured, the gangrenous intestine sequestered and removed, etc. The removal of the primary focus should be followed by dry sponging, local and open irrigation, and free drainage. Evisceration is fatal, and free irrigation is only called for in very mild cases, or in the virulent streptococcus or pyocyaneus infections. Even here the diaphragmatic area should be let alone. The author sums up the question of irrigation as follows: It is beneficial where the peritoneal cavity contains foreign material, such as blood, gastric or duodenal contents or faecal matter, infected bile or urine, capable of removal by flushing. It is useful locally for the removal of purulent matter at the primary focus of invasion, in which case the phagocytes are no longer living and active. It is harmful in the case of fibrinous deposit and sticky coils without fluid, and must be used with the greatest reserve, if at all, in the case of seropurulent exudates containing active phagocytes. Of the three depressing factors—anæsthesia, exposure, and handling—the last is by far the worst. A cheerful expression after operation is the best and most reassuring of signs.

19. **Pelvic Inflammation and the Appendix.**—Helme submits the following propositions: 1. The association of appendicular and pelvic disease is due to contiguity rather than to continuity of structure. 2. The accidental inward direction or pelvic position of the appendix is the chief factor in this association. 3. The appendix or the pelvic organs may provide the primary source of disease. 4. Appendicitis is a frequent source of dysmenorrhœa and its associated mucous colitis. 5. The association of appendicitis with pelvic disease is the exception, and not the rule. 6. The appendix is not a vestigial structure, but a highly differentiated portion of the intestinal tract, and plays an important part in intestinal digestion. 7. The systematic removal of the appendix during laparotomy for pelvic disease in the absence of evident disease is not justifiable.

21. **Glandular Involvement in Infectious Diseases.**—Vipond holds that early diagnosis of the various infectious diseases is greatly helped by the proper recognition of the general involvement of the lymphatic glandular system. He sums up his conclusions as follows: 1. The lymph nodes are enlarged in infectious diseases. 2. They are enlarged some days before the development of the disease. 3. The enlargement is most marked between the ages of three and eighteen years. 4. The enlargement is not produced by the initiation of the rash, but is due to the absorption of the poison or toxine. 5. As a rule nursing infants do not contract infectious diseases readily as the tonsils are small and inactive. 6. The tendency to contract infectious disease would be much lessened if the mouth and tonsils were in a healthy condition. 7. The enlargement of the nodes is more marked in certain infectious diseases than in others. They are larger in erysipelas, measles and rubella, than in scarlet fever and whooping cough. 8. They resolve more quickly in diphtheria under the influence of antitoxine than they do in measles and erysipelas. 9. In all infectious diseases (except those of local inoculation) the poison most likely enters the system through the tonsils. 10. Suppuration does not take place in the nodes unless there is a mixed infection. Finally, in visiting a case of infectious disease, all the other children in the family who have been exposed should be examined, and if their lymph nodes are found to be enlarged they too should

be immediately isolated. This will do away with the dangerous custom of quarantining such children upon friends and relatives with the inevitable result of spreading the disease.

LANCET.

December 18, 1906.

1. Cancer: Its Treatment by Methylene Blue Injection.
By F. OWEN.
2. Some Observations on Paralysis of the Brachial Plexus.
By W. B. WAINMAN and R. JONES.
3. Water Gas, Carburetted Water Gas, and Carbon Monoxide Poisoning.
By J. GLAISTER.
4. Some Cases of Acute Leucæmia Admitted Into St. George's Hospital Between 1895 and 1905.
By L. D. BAILEY.
5. A Case of Sprue Treated by Strawberries.
By M. F. SQUIRE.

1. Treatment of Cancer.—Owen begins his article with the absolute statement that in the present state of medical and surgical knowledge and experience the only way in which the cure of a cancer can be obtained is by its prompt and thorough removal by operation. No surgeon in a desire to lessen mental distress or to allay dread, should be induced to consent to dallying with any problematical scheme of treatment. At present it is beyond the power of surgery to promise to cure cancer, whether by operation, X rays, by Finsen's light, or by any drug or nostrum injected into the blood, taken internally, or applied locally. Banks was the first surgeon to insist on thoroughness in dealing with cancer of the breast; in every case where the breast is removed, the axilla should be cleared out as a necessary accompaniment. The surgeon must never think how he is to get the edges of the wide wound together subsequently. The ideal method is to remove breast, skin, pectoral fascia, lymphatics running to axilla, and the axillary fat and glands all in one bulky mass—and to do it quickly. In cancer of the hip the whole submaxillary region must be opened up and cleaned out bare; the apex of the wedge should be represented by the tumor, and the sides should spread away so that all the loaded lymphatics and the affected glands may be taken away with the cancer. No consideration should be paid to the desire of leaving a good looking lip. Cancer of the tongue is of great local malignancy and spreads rapidly to the lymphatics and glands, but on the other hand, it is inclined to leave distant organs alone. So that if operation is thorough, the outlook should be good. Unfortunately the lymphatics of the tongue are often irregular in their distribution. The author speaks favorably of Dawbarn's "local starvation" method of operation. In cases of advanced inoperable cancer of the lower jaw he excises the whole of the external carotid artery on each side, and ties the inferior dental artery and the mylohyoid branch. The cancerous tissue, not receiving its needed supply of blood, becomes degenerate and wastes away. In conclusion the author entirely discredits Doyen's method of treatment by injection, and his *Micrococcus neoformans*, citing the mark of Paine and Morgan. In no instance did those observers succeed in producing any approach to a malignant tumor.

4. Acute Leucæmia.—Bailey's article is based on a series of five cases of acute leucæmia; from his observations he draws the following conclusions: The mode of onset is insidious, the patient frequently complaining of general malaise or some trifling ailment for some time before the acute symptoms are in evidence. It is impossible therefore to be definite as to the actual duration of the disease, and the term "acute" refers more especially to the latter part of the disease, during which time the symptoms are of an acute nature. In our present state of knowledge we can only theorize as regards the real nature of the disease. It is probable that the proliferation of the lymphocytes, if not the first, is a very early step in the disease and that the acute symptoms are merely a result of this phenomenon

and attributable to it. The swelling of the glands and tonsils, for instance, can be attributed to the accumulation of lymphocytes in these places. The subsequent necrosis of the latter, together with the stomatitis, are, of course, due to the presence of microorganisms in the mouth. The ecchymoses may be due to small thromboses and emboli with subsequent hemorrhage, and the general wasting and occasional delirium together with the raised temperature to toxæmia, partly from absorption of toxins from the mouth, and partly from nonelimination of toxins from the blood. Unfortunately patients suffering from this disease rarely seek advice until the condition of the blood is fully established and examinations during the early stages have therefore not been performed. The diagnosis, provided a blood examination is performed, is comparatively easy, and at once excludes purpura, and scurvy, all other forms of anæmia, and splenomedullary leucæmia. From a general sarcomatosis, however, it is not so easy to discriminate, for the general enlargement of the glands, the numerous subcutaneous hæmorrhages, and the rapid course of the disease are symptoms compatible with either malady. Here the blood examination is of the greatest assistance; in sarcoma the increase in the lymphocytes is not unusually so high as it is in acute leucæmia, and it includes as well a large increase in the small lymphocytes. The other forms of leucocytes are also relatively increased in sarcoma. But the line between general sarcoma and acute leucæmia is exceedingly fine. The cause of death is in most cases heart failure dependent upon the toxæmia. There is little to say as regards treatment. Drugs appear to be of no value. One case, however, appeared to do well for a time in intravenous injection of formalin solution.

5. Sprue and Strawberries.—Squire reports the case of a man, aged twenty-nine years, suffering from sprue or psilosis. For some months he had suffered from repeated attacks of vomiting and diarrhœa, with progressive emaciation. The condition was at first thought to be one of colitis, but it did not yield to appropriate treatment, and the stools gradually became yeasty. There was also complaint of burning of the throat and soreness of the tongue, and the conjunctivæ were distinctly yellowish. The diagnosis of sprue was made, and the patient put on a strict milk diet, under which he gradually improved. But he was unwilling to limit himself to milk, and any increase of the diet brought on a relapse. Finally, one pound of strawberries were ordered daily; within one week improvement was noticeable. Complete recovery took place by the end of two months, and has since been steadily maintained. The strawberries were undoubtedly the curative agent in the case; they seemed to supply something which enabled the alimentary canal to assimilate and digest the nourishment in the diet.

LA PRESSE MEDICALE.

December 8, 1906.

How Shall We Avoid Ozæna?

By MARCEL LERMOYEZ.

2. Perforating Cholecystitis Early in Typhoid Fever.

By V. VEDÉL and L. RIMBAUD.

1. How Shall We Avoid Ozæna?—Lermoyez repeats the comparison of ozæna with gonorrhœa made by him a short time ago in another paper, and quotes several additional cases in support of his contention that ozæna is a contagious disease, and that measures should be adopted to prevent its extension.

2. Perforating Cholecystitis Early in Typhoid Fever.—Vedel and Rimbaud report the case of a woman, thirty-five years of age, in whom a perforating cholecystitis resulted fatally during the early stage of an attack of typhoid fever. In the majority of the cases in which the occurrence of this complication has been reported it has been met with either late in the disease or during convalescence.

December 12, 1906.

1. The Thyreoid Secretions, By MARCEL GARNIER.
2. The Bacteriology of Carcinoma of the Stomach, By E. PALIER.
3. The Syphilitic Calendar, By ALFRED MARTINET.
4. New Investigations in Regard to Bier's Method, By R. ROMME.

1. **The Thyreoid Secretions.**—Garnier states that the thyreoid is a gland with a dual productive function, i. e., it produces an external secretion and an internal excretion. When the escape of the internal excretion is interfered with a local accumulation of colloid material occurs which results in the formation of colloid cysts. In such cases the increase in the size of the thyreoid gland is not due to a true hypertrophy nor to an epithelial degeneration. Deficiency of the excretion causes no trouble, but either excess or deficiency of the secretion is harmful. Excess induces the complex of symptoms due to hyperthyreoidization of the organism, while deficiency induces symptoms which resemble those of congenital or acquired myxœdema.

2. **The Bacteriology of Carcinoma of the Stomach.**—Palier asserts that carcinoma of the stomach is characterized by the presence of bacilli geniculati, the presence of cocci, and the absence of yeast and fungi. These three coincident conditions he believes to be pathognomonic of this disease.

BERLINER KLINISCHE WOCHENSCHRIFT

November 26, 1906.

1. Replacement of the Thumb by the Great Toe, By F. KRAUSE.
2. Poisoning by Ptomaines from Meat and Paratyphus, By L. ZUPNIK.
3. Antituberculous Sensibilisators, By GENGOU.
4. Contribution to the Study of Primary Tuberculosis (Lupus) of the Nasal Mucous Membrane, By J. FEIN.
5. Support and Suture of the Perinæum, By K. APFELSTEDT.
6. Hydrotherapy in Febrile Infectious Diseases, By S. MÜNTER.
7. Our Experiences with the New Food Preparation "Visvit," By S. ROSENTHAL.
8. The Results Thus Far Obtained from the Experimental Inoculation of Syphilis, By C. BRUHNS.

1. **Replacement of the Thumb by the Great Toe.**—Krause reports the case of a man, twenty-one years old, who had lost his right thumb years before as the result of an accident, and urged that an attempt be made to replace it by means of his own right great toe. The operation was accordingly performed. Unfortunately the patient could not be kept under observation long enough to determine the final result, as he left the country for America soon after his recovery from the operation, but the indications when last seen were that the result would prove eminently successful in the development of both sensation and motion. A reproduction of a radiograph portrays the condition of the bones after the operation.

3. **Antituberculous Sensibilisators.**—Gengou discusses the small amount of literature on the subject of sensibilisators, which are the same as Ehrlich's amboceptors, and presents the results of his own experiments.

4. **Primary Tuberculosis of the Nasal Mucous Membrane.**—Fein reports a case of primary disease of the nasal mucous membrane in a woman, twenty-five years of age. No other traces of tuberculosis could be detected.

6. **Hydrotherapy in Febrile Infectious Diseases.**—Münter discusses this subject in extenso. Most of what he says has been known and accepted for years. He believes that the beneficial effect produced is due to the soothing influence exerted on the nervous system and the strengthening of the heart, rather than to the reduction of the temperature. The only contraindications which he finds to the application of hydro-

therapy in the treatment of infectious fevers are conditions in which absolute rest is necessary, such as peritonitis, embolism, thrombosis, hæmorrhage, collapse, alcoholism, fatty degeneration of the heart, arteriosclerosis, and advanced age. In such conditions the local use of cold applications may often be of benefit.

7. **Visvit.**—Rosenthal has used visvit in several cases of anæmia, hysteria, arteriosclerosis, diabetes, phthisis, and during convalescence from pneumonia, influenza, and other infectious diseases, and has obtained in all a rapid increase of weight, increase of the number of the red blood corpuscles, and a marked increase in the amount of hæmoglobin.

MUENCHENER MEDIZINISCHE WOCCHENSCHRIFT

December 4, 1906.

1. Functional Hypertrophy of Transplanted Portions of the Thyreoid Gland in Man, By CHRISTIANI and KUMMER.
2. Eosinophile Diseases of the Intestine, By NEUBAUER and STÄUBLI.
3. Further Researches Regarding Precipitin of Cow's Milk in the Blood of Infants, By MORO.
4. Infantile Tuberculosis, By BRUCK.
5. The Early Bacteriological Diagnosis of Typhus, By CONRAD.
6. The Influence of Arsenic on Metabolism, By LARDELLI.
7. What Do We Know Regarding the Active Agent of Vaccine? By PASCHEN.
8. Theoretical and Practical Points Regarding Our Thread Material, By WEDERHAKKE.
9. Concerning the Presence of Antituberculin in Tuberculous Tissue, By WASSEMANN and BRUCK.
10. The Treatment of External Anthrax, By LENGFELLNER.
11. Nasal Tamponade in Ozæna, By SONDERMANN.
12. Contribution to the Serum Treatment of Basedow's Disease, By MAYER.
13. A Holding Plate for Self Retaining Specula, By SCHALLEHN.

1. **Functional Hypertrophy of Transplanted Portions of the Thyreoid Gland.**—Christiani and Kummer report the case of a woman, thirty-six years old, who had suffered from goitre for fifteen years, from the time of her first confinement. At each of her two subsequent confinements it had increased rapidly in size, and since the last had grown slowly. The whole of the thyreoid gland was removed with the exception of the pyramidal process. As it was questionable whether the pyramidal process alone would suffice to perform the physiological duties of the thyreoid gland two pieces of the right lobe were transplanted before its excision to places beneath the skin over the right acromion process. The patient made a prompt and good recovery from the operation. The transplanted pieces of the gland increased in size until they formed two visible lumps over the acromion. The pyramidal process also grew, and three years later one of the transplanted pieces was removed and examined microscopically. The histological condition of this piece is described at considerable length with the assistance of five illustrations. It accords with that of the normal thyreoid gland.

2. **Eosinophile Diseases of the Intestine.**—Neubauer and Stäubli report seven cases of cholera morbus and dysentery characterized by the presence of eosinophiles. Three examinations with the rectoscope uncovered yellowish white deposits on the rectal mucous membrane, composed of eosinophile constituents, eosinophile leucocytes, heaps of granules, and Charcot-Leyden's crystals. When these were removed they uncovered very red, superficial erosions of the mucous membrane which bled easily, but in no case was a deep ulcer or cicatrix found. The authors think that this condition is characteristic of an eosinophile proctitis with circumscribed deposits.

4. **Infantile Tuberculosis.**—Bruck reports the case of a child a few months old, born of a mother who had had tuberculosis, but had been apparently cured, the child died apparently of tuberculous meningitis. At the autopsy it was found that it had been suffering from general tuberculosis as shown by caseation of the bronchial glands, extensive tuberculosis of the lungs, tuberculous meningitis, internal and external hydrocephalus, tuberculosis of the spleen, kidneys, liver, mesenteric glands, and of the occipital bone.

6. **The Influence of Arsenic on Metabolism.**—Lardelli declares that in spite of the much greater amount of fat laid on by animals which are given arsenic, the percentage of nitrogenous constituents is almost exactly the same as in the leaner control animals, and that this demonstrates clearly that the increase of weight in such animals is due not alone to the fat, but also and in great part to the nitrogenous constituents, i. e., to the albumin. He explains their greater fatness as due to better nutrition and assimilation in the animals to which arsenic was given, with diminution of the watery constituents of their tissues and the absolute increase of the albumin.

10. **The Treatment of External Anthrax.**—Lengfeller reports fifteen cases of malignant pustule cured by the following conservative treatment: The pustule to be kept absolutely quiet and undisturbed, its neighborhood to be thoroughly clean, a nonirritating ointment to be applied for the sake of protection, and the diseased limb to be kept quiet and suspended. He considers the absolute quiet to be the most important factor of the treatment.

11. **Nasal Tamponade in Ozæna.**—Sondermann recommends for the use of patients who are unable to make as frequent visits to the physician as they should the introduction and inflation of a rubber bag in the nose to loosen and remove the crusts which form in atrophic rhinitis. This seems to him better than attempts on the part of the patient to wash out the crusts, or to remove them by any other form of tamponade.

13. **A Holding Plate for Self Retaining Specula.**—Schallehn describes a modification of the holding plate which forms an important part of the self retaining speculum he described some time ago.

LA RIFORMA MEDICA

November 17, 1905.

1. Permeability of the Kidneys in Hepatic Disease, By LUCA FIORAVANTI.
2. Presence of a Special Enzyme in the Urine of Nephritics, By ARTURO PRIMAVERA.
3. Clinical and Anatomicopathological Observations on Forty-six Cases of Intestinal Stenosis Due to an Intrinsic Cause (*To be continued*), By LUCA FIORAVANTI.

1. **Permeability of the Kidneys in Hepatic Disease.**—Fiorenza deals with the question of the functional disability of the kidneys in hepatic disease uncomplicated by renal affections. In 1898 Chauffard first applied the methylene blue excretion test in the study of renal permeability in connection with hepatic diseases. He found that in hepatic insufficiency methylene blue was excreted not continuously by the kidneys, as it is normally, but intermittently. So much importance did he attribute to this sign, that he regarded it as diagnostic of hepatic insufficiency when all other symptoms had disappeared. The more severe the hepatic affection was, the more frequent were the intervals of methylene blue excretion, and the earlier after the remedy had been injected did they begin. The object of the present research was to test further the hypothesis of Chauffard. For this purpose the author experimented with injections of methylene blue, and also of iodides and of salicylic acid. The iodides and sodium salicylate are not eliminated intermittently in hepatic disease, but are excreted with certain remissions. The curves

of elimination of the iodides, of sodium salicylate, and of methylene blue in hepatic disease are totally different from those obtaining normally, and especially from those found in subjects with renal changes. The author concludes that the liver must have some special effect upon renal elimination, and thus Chauffard's hypothesis is confirmed.

2. **A Special Enzyme in the Urine of Nephritics.**—Primavera, in this preliminary note, announces that he has found constantly an oxidase known as "katalase" in the urine of persons with Bright's disease. Carrière some months ago wrote a monograph on the presence of oxidases in normal tissues and fluids. Battelli and Stern have published a series of articles upon the presence of a ferment, katalase in the liver, the kidneys, and the blood. This katalase is set free in the body, but does not pass through the normal kidney. It occurred to Primavera that possibly katalase may be excreted through a diseased kidney, as Carrière had found it in the urine of two patients with albuminuria. He not only found katalase in the urine in all cases in which there were albumin and casts, but also in interstitial nephritis, in which there was no albuminuria nor cylindruria. Moreover, he was able to demonstrate the disappearance of katalase in the urine of a patient with pyelonephritis three days after the diseased kidney had been removed. Whether this katalase is of renal origin or whether the ferment exists in the blood is a question still awaiting solution, as is also the question as to whether katalase is found in the urine of other diseases, and whether or not its amount has to do with the degree of nephritis present. The method of extracting the ferment from the urine was as follows: Five c.c. of fresh urine were introduced into one of the ordinary ureometres (Doremus?) and 30 c.c. of Merck's one per cent. solution of hydrogen peroxide were added. The mixture is shaken, and after twenty minutes the amount of oxygen developed is read on the scale. In order to be sure that the reaction is due to katalase, and not to some other substance, the experiment is repeated with boiled urine.

November 24, 1906.

1. On the Influence of Stasis According to Bier's Method Upon the Healing of Wounds in the Articular Cartilages, By M. DONATI and E. DELFINO.
2. Appendicular Pleurisy with Serofibrinous Exudate, By SANTI PELLE.
3. Clinical and Anatomicopathological Observations on Forty-six Cases of Intestinal Obstruction of Intrinsic Origin, By LUCA FIORAVANTI.

1. **Bier's Stasis in Healing Wounded Cartilages.**—Donati and Delfino studied the action of Bier's method on the process of healing in cartilage. They found that Bier's stasis is a powerful stimulant to the healing process in cartilage. After from fifty to seventy days, when repair on the control side has scarcely begun the joint which was exposed to Bier's method showed a stage of healing corresponding ordinarily to that seen at three to six months after the operation. This action of stasis is to be attributed partly to the effect of an increased blood supply, and hence an increased nutrition of the parts; but also to the active hyperæmia, which is produced when the bandages are removed, and the noteworthy rise in local temperature which takes place during the experiment, especially during the periods of active hyperæmia. Temperature has, indeed, much to do with the rapidity of regeneration. Fasoli has even noted that the process of cartilaginous repair takes place more rapidly in the summer than in winter.

2. **Pleurisy Complicating Appendicitis.**—Barba reports two cases with diagnoses indicated in his title. The subject was discussed by Dieulafoy at the Academy of Medicine in Paris in 1900. The germs from the appendiceal cavity pass to the peritoneum, thence

are carried to the pleura. The appendicitis may spread upward behind the colon, the liver to the diaphragm, and the pleura. The signs of pleurisy usually come on when the appendicitis begins to subside. The prognosis is grave, and the treatment consists in an operation for empyema, which should be promptly performed.

ROUSSKY VRATCH.

November 11, 1906.

1. On Blood Plaques in Acute Infectious Diseases,
By N. I. TCHISTOVITCH.
2. On the Modern Pharmacal Treatment of Heart Disease
(Concluded), By S. V. LEWASCHOFF.
3. The Diagnostic Meaning of Changes in the Urine After
Palpation (Compression) of the Kidney (To be con-
cluded), By E. A. ZHERBOWSKI.
4. An Attempt to Study the Metabolism of Iron in Nurs-
lings (To be continued), By N. I. KRASNOGORSKI.

1. **On Blood Plaques in Acute Infectious Diseases.**—Tchistovitch found at the acme of the fever a decreased number of blood plaques in measles, pneumonia, erysipelas, smallpox, membranous tonsillitis, and diphtheria. When the fever subsides and the disease begins to recede the number of plaques again increases. In scarlet fever the number of plaques is diminished only for a short time and the subsequent increase is well marked. In the presence of complications (otitis, etc.) in scarlet fever the number of plaques is temporarily diminished. In diphtheria the decrease in the number of plaques is very great and protracted. No appreciable effect was produced on the number of plaques by injections of antistreptococcus or antidiphtheritic serum. No relation seemed to exist between the number of plaques and the number of white cells, nor the number of red cells. The author concludes that in infectious diseases there is a reaction by the organism in the shape of a decreased number of plaques, which later disappears when the infection is about to recede. The plaques, therefore, have a rôle to play in the defense of the organism against infection. They probably carry some protective substance. This theory is confirmed by the recent experiments of Wright, who found that the blood plaques are manufactured in the spleen and the bone marrow from mononuclear giant cells—megakaryocytes. As we know the blood making organs are sources of defensive substances, especially the bone marrow.

November 18, 1906.

1. In Memory of Liof Vassilyevich Popoff (Popow),
By N. J. TCHISTOVICH.
2. Materials for a Study of Tuberculous Affections of the
(Esophagus and the Stomach (To be concluded),
By SERGEI GROUSDIEFF.
3. On the Question as to the Uniform Character of Casein,
By B. I. SLOVTSOFF.
4. On the Diagnostic Significance of the Changes Occur-
ring in the Urine During Palpation (Compression)
of the Kidneys (Concluded),
By E. A. ZHERBOWSKI.
5. On the Influence of Spermin Upon the Blood Supply
of the Heart in Warm Blooded Animals,
By N. A. PROZHANSKI.

3. **The Nature of Casein.**—Slovtsoff studies casein with reference to its chemical nature, and asks whether it is always a single variety of proteids that is known as casein. His experiments lead him to regard casein as a mixture of two distinct proteids which have a very similar molecular composition. In all probability casein contains a certain amount of albumose, an idea which was first expressed by Danilefski and Radenhausen. These authors thought that casein consists of two substances, one of which is soluble in alcohol of forty or fifty per cent. strength.

4. **Diagnostic Value of the Urine After Renal Palpation.**—Zherbowski examined the urine in thirty-eight patients after palpating their kidneys. In this way he

not only succeeded in evoking an albuminuria (palpatory albuminuria) in all cases, while in some he could produce a distinct difference in the urinary sediment obtained after palpation, as compared to that seen before this act. Palpatory albuminuria is a constant phenomenon, but is minimal in normal kidneys, while it is more marked in diseased kidneys. This point alone is valuable in the diagnosis of abdominal tumors by palpation. Whenever on palpation the albuminuria is such that a measurable amount of albumin is passed, as determined by Brandberg's method, we have to deal with a pathological condition of the kidney. There exists also a certain parallelism between the amount of palpatory albumin and the changes in the amount or character of the urinary sediment resulting on palpation. In some cases the sediment after palpation reveals pathological processes which were hidden, so far as the urine was concerned, before palpation. The absence of any change in the sediment after palpating a kidney, on the other hand, means that this kidney is healthy. Palpation, followed by an examination of the urine, therefore offers an important aid to the diagnosis of renal affections, in cases in which the kidney is accessible to palpation.

5. **Spermin as a Means of Influencing the Blood Supply of the Heart.**—Prozhanski's article deals with some experiments upon animals intended to show that Poehl's spermin increases the volume of the blood stream supplying the heart, thus increasing the "co-efficient of blood supply of the heart." Spermin acts more energetically in this respect than the testicular emulsion of Brown-Séquard. The action of spermin depends upon its specific effect on the smooth muscle fibres of the vascular system of the heart, and is almost independent of the muscular tone of the heart muscle and of the heart's action itself. Spermin acts but faintly upon normal hearts, but more markedly upon weakened hearts. The author concludes that spermin should be used therefore in cases of diseased heart muscle and in autointoxications which give rise to a spasmodic narrowing of the cardiac vessels.

THE JOURNAL OF NERVOUS AND MENTAL DISEASE.

December, 1906.

1. The Relation of School Work to the Mental Fatigue
of Children, By B. SACHS.
2. A Definite Clinical Variety of Cerebral Arteriosclerosis,
By JOSEPH COLLINS.
3. The Vision Fields in Cases of Indirect or Incomplete
Lesions of the Optic System, By COLIN K. RUSSEL.
4. The Connective Tissue Character of the Septa of the
Spinal Cord as Studied by a New Stain,
By ALFRED REGINALD ALLEN.

1. **The Relation of School Work to the Mental Fatigue of Children.**—Sachs says that the cry is raised that we are overtaxing the child, are cramming him full of knowledge, to the detriment of God given qualities, are retarding his intellectual development instead of furthering it, and are making pitiable creatures of what might otherwise have been the very pride of creation. The author states that he has not seen a single instance of serious injury done to the child's mental development by any influence which the school as such could have exerted, not only in children who attend private schools, but quite as much in those who are educated in the larger public institutions. The clinical symptoms of neurasthenia, the very form of nervous disorder which we should expect if the school were directly responsible for mental fatigue, are rarely encountered in children. The lack of concentration, the headache which comes from an attempt to apply one's self to a given task, the feeling of restlessness and of depression, the pain on the top of the head, and the drawing sensations in the back of the neck—all these symptoms so characteristic of the adult neurasthenia are not met with in the young; and the physical symptoms, the tremor of the hands and the lids, the exag-

generation of the hyperthymic type is associated with one another, are rare in the earlier years of life. Granting that the question of mental fatigue in children has been given undue importance, what are the conditions which give rise to the functional neuroses of childhood? Among the causes responsible for this are the restless spirit of the American home, the examples set by the parents that everything must be done, not well nor even half well, but at least hurriedly. The social ambition that pervades the home, that allows less consideration to be given to the study of the child by the parent, than to the impressions made upon one's neighbors—these are the forces that work for evil. Children are forced early in life to be up and doing in order to get into, and to remain in, the social swim. The inordinate pursuit of athletic sports, with its intense rivalries, the dances, the frequent visits to theatres—all these are responsible for the nervous affections of the young and for such mental fatigue as exists in children. It is the school alone which in our American life exerts that slight restraining and quieting influence which our children need above all else.

2. A Definite Clinical Variety of Cerebral Arteriosclerosis.—Collins gives the following symptoms for cerebral arteriosclerosis: The patient complains of fugitive headache, often referred to the occipital region, of slight giddiness often coupled with a sensation of insecurity of station and gait which, however, is not attributed to giddiness, and of impaired snap or vitality. These symptoms may exist for several months or even years, before other and more striking symptoms call professional attention to the patient. The most striking feature of the disease, however, is the patient's appearance, which becomes immobile. This gives a characteristic attitude and gait, and to a lesser degree, a characteristic physiognomy. The gait is, perhaps, the most remarkable feature of the patient. The stride is short, oftentimes only a few inches, the feet widely separated and not lifted far from the ground, the rhythm of the movement often slow, but sometimes rapid. When the patient turns, he often thrusts out the hands as if to seek support, though he rarely falls. In some instances, perhaps in all, the patient can run better than walk. Mental symptoms may or may not exist. In the majority of cases they are not conspicuous, consisting merely of some depression, indifference, and apathy. When the disease is far advanced, mental symptoms are more common. At first sight the clinical picture reminds one of Parkinson's disease, but on close observation they have only one feature, immobilization, in common. There are no vasomotor symptoms and secretory symptoms, no marked alteration in the pitch of the voice, no characteristic tremor, no festination, or other striking feature of the latter disease. The objective symptoms, aside from those that have been enumerated, are few and inconsequential. The disease is essentially chronic and subject to little variation, save in the amount of headache, giddiness, and apparent emotional manifestation, which are variable. One of the most remarkable features of the disease is the occasional complete absence of visceral and skeletal arteriosclerosis. In such cases the diagnosis would be difficult because of the absence of increased blood pressure, of palpable thickening of the peripheral bloodvessels, and of alteration of the heart sounds, were it not for the fact that the clinical picture which it produces is quite pathognomonic.

THE AMERICAN JOURNAL OF OBSTETRICS.

December, 1906.

1. Acute Pancreatitis, with a Report of Five Cases.
By J. F. ERDMANN.
2. Peritoneal Adhesions.
By R. T. MORRIS.
3. Pubiotomy and Its Relative Indications.
By E. B. MONTGOMERY.

4. The Management of the Breast and Breast Tumors.
By J. B. DODD.
5. The Differential Diagnosis of Splenic and Renal Tumors.
By C. G. CUMSTON.
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7. The Management of the Breast and Breast Tumors.
By J. B. DODD.
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11. The Management of the Breast and Breast Tumors.
By J. B. DODD.
12. The Management of the Breast and Breast Tumors.
By J. B. DODD.
13. The Management of the Breast and Breast Tumors.
By J. B. DODD.
14. The Management of the Breast and Breast Tumors.
By J. B. DODD.
15. The Management of the Breast and Breast Tumors.
By J. B. DODD.

1. Acute Pancreatitis.—Erdmann believes that the chemical analyses in this disease are frequently misleading. Such analyses relate chiefly to the feces and urine. They also consume much time that is of the utmost importance to the patient. The infecting elements which cause the disease are conveyed to the pancreas through the duct of Wirsung. Other causative factors are traumatism, alcoholism, and arteriofibrosis. The symptoms are sharp pain, with varying degrees of shock, rapidly followed by toxæmia, which is manifested by cyanosis and lividity with shallow breathing and rapid pulse. Subsequently the symptoms are those which are usual in peritonitis, together with the formation of a tumor. In an exploratory operation if one finds bloody broth-like serum, or warty yellowish white plaques upon the omentum or mesentery, the search should be extended to the pancreas. If this organ is found enlarged by hæmorrhage, its peritonæum should be incised and the organ itself punctured, drains being then properly located. Drainage should be provided for with especial care if the condition is a gangrenous or suppurative one.

3. Pubiotomy.—Montgomery states that this operation is a distinct improvement upon symphyseotomy. It was proposed as a substitute for the latter by Gigli, in 1894, and consists of a linear osteotomy through the pubic bone at a point where the soft parts will suffer less damage than by symphyseotomy, while the pelvic enlargement will be quite as advantageous. It also obviates the lack of union which frequently follows symphyseotomy, and the defective gait. Furthermore, it exposes the patient to the minimum of risk of injury of the clitoris and the urinary bladder. Its mortality in two hundred collected cases was *nil* in those which were aseptic prior to operation. Symphyseotomy in recent statistics has ten to eleven per cent. of mortality, and thirty per cent. of morbidity. It is believed that it should replace craniotomy on the living child and the induction of premature labor. The author believes that it has won a permanent place among obstetric operations, and will soon be used as frequently in this country as in Europe, in proper cases.

6. The Differential Diagnosis of Splenic and Renal Tumors.—Cumston states that neoplasms of the spleen will not respond to ballottement, as they are never in contact with the lumbar region. Palpation may, however, yield a sensation of friction. Renal tumors are frequently round in shape, usually retain their lumbo-abdominal position, and respond to ballottement. This sign must be corroborated by other evidences of renal tumor. A renal tumor of the left side will yield a tympanitic note on percussion, being overlaid by the descending colon, if the colon is not collapsed. A tympanitic note is sometimes present with a splenic tumor, and usually indicates the greater cul-de-sac of the stomach and the angle of the colon. Puncture of the growth will rarely allow one to diagnosticate its origin, though it will indicate whether it is solid or cystic. Pain is a frequent concomitant of either variety of tumor. The

splenic tumor is more apt to push the diaphragm upward and cause dyspnoea, than is the renal; it also gives rise to digestive disturbances, while the renal tumor by compression of the vena cava will often cause oedema of the lower limbs. To complete the diagnosis one must also investigate the liver and the peripheral lymphatics, which are enlarged coincidently with enlargement of the spleen.

9. **Induced Labor as a Conservative Operation in Contracted Pelves.**—Morse divides labors into three classes, (1) those in which the natural powers suffice, (2) those in which forceps or version is required, (3) those in which an operation or the induction of premature labor is required. Forceps and version having been found insufficient in a given case, there remain Cæsarean section and craniotomy. The latter is most undesirable upon a living child, and the former is beyond the skill and opportunities of the average obstetrician. The alternative, to obtain a living child, is the induction of premature labor. This should imply, on the part of the obstetrician, a knowledge of the period of gestation, of the characteristics of the maternal pelvis, and of the foetal head. Being sure of the viability of the foetus labor can be induced when it is apparent that further delay would be dangerous. The author believes that the best pelvimetre is the hand.

Letters to the Editors.

THE WORD PHRENITIS.

126 EAST TWENTY-NINTH STREET,

NEW YORK, December 24, 1906.

To the Editors: Dr. B. M. Randolph, by his letters on the word phrenitis in the *New York Medical Journal* of October 27th and December 22nd, has rendered great service to the cause of reform to onomatology. He has demonstrated the existing spirit of misocainia. Although he, adopting the way of the German Emperor, *sic volo, sic jubeo*, such is my will and so I command (or we may translate: instead of all reasons shall govern my will), he has in reality expressed the opinions of many who are opposed to progress in regard to medical language. Such opposition is generally the proof of the soundness of a new idea. If there had been no opposition these twelve years since the onomatology question has been raised, it could not have become and remained a standing matter in medical journals of all languages of the civilized world. I sincerely hope, nay I am firmly convinced, that Dr. Randolph will himself become a friend of the movement and a strong aid besides, that he will say, with the great Gregorius: *ἡγήμαι καὶ τὴν ἑγὼν ὁμολογῶ*, Dr. Randolph in his letters, although contrary to his intention, has demonstrated to perfection the necessity of onomatological reform.

A. ROSE.

THE TREATMENT OF SUPPURATIVE PERITONITIS DIFFUSA FOLLOWING APPENDICITIS.

MERIDIAN, MISS., December 14, 1906.

To the Editors: I notice an article in your *Journal* (Current Literature Department) that will gain recognition and go down in the annals of abdominal surgery. After full trial, if it is found to be as successful in saving life in these desperate cases as I think it will be, the author should be given a niche in the Temple of Fame, as much so as the inventor of ovariectomy, O'Dwyer's tubes, etc. It is evident that the profession has not caught on to the treatment of these cases, because the mortality in skilful (?) hands must be large. They have been groping in the dark. I refer to the article of

Torek on the treatment of diffuse suppurative peritonitis.

I had thought of the same plan myself, before seeing his article, but he has brought it out ahead of me. His plan is to make a long incision in the median line, let out the pus or mop it out, then operate on the appendix, then flush the abdomen with large quantities of normal salt solution, and close it without drainage. His plan has been so successful that I hesitate to offer any suggestions; however, I suggest that some experiments should be tried with a normal salt solution made alkaline with sodium bicarbonate. Theoretically, this will help to cleanse the peritonæum, and I hardly think it would irritate. Use a large rubber tube connected with a pump or aspirator to withdraw the normal salt solution, pus, debris, etc., from the abdomen; the end of the tube that is in the abdomen should be protected with a shield of wire covered with gauze, in order to prevent injury to the intestines. In these cases there is often no appendix to remove. Then I should adopt the plan of Dr. Deaver, of Philadelphia, viz., find the hole in the bowel left by the sloughing appendix, pare the edges, and sew it up. After cleansing the abdomen with the alkaline normal salt solution, then follow it with simple normal salt solution, then close the wound.

J. M. WHITE.

Proceedings of Societies.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Meeting of September 6, 1906.

The President, Dr. WILMER KRUSEN, in the Chair.

Malignant Disease of the Ovary.—Dr. H. A. DUNCAN read a paper on this subject (see page 12 of this issue).

Dr. C. C. NORRIS said that he had, in his recent papers, thoroughly covered the statistics of these tumors. The proportion of malignancy in solid tumors was given as small. Most of these were purely fibroma or spindle celled sarcoma. This reference was not to those partly cystic, but to the solid tumors. The percentage of small round celled sarcoma was also said to be small, and nearly all were bilateral. In prognosis the microscope was of much value. In spindle celled sarcoma the prognosis was said to be fairly good; in small round celled sarcoma it was said to be almost as bad as in adenocarcinoma and much worse than in simple adenopapilloma. The microscope, it was asserted, would many times show a tumor to be benign which from the gross appearance and clinical symptoms had been thought to be malignant. He emphasized very strongly the necessity of microscopical examination of a large number of sections of each tumor.

Dr. SWITHIN CHANDLER expressed surprise at the statistics given by Dr. Duncan, since in fourteen years he had seen in his own practice only two cases of malignancy of the ovary; one in a black woman and one in a white woman. Neither had borne children. In the first case there was a fibroid tumor of the uterus, and the uterus and ovary were removed at the same time. Both were cases of sarcoma. More malignant tumors, proportionately, were brought to the table in Europe than here; whether this was due to the food or to the fact that people there worked harder and did not come so readily for operation, he did not know. Although he had no proof for the statement, he believed that large meat eaters were more prone to cancer than those whose diet was largely vegetable. He did not, however, wish to be regarded as a vegetarian. Regarding the fever in Dr. Duncan's case, he asked whether Dr. Duncan could explain its existence.

Dr. DUNCAN stated that the high temperature upon the day after the operation he would explain by "reaction," while a temperature of 107° on the day of death he would say was caused by "disintegration."

Post Partum Relaxation of the Abdominal Wall.—

Dr. I. THOMSON, Seattle, said that the condition of the abdominal wall following childbirth had been almost neglected and women allowed to leave their beds with relaxed muscles producing protruding abdomens and proptations. Added to this there was often a marked diastasis of the recti, a condition probably equally serious. In all except old multiparae and in badly neglected cases it was maintained that a few simple Swedish movements combined with massage would in a majority of cases bring about a marked improvement. No bandage was needed in the treatment, although it was recommended during the first twenty-four to forty-eight hours for the comfort afforded, and as an aid in the restoration of the intraabdominal blood pressure. The treatment was advised to be carried out three times a day for the entire time that the patient stayed in bed, and continued twice daily for a month after she left the bed. Great exhaustion, septic infection, and excessive post partum hæmorrhage were contraindications. During convalescence from any puerperal complication the treatment would be found particularly useful in muscular relaxation following such complication.

Dr. J. S. BAER agreed to the conclusions of the paper and thought the fact was often overlooked that after the puerperium and in later periods the treatment was of value in strengthening the muscles.

Dr. ALICE M. SEABROOKE recalled some similar work she had seen done some time previous which had been termed physiological movements for diastasis of the muscles. This had been given some time after the puerperium.

The PRESIDENT inquired whether there was difficulty in having the patients practise the treatment. He had knowledge of the value of the method in cases of protuberant abdomens due to fatty deposit, but had not seen the application of the method following labor. He also inquired whether there was any effect upon constipation.

Dr. SCHELL spoke of the surprisingly large number of such cases he had observed since being interested in the subject. The method was regarded as simple and easy of application, and he had had no difficulty in using it with very poor people. He could say with certainty that these women left their beds with abdomens giving them no discomfort. He referred to Ashton's emphasis upon the importance of strong abdominal muscles, which lessened the danger of malpositions in the pelvis.

Meeting of October 4, 1906.

The President, Dr. WILMER KRUSEN, in the Chair.

The Nonabsorbable Ligature in Pelvic Surgery.—

Dr. FRANK C. HAMMOND thought it should not be considered a sound surgical practice to tie masses of tissue with heavy nonabsorbable silk if catgut could be obtained. The ideal ligature should consist of material capable of keeping the tissues in contact, sufficiently strong to enable the tissues to proliferate and effect a living union of the parts, and that after the accomplishment of this the material ought to become eliminated without disturbance of the parts. The dangers of the nonabsorbable ligature were detailed. Three cases from the service of Dr. Wilmer Krusen at the Samaritan Hospital, in which operations had been done at other institutions, were cited to illustrate the dangers of silk. In one case three loops of silk were removed from each side of the uterus. In another case two loops of silk were removed from the left broad ligament stump. The abdominal sinuses had persisted in the two cases for one and two years, respectively. In the third case the woman had passed by the urethra a "nest" of silk ligatures, encrusted with urinary salts, several months subsequent to an operation for supravaginal hysterectomy.

the author.

Dr. F. H. MAIER compared the present work with that of some years ago, when in the dispensaries it was

have the patient return months or years afterward with abscesses or inflammatory masses in the broad ligament or sinuses for a secondary operation.

Dr. L. J. HAMMOND thought the ideal ligature had not yet been found. Catgut in the abdominal cavity might form one of the most fruitful culture media, and he hesitated to use it when all pyogenic conditions had not been removed. In the presence of pyogenic conditions, should further suppurative processes develop, an insoluble substance like fine silk furnished a sort of drain; also its presence as a foreign body might produce sufficient irritation to be quickly walled off. Another advantage was its greater security against slipping.

Dr. A. B. BAIRD, of Oklahoma, had used both silk and catgut, with probably better results in the use of the animal tissue. He thought, however, there were well founded objections against the catgut which had not yet been overcome.

Dr. BARTON COOKE HIRST had twice changed his practice in regard to suture material; at first using nothing but silk, then nothing but catgut. Except in suspension of the uterus and in intestinal work, for which Pagenstecher's thread was employed, he used catgut exclusively, since it was now possible to make it absolutely sterile and also to preserve its tensile strength. It did not break, and there were no abdominal sinuses from its use.

Dr. H. D. BEYEA agreed in part as to the advantages alleged for catgut, but believed it had the disadvantage, as compared with silk, of greatly increasing the danger of hæmorrhage. He pointed out that the ties could never be so sure as with silk, and the necessity of making two ties or more on important bloodvessels constricted a large area of tissue. Silk had given him practically no trouble. He did, however, see cases of persistent fistulæ caused by silk ligatures.

Dr. CHARLES P. NOBLE had abandoned silk in abdominal surgery ten years ago. As disadvantages of silk he mentioned the occurrence of sinuses and painful stumps due to infection lodged in a ligature. He agreed, however, with Dr. Beyea that with care and intelligence the disadvantages of silk could be reduced to a minimum. He still used silk in intestinal surgery and in the operation of hysterorrhaphy, although he believed that catgut could well be substituted in most of these operations. In sinuses resulting from the use of silk he did not operate, but used a hook of his own device, similar to a crochet hook with a long handle, with which he fished for the ligature and withdrew it. He had had no trouble with the catgut, and it was sterilized by the cumol method. To prevent too ready absorption of the catgut, it was first chromicized and then sterilized by the cumol method. He had not seen secondary hæmorrhage from the use of catgut and had had no reason to believe that it had ever caused infection.

Dr. BROOKE M. ANSPACH stated that at the University Hospital formaldehyde-cumol catgut was used, the gut being soaked in ten per cent. formaldehyde solution for twenty-four hours, washed and dried, and then cumolized in the usual way. The plan of the manufacturers had been adopted of storing the rings of catgut in a double envelope. The catgut was placed in the envelope before being cumolized, and the entire package subjected to the cumol process. At the time of operation the nurse tore off the outer envelope and the inner one was removed by an assistant. This provided an easy method of transportation and protection against contamination.

Dr. HAMMOND referred to the tendency of the gen-

eral surgeon to the use of the nonabsorbable ligatures and of the gynecologists to the use of absorbable material.

Relaxation and Atony of the Nonpuerperal Uterus Incident to Dilatation and Curetting.—Dr. F. H. MAIER described the process of relaxation of the uterus with the coincident enlargement of the cavity during dilatation and curetting. He also cited a number of cases of complete loss of tone in nonpuerperal uteri during the performance of this operation, and pointed out the increased danger of perforation at this time. Mention was also made of the injustice that might be done to the patient when atony was mistaken for perforation, if an operation begun for the relief of a definite train of symptoms was left unfinished. Van Tussenbroek's interpretation of the phenomenon was given. The author was in accord with Kossmann, Schaeffer, and Van Tussenbroek as to the possibility of the occurrence of atony in the nonpuerperal uterus, and was inclined to think that it took place only in the presence of some pathological condition of the walls.

Dr. CHARLES P. NOBLE thought that if the nonpuerperal uterus could relax, knowledge of the fact was important, and he felt that the society was under obligation to Dr. Maier for his mention of the subject. It had happened in his practice a number of times that the curette had passed through the external os to the length of some inches, which had led to the belief that the uterus had been perforated, and he thought it possible that such explanation was not always correct. A case was mentioned in which this had happened and in which at a subsequent hysterorrhaphy no evidence of perforation could be found. It was suggested that the relaxation of the uterus was responsible for the incident.

Dr. JOHN M. FISHER recalled a case in which he had dilated the uterus with bougies and had subsequently curetted, when he felt that the curette had entered the uterus at a greater depth than he thought it should. Abdominal section had not revealed perforation of the uterus, and he concluded that the case was one of relaxed uterus incident to the curetting.

Dr. STEPHEN E. TRACY referred to recorded cases in which the instrument had passed to a much greater depth than the cavity of the uterus measured. In many instances the abdomen was opened and no perforation found. That the instrument had passed into the Fallopian tube was an explanation offered by some of the writers. Dr. Tracy thought the explanation given by Dr. Maier probably a better one.

Meeting of November 1, 1906.

The President, Dr. WILMER KRUSEN, in the Chair.

Breus's Hæmatoma Mole.—Dr. ALICE WELD TALANT presented a specimen of this mole from a case of abortion, probably at full four months, in a multipara with a history of two previous abortions. The case differed in no way from the ordinary complete abortion. The mole measured 8.5 by 6.5 cm., the fœtus 1.5 cm., and the cord less than 2 cm. The fœtus was not curved. It showed well formed limb buds, and the eyes and mouth were plainly visible. It was thought to be possibly of six weeks' growth. On the inner surface the membranes were thrown into folds, forming sacs of varying size, all of which were more or less filled with clotted blood. Some were lobulated. The mole corresponded closely to those described by Breus, although expelled at a period earlier than any of his. The author detailed the several theories of the ætiology of the condition.

Inversion of the Uterus in a Primipara of Thirty Years.—Dr. A. HEWSON reported this case. The distended bladder was drawn into the inversion. Reduc-

tion under ether was attempted, but failed. A second attempt some hours later was successful in forty-five minutes. During this reduction a continuous stream of urine was evacuated, and subsequently eighteen and twenty-three ounces of urine were removed with the catheter. There was laceration on the ventrolateral wall of the vagina, with protrusion of a knuckle of intestine. There was some evidence of peritonitis, but the patient recovered and was discharged within one month of her delivery. She was still living and well.

Dr. JOHN C. DACOSTA recalled a case seen in the Jefferson Hospital in which the whole vagina was filled by a large tumor resembling an inverted uterus. The womb was outlined above the tumor, and a fine probe passed finally showed an opening which proved to be the os uteri. Nothing but bimanual examination would have shown the condition. In a similar case in a woman of sixty-eight palpation showed a fibroid. There was inversion of the uterus due to attachment of the fibroid to the fundus of the uterus by a pedicle nearly two inches in diameter. There was considerable hæmorrhage, which a stitch or two stopped, and the inversion was cured without difficulty. Inversion following labor was in Dr. DaCosta's opinion not so readily corrected. In some cases the only thing to do was to amputate and to remember the attachment of the bladder to the neck of the uterus and the possibility of the bladder being in the inverted uterus.

Dr. ALEXANDER H. DAVISSON had had no experience with inversion of the uterus, but spoke upon traction of the cord in the extraction of the afterbirth. Reference was made to an article of recent date in which the author said he did not use rubber gloves, because they prevented him from "making traction upon the cord easily."

Dr. MARY GRISCOM raised the question of whether or not in the three days' labor the bladder might not have been full and partly the cause of the inversion. She had been able to stop hæmorrhage very quickly by emptying the bladder. She had seen cases similar to those mentioned by Dr. DaCosta due to a fibroid in the body of the uterus. In one case occurring after delivery the uterus was replaced by abdominal section several years afterward.

Dr. F. H. MAIER recalled a case of inversion in which reduction was accomplished by an operation a week subsequently. He thought Dr. Griscom's remarks concerning the return of the uterus after some years were of special interest because of the change in the uterine musculature which rendered replacement difficult.

Dr. SWITHIN CHANDLER inquired whether the constipation observed before the inversion had been corrected before or after the inversion, and whether the replacement had anything to do with the intestinal condition. He spoke of the importance of emptying the bladder in the delivery of a woman. He thought traction on the cord as a cause of inversion was greatly exaggerated.

Dr. FRANK C. HAMMOND recounted a case of inversion brought about by the improper application of the Credé method of expelling the placenta. As soon as the physician realized what had happened he slipped the placenta off of the inverted fundus, which was readily replaced to a normal position.

Dr. HEWSON thought that in the case reported traction upon the cord was not the cause of the inversion, but the inversion was due to violent muscular contraction of the abdominal muscles and the relaxed condition of the parts about the uterus because of the rapid increase of fat. It should also be remembered that one part of the uterus might contract and another part might not.

New Inventions.

AERATED DRINKING WATER.

By J. P. REMINGTON, JR., B. S., P. D.,
Philadelphia.

Much attention has been paid in the last few years to the necessity of higher standards of purity in food, and the stringent laws which have been passed indicate the earnestness of the reform movement in this direction.

It may safely be said, however, that far more harm is caused by impure drinking water than by impure food, and when it is considered that a much larger quantity of water than of food is consumed daily by any one person, and that the danger of infection is greatly increased by the fact that we do not commonly cook our drinking water as we do our food, the ques-



tion of a pure water supply for each individual or family is an important one.

There are very few cities in which the public water supply is sufficiently free from germs and suspended matter to be used for drinking purposes, and the habit of boiling the water, using filters, or buying boiled drinking water is becoming more widely adopted every day.

In every household at some time the problem arises as to what means shall be adopted to secure safety from the dangers of typhoid and other diseases. Those who are cautious use boiled water, and if they are particular they filter it also, but they do not always obtain absolute safety by this means, because such a process does not remove the soluble toxins produced by bacterial action. Boiled water is, moreover, flat and insipid.

A consideration of these facts has led the writer to advocate the use of distilled water for household use, and his experiments with distilling apparatus have proved conclusively that it is possible to satisfactorily produce and aerate the water in a small household automatic still which a servant can operate.

A cut of such a still is here shown. Its operation is extremely simple; cold water from the spigot is admitted at the bottom of the condenser and, circulating around the inner tube of the condenser, finds its way into the boiler, where it is converted into steam by the attached Bunsen burner. This steam passes out into the condenser again and, on entering the cooler portion of the inner tube, is condensed and flows out into a bottle or other receptacle.

By an ingenious aerating device consisting of the condenser and boiler shown at the top of the condenser, air is absorbed by the steam as it condenses, and the product is a distilled water containing the natural amount of air in solution.

It is maintained that greater safety is secured by a simple apparatus in each household for making fresh aerated distilled water for the daily supply, as there is less chance for contamination, and that from the standpoint of palatability, cheapness, and convenience, no other drinking water supply is so satisfactory.

Book Notices.

The Diseases of Women. A Handbook for Students and Practitioners. By J. BLAND-SUTTON, F. R. C. S. Eng., Surgeon to the Middlesex Hospital and Senior Surgeon to the Chelsea Hospital for Women, and ARTHUR E. GILES, M. D., etc., Surgeon to the Chelsea Hospital for Women, etc. Fifth Edition, with 129 Illustrations. London: Rebman Limited; New York: Rebman Company, 1906. Pp. viii-536. (Price, \$3.25.)

In the preface to this edition the authors say: "We still believe that when surgical authors are able to restrain their vanity, and refrain from publishing notes of successful cases in textbooks, the established facts of the art can be presented in a very convenient compass." Their book certainly covers the field fairly well, and it remains a small volume, but we think that with a trifling expansion it could have been made to contain certain little matters of history that would have proved acceptable to the reader and have done justice to those to whom we owe "the established facts." We find no mention, for example, of Emmet's name in connection with laceration of the cervix uteri, and we have not found Sims's name save in association with his speculum and the posture in which the patient is placed for its use. On the other hand, there are several references to Mr. Bland-Sutton's writings.

In this edition much new matter has been introduced in relation to chorioepithelioma, extrauterine gestation, and tumors of the ovary, and there is an entirely new section on metastatic cancer of the ovary. The chapter on chorioepithelioma is an admirable summary of our present knowledge of the important subject of syncytioma. Extrauterine gestation, too, is treated of very satisfactorily, but we note in it this rather staggering statement: "All intelligent individuals now know that the ovum, when mature, escapes from its follicle and falls into the coelomic (abdominal) ostium," etc. We wonder how many of the world's population could stand a test of "intelligence" based on such a knowledge of embryology.

Mr. Bland-Sutton has written in a very illuminating manner on the "secondary sexual characteristics," but the following seems to be a slip: "In man the front of the chest is usually covered with hair, and that on the pubes passes upward to the umbilicus, whereas in the female it is restricted to the mons Veneris." This error, however, is corrected on a preceding page in the statement that "the outer surfaces of the labia are beset with hairs and glands."

Writing of tetanus as a complication after ovariectomy and oophorectomy, the authors say: "Ovariectomy should not be performed in rooms recently plastered." We decidedly agree to the proposition, but we think it might have been well to point out its special connection with tetanus.

Beginning on page 424 there are two chapters on diagnosis—gynecological diagnosis in general—preceded by a chapter on dyspareunia and sterility, and followed by the concluding chapters of the book, on gynecological operations. We are unable to see why it

would not have been more conducive to continuity of teaching to consider the general subject of diagnosis in an earlier part of the book, along with the chapter on methods of examination. The pictorial illustrations are suitable for the most part, but the legends of Figs. 13 and 14 (page 45) appear to have been transposed.

We have thus pointed out certain defects in the book, as they seem to us, but as a whole it is well worthy to hold the place which in previous editions it has taken in the esteem of the profession.

The Influence of the Menstrual Function on Certain Diseases of the Skin. By L. DUNCAN BULKLEY, A. M., M. D., Physician to the New York Skin and Cancer Hospital, Consulting Physician to the New York Hospital, etc. New York: Rebman Company, 1906. Pp. x-108. (Price, \$1.)

In this little volume Dr. Bulkley again delves in the "true inwardness" of skin diseases. He has long ago been struck by the fact that uterine and ovarian diseases have an apparent influence on the causation of skin diseases, and he goes over the literature of the subject, presenting a complete bibliography, and develops the knowledge which he has acquired by the clinical observation and study of ninety-one cognate cases. This material, enriched with the salient features of all recorded cases, makes a large source from which to draw conclusions. The following skin diseases which occur or undergo exacerbation during the menstrual epoch have been observed by the author: Acne, eczema, herpes, pemphigus, dermatitis herpetiformis, papular eruptions, urticaria, oedema and cutaneous nodes, erythema, erysipelas, ecchymoses and purpura, pruritus, psoriasis and dermatitis seborrhœica, hyperidrosis, chloasma and melanoderma, furunculosis and abscess, syphilis, lupus, epithelioma, scleroderma and morphœa, alopecia areata, hypertrichosis, and various other minor unclassified affections.

An analysis of the *res gesta* of the book seems to warrant the belief that the following conditions are ætiologically potent: Cyclic changes in the general system; autointoxication of genital origin; and nervous reflex irritation from the congested condition of the uterus and ovaries. In the matter of treatment, the advice of Dr. Bulkley is very perspicacious. He thinks that local therapy should be judiciously employed, but that it should not be the chief element. He says that "the menstrual influence on the eruption is only the result of some derangement farther back in the life processes of the body, which must be reached if any treatment is to be effectual." He lays stress on the necessity for intelligent effort to relieve gastric disorders, liver derangements, and disturbances in the kidney functions and of the metabolic processes. Many causes must be searched out and rectified; in fact, every case must be studied on its merits and suitable treatment, dietetic, hygienic, and medicinal, instituted.

The book is really a pathfinder; it suggests more than it elaborates; it clearly indicates the necessity for further extended and careful study. Many points brought out in it are yet obscure, but the impetus imparted by Dr. Bulkley's admirable studies will later on be productive of more precise scientific knowledge. The book should be carefully read and its teachings and adumbrations should be pondered over and further elaborated.

A Compend of Genitourinary Diseases and Syphilis, Including Their Surgery and Treatment. By CHARLES S. HIRSCH, M. D., Assistant in the Genitourinary Surgical Department, Jefferson Medical College Hospital. Illustrated. Philadelphia: P. Blakiston's Son & Co., 1906. Pp. 351. (Price, \$1.)

The author of this volume, which forms one of a well known series of quiz compends, has accomplished his task most creditably. The book is a very practical,

quite complete, and thoroughly up to date epitome of genitourinary and venereal diseases. Though naturally very condensed, it gives precise and trustworthy directions for the treatment of all the more common conditions, and describes tersely but quite sufficiently the more common operations (circumcision, urethrotomy, etc.), so that each step appears clearly before the student's mind. An excellent little formulary of useful prescriptions is given in an appendix, and for those who still insist upon the "quiz" feature, now obsolete, there is a list of 101 questions covering the entire subject. A few typographical errors have unfortunately been overlooked, as on p. 113, where Gouley's operation is spoken of as one performed *without* a guide.

Des Haarschwunds Ursachen und Behandlung. Von Dr. S. JESSNER. Fünfte Auflage. Würzburg: A. Stuber, 1906. Pp. 52.

Kosmetische Hautleiden. Von Dr. S. JESSNER. Würzburg: A. Stuber, 1907. Pp. 124.

For a number of years Dr. Jessner, of Königsberg, Prussia, has been publishing a series of brochures on dermatological topics. He has not attempted to make exhaustive presentations of the various subjects, but to give his personal opinions founded on his own experience. Therefore he calls them "lectures." The two now before us are the first (on loss of hair) and the latest (cosmetic skin diseases) of the series. The popularity of the series is shown by the fact that the one on loss of hair is in its fifth edition.

The matter is presented in a very practical and lucid manner, and as fully as that much talked of individual, "the general practitioner," needs. The author's methods of treatment are stated clearly, and those of others referred to briefly. The greatest fault we would find with the treatment is the often prescribed "Mitin," which seems to be a private formula of the author's, of which he is specially fond. Apart from this, his treatment is judicious and in accordance with the principles in vogue with the leading authorities.

Under cosmetic skin diseases are included those that produce defects in good looks, such as acne, alopecia, callosities, canities, hirsuties, rosacea, and warts. From Germany have issued not a few books on cosmetics, but this book does not belong in their class, as it is a scientific, not a popular treatise.

It is to be wished that it were possible to publish in this country a series of books such as this, at so low a price, fifteen cents for the first and fifty cents for the second. They would be a boon to the busy doctor, as he could put them in his pocket and read them while on his rounds.

BOOKS, PAMPHLETS, ETC., RECEIVED.

The Diseases of the Nose, Throat, and Ear. By Charles Prevost Grayson, A. M., M. D., Clinical Professor of Laryngology in the Medical Department of the University of Pennsylvania; Laryngologist and Otologist to the Philadelphia Hospital. Second Edition, Revised and Enlarged. Illustrated with 152 Engravings and 15 Plates in Colors and Monochrome. Philadelphia: Lea Brothers & Co., 1906.

Woman. A Treatise on the Normal and Pathological Emotions of Feminine Love. By Bernard S. Talmey, M. D., Gynecologist to the Metropolitan Hospital and Dispensary. For Physicians and Students of Medicine. New York: The Stanley Press Corporation, 1906.

Untersuchungen über Muskelzustände. Von Professor Rieger. Begrüssungs-Schrift dem zweiten Kongress für experimentelle Psychologie (Würzburg, April, 1906) dargebracht von der psychiatrischen Klinik der Universität Würzburg. Jena: Gustav Fischer, 1906.

Hygiene. By J. Lane Notter, M. A., M. D., Examiner in Public Health to the Universities of Cambridge, Manchester, and Liverpool, etc., and R. H. Firth, Lieutenant Colonel in the Royal Army Medical Corps, Professor of Hygiene in the Royal Army Medical College, etc. Sixth Edition. London: Longmans, Green, & Co., 1905.

- CARTER, WILLIAM F., Major and Surgeon. Returned to Fort Monroe, Va., from leave of absence.
- HALL, JAMES F., Captain and Assistant Surgeon. Granted leave of absence for one month.
- HAVARD, VALERY, Colonel and Assistant Surgeon General. Relieved from duty as chief surgeon, Army of Cuban Pacification, and ordered to return to his duties in the office of the surgeon general of the Army.
- HEARD, GEORGE P., Captain and Assistant Surgeon. Granted leave of absence for one month, with permission to apply for an extension of three months.
- McCULLOUGH, CHAMPE C., JR., Major and Surgeon. Relieved from duty at Fort Meade, S. Dak., and ordered to Washington, D. C., to report to the Isthmian Canal Commission for duty in the Isthmus of Panama.
- NEWGARDEN, GEORGE J., Major and Surgeon. Ordered for duty at Fort D. A. Russell, Wyo., suspended; ordered to Army General Hospital, Washington Barracks, D. C., for observation and treatment.
- TAYLOR, BLAIR D., Lieutenant Colonel and Deputy Surgeon General. Now at Havana, Cuba, ordered to duty as chief surgeon, Army of Cuban Pacification.
- WHITMORE, EUGENE R., First Lieutenant and Assistant Surgeon. Returned to Fort Jay, N. Y., from temporary duty at Fort Slocum, N. Y.

Navy Intelligence:

Officer List and Changes in the Medical Corps of the United States Navy for the week ending December 29, 1906:

- BERTOLETTE, D. N., Medical Director. Detached from duty in command of the Naval Medical Supply Depot, Navy Yard, New York, N. Y., discharged from treatment at the Naval Hospital at that place, and ordered home to await orders.
- CAMPBELL, F. E., Passed Assistant Surgeon. Commissioned a passed assistant surgeon, with the rank of lieutenant, from October 12, 1906.
- FITZSIMMONS, P., Medical Director. Detached from the Navy Yard, Washington, D. C., and ordered to command in the Naval Medical Supply Depot, Navy Yard, New York.
- GILL, J. E., Passed Assistant Surgeon. Commissioned a passed assistant surgeon, with the rank of lieutenant, from October 12, 1906.
- LUMSDEN, G. P., Medical Inspector. Commissioned a medical inspector, with the rank of commander, from September 6, 1906.
- MEANS, C. V. B., Surgeon. Detached from the Navy Yard, Mare Island, Cal., discharged from treatment at the Naval Hospital at that place, and ordered to the Army and Navy General Hospital, Hot Springs, Ark., for treatment.
- MOORE, J. M., Surgeon. Detached from the *Indiana* and ordered home.
- PERCY, H. T., Surgeon. Ordered to the Navy Yard, Washington, D. C.
- PUGH, W. S., JR., Passed Assistant Surgeon. Commissioned a passed assistant surgeon, with the rank of lieutenant, from September 22, 1906.
- REEVES, I. S. K., JR., Passed Assistant Surgeon. Commissioned a passed assistant surgeon, with the rank of lieutenant, from October 12, 1906.
- TAYLOR, E. C., Passed Assistant Surgeon. Commissioned a passed assistant surgeon, with the rank of lieutenant, from October 12, 1906.

Births, Marriages, and Deaths.

Born.

WEBB.—In Colorado Springs, Colorado, on Wednesday, December 19th, to Dr. Gerald Bertram Webb and Mrs. Webb, a son.

Married.

IRVING MONTGOMERY.—In Philadelphia, on Wednesday, December 19th, Dr. P. Brooke Bland and Miss Susan L. Montgomery, daughter of Dr. and Mrs. E. E. Montgomery.

CHAIN—NOBLIT.—In Philadelphia, on Wednesday, December 19th, Dr. George Chain and Miss Nellie Noblit.

GRISWOLD—MORRELL.—In Lawrenceville, N. Y., on Wednesday, December 26th, Dr. William Loomis Griswold and Miss Caroline Estelle Morrell.

LEWIS—BURTON.—In Frankfort, N. Y., on Tuesday, December 18th, Dr. W. G. Lewis and Miss Minnie Louise Burton.

MAES—ADAMSON.—In Philadelphia, on Wednesday, December 26th, Dr. B. Urban Maes, of New Orleans, and Miss S. Gertrude Adamson.

MORSE—WHITNEY.—In Battle Creek, Michigan, on Wednesday, December 19th, Dr. John F. Morse and Dr. Jean Whitney.

SHAW—DENIG.—In Philadelphia, on Thursday, December 20th, Dr. Harry Shaw, United States Navy, and Miss Grazia Livingston Hubbard Denig.

THWING—DUNNING.—In Auburn, N. Y., on Saturday, December 22d, Dr. Charles F. Thwing, of Cleveland, and Miss Mary Gardiner Dunning.

WHITON—WATT.—In Brooklyn, N. Y., on Thursday, December 27th, Dr. Walter Whiton and Miss Alice Watt.

Died.

BECKWITH.—In New Haven, Connecticut, on Thursday, December 27th, Dr. Frank E. Beckwith, aged fifty-nine years.

BISHOP.—In New Haven, Connecticut, on Wednesday, December 26th, Dr. Timothy H. Bishop, aged seventy years.

BONAR.—In Streator, Illinois, on Saturday, December 22nd, Dr. Barnett L. Bonar, aged fifty-four years.

COOTES.—In Norfolk, Virginia, on Saturday, December 15th, Dr. John Cootes, of Dayton, aged eighty-one years.

DE CAMP.—In Elmira, N. Y., on Saturday, December 22nd, Dr. Frank H. De Camp.

DOBBS.—In Brooklyn, N. Y., on Monday, December 24th, Dr. Edward Thomas Dobbs, aged fifty-four years.

DOUGHTY.—In New York, on Friday, December 28th, Dr. Francis E. Doughty, aged fifty-nine years.

GILES.—In Atlanta, Georgia, on Wednesday, December 26th, Dr. Columbus R. Giles, aged fifty-eight years.

GILLESPIE.—In South Bethlehem, Pennsylvania, on Wednesday, December 19th, Dr. John Gillespie, aged thirty-six years.

HALL.—In Philadelphia, on Monday, December 17th, Dr. William R. Hall.

HENDERSON.—In Cobourg, Ontario, Canada, on Thursday, December 20th, Dr. James Henderson.

HERBST.—In Trexlertown, Pennsylvania, on Saturday, December 22nd, Dr. William Herbst, aged seventy-three years.

HIPP.—In Chicago, on Wednesday, December 19th, Dr. William Harrison Hipp, aged forty-two years.

HUGER.—In Charleston, South Carolina, on Monday, December 17th, Dr. William H. Huger, aged eighty years.

IRWIN.—In West Hebron, N. Y., on Sunday, December 16th, Dr. Samuel B. Irwin, aged sixty-four years.

JUDSON.—In New Haven, Conn., on Monday, December 24th, Dr. Walter Judson, aged eighty-seven years.

MCDONALD.—In Chatham New Brunswick, Canada, on Tuesday, December 18th, Dr. John McDonald, aged fifty-five years.

RYAN.—In Moravia, N. Y., on Tuesday, December 18th, Dr. F. B. Ryan.

SANDERS.—In Cleveland, Ohio, on Saturday, December 22nd, Dr. John C. Sanders, aged eighty-two years.

SHOULTERS.—In Washington, D. C., on Friday, December 14th, Dr. George H. Shoulters, aged fifty-eight years.

STEWART.—In Brooklyn, N. Y., on Monday, December 24th, Dr. William Stewart.

STRODE.—In Martinsburg, West Virginia, on Wednesday, December 19th, Dr. E. L. Strode, aged forty-six years.

WILLIAMS.—In Roanoke, Virginia, on Thursday, December 20th, Dr. W. Clement Williams.

WOLFE.—In Elkton, Virginia, on Tuesday, December 18th, Dr. Joseph H. Wolfe, aged sixty-three years.

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Original Communications.

CERTAIN DISEASES OF THE PERITONÆUM*

By JAMES G. MUMFORD, M. D.,
Boston.

The subject of the peritonæum is one of the most difficult and intricate in surgery. Its anatomy is puzzling, its disease processes are often obscure, and their treatment is still a matter of hot debate. When you find the treatment of a disease debated, and opposing views taken almost with acrimony by competent men, you may assume fairly that the end is not yet. The best one can do is to adopt that course which appears to be supported by the greatest weight of rational opinion, provided it agrees with one's own sense of the rational, and one's own experience. Generally, in the case of constantly debated subjects, you will find in the course of time that the best men are drifting towards definite similar conclusions, however far apart at first they may have wandered.

The peritonæum is a serous membrane forming a cavity, and this cavity has been likened to a great lymph sac. Its surface is extensive, probably somewhat greater than that of the skin of the whole body. It is a closed cavity in man; in woman it is connected through the Fallopian tubes with the outer world. It has a great capacity for absorption, especially in the diaphragmatic region, where the stomata in the central portion of the diaphragm drink up peritoneal fluids with great rapidity. When irritated, the peritonæum throws out rapidly a copious exudate, which may be fibrinous and cause adhesions of the serous surfaces; or may be a fluid, rich in albumin, and easily changed in character; or it may be sero-purulent. Owing to these peculiarities the peritonæum may become rapidly involved in dangerous inflammations; at the same time, it has remarkable powers of recuperation. Its nicely adjusted mechanism resents irritation, but it can dispose of an immense volume of irritants, when they are present. Our greatest interest in the peritonæum centres therefore in peritonitis, of which there are various forms, acute and chronic, tuberculous, and malignant being the most important. Moreover, there are diseases of the retroperitoneal space, inflammations, abscesses, glandular diseases, and tumors.

Acute peritonitis is divided anatomically into

localized and diffuse peritonitis. Localized peritonitis may develop about any diseased organ, appendix, Fallopian tubes, gallbladder, duodenum, stomach, etc. This limited peritonitis results in an exudate of fibrinous character, which mats together neighboring organs and locks up in separate pockets the secretions as they are produced. Colon bacilli, streptococci, and staphylococci are the organisms commonly concerned in these restricted inflammations, though the pneumococcus and other rare organisms sometimes are found. The symptoms are variable and depend on the extent and duration of the disease, as well as upon its point of origin. There are localized pain and tenderness, a fluctuating temperature, rarely high; sometimes nausea, and rarely vomiting, though there is usually distaste for food. There may be occasional chills; constipation is common, but absolute intestinal obstruction is rare. The diagnosis is based upon finding within the abdomen a mass, usually tender, varying in size and consistency; of recent origin, and associated with chills, fever, quickened pulse, and general abdominal discomfort; with malaise, dyspepsia, and constipation. These accumulations of fluid may remain pocketed for a long time; they may become absorbed, or they may spread, sometimes into the general peritoneal cavity, sometimes into neighboring hollow organs, sometimes by burrowing through the skin. When they are discovered they should be opened and drained. When they are suspected and are not definitely located it is often well to explore for them.

One of the serious results of localized peritonitis is the formation of chronic adhesions which may persist and cause great subsequent trouble. I shall refer to the treatment of these adhesions when we come to the subject of chronic peritonitis.

Subphrenic peritonitis and abscess is a special and interesting form of localized peritonitis. It may be due to extension from disease of the pleura, or of the liver, or gallbladder, and may be confined closely to the vicinity of the diaphragm, and be within the greater peritoneal sac. A more rare and interesting form of subphrenic peritonitis is that which appears within the lesser peritoneal sac, behind and below the stomach and the anterior layers of the great omentum. The source of infection may be a perforation of the posterior portion of the stomach, the duodenum, or colon, or it may arise from an acute inflammation of the pancreas. There results a distention of the

*Read before the Buffalo Academy of Medicine, Surgical Section, January 8, 1907.

lesser sac, with the appearance of a tumor above the umbilicus. The colon always lies below this tumor and never in front of it, as it does in the case in enlargement of the kidney. Osler mentions a remarkable form of subphrenic abscess containing air, called by Leyden pyopneumothorax subphrenicus. The symptoms in all these cases are those of acute, localized intraabdominal inflammation. When in the neighborhood of the diaphragm the abscess may be reached either from the front or back, and may be walled off and drained successfully. Abscess of the lesser sac is best reached through the gastrocolic omentum; but hitherto operation in this disease has been followed by a considerable mortality.

Diffuse peritonitis is the great topic with which we have to deal here. The pathological appearances vary in different patients and in the same patient even, so that one portion of the abdominal cavity may differ in appearance from another. The progress of the disease is influenced both by gravity and by the lymphatic arrangements; for instance, the peritonitis which results from a perforating duodenal ulcer advances rapidly down the right flank, as the septic material descends by the side of the spinal column over the right kidney towards the pelvis. Diffuse peritonitis starting from the appendix spreads at first into the pelvis, then extends around on to the left side, involving gradually the sigmoid, left renal, and splenic regions. At the same time it extends more slowly towards the liver, so that active organisms will be found in varying numbers in these places, while in the centre of the abdomen there may be no organisms whatever, but nearly always an abundant exudate, rich in toxins. Von Mikulicz wrote a paper, often quoted, and described three forms of diffuse peritonitis, diffuse septic, gangrenopurulent, and fibrinopurulent. You cannot always distinguish these with certainty, save at post mortem examination. In practice and at operation the appearance of the exudate and of the peritonæum, the extent and rapidity of effusion, and the constitutional reaction of the patient determine for you the gravity of the condition.

Writers still talk about idiopathic peritonitis, an archaic term which should find no place in our vocabulary. Sometimes we fail to isolate organisms from the abdomen, in certain cases of diffuse peritonitis; but we may be certain that organisms somewhere are present, even though we fail to find them.

A chemical or traumatic, noninfecting form of peritonitis frequently occurs but is always strictly limited, and is properly a reaction of the peritonæum—a process of repair following some injury such as the insertion of a drainage tube or wick, rough handling, or the twisting of an ovarian tumor. These simple forms of peritonitis generally result harmlessly if promptly relieved, except in so far as they may give rise to adhesions destined to make trouble.

Diffuse infectious peritonitis agitates us especially. The sources of infection have been detailed already. The most virulent organisms come from the intestinal track, and Harvey

Cushing long ago showed that the upper portions of the canal have relatively few bacteria; that the ileum has the greatest number, while there is a sudden drop after passing the ileocaecal valve. Besides the intestinal canal, from which bacteria may escape, there is the possibility of infection spreading from disease of the ischio-rectal region, the genitourinary apparatus, and from penetrating wounds. The following table is interesting¹:

SOURCES OF PERITONITIS IN 446 CASES.

Appendicitis	115
Stomach and duodenum	68
The rest of the intestines	118
Female genitals	81
Gallbladder	10
Kidney and urinary bladder	10
Pancreas	2
Spleen	1
Unknown	35
Postoperative	4
Hæmatogenous origin (nephritis, etc.)	2

These infections are commonly due to colon bacilli, next to streptococci and to staphylococci, and more rarely to gonococci, pneumococci, gas forming bacilli, and a few other rare organisms. The infection usually is mixed. According to the predominance of one or another of these organisms the progress of the disease is slow or rapid, and in like manner the morphological appearances differ. The colon bacillus sometimes produces but slight irritation, even with a considerable seropurulent exudate, but occasionally it may produce an extensive irritating effect, causing a rapid distention of the cells of the peritonæum and occasionally even gangrene. Staphylococci cause a rapid fibrinous exudation with an abundant deposit; for this reason the quantity of pus in the cavity is usually small, but when it is large it is of the seropurulent type. Streptococci give rise to little if any free pus, so that the peritonæum has a peculiar dry, granulated, blistered appearance. As a rule, however, with mixed infections in which the colon bacillus predominates, there is an abundant secretion of fluid, the peritoneal cavity containing many ounces of a rather thin, turbid material with occasional patches of agglutination and excoriation, but with a variety of appearances in different portions of the abdomen.

The *symptoms* of diffuse peritonitis (or general peritonitis as it is often improperly called) are as various as are the pathological appearances. One must consider first the initial disturbance, appendicitis or whatever it may be. The localized signs due to these special lesions extend gradually as the inflammation extends, until the signs become widespread, as large areas of the peritonæum are involved, and also with the symptoms. In general terms there is superadded to the intense initial abdominal pain, chilly feelings or an actual rigor. The pain extends over the abdomen and is aggravated by pressure and by moving. The patient lies on his back and tries to relieve the tension by drawing up his knees and having his shoulders raised. He breathes in a shallow, rapid fashion, of the costal type, because contraction of the diaphragm increases his pain. He holds his abdominal muscles rigidly contracted in order to keep at rest the inflamed peritonæum. Gradually the abdomen becomes distended, tense and tympanitic; the

¹ Von Bergmann's *System of Surgery*, iv, page 165.

pulse rapid, small, and wiry, ranging from 110 upwards. The temperature may rise to 103°, 104° and 105° after a chill; but its average elevation is moderate. With collapse, or late in the disease, it becomes subnormal. The tongue, at first white and moist, becomes dry, red, and cracked. Nausea and vomiting appear early, and vomiting causes great pain. The patient throws up first the gastric contents, then a yellowish and bilestained fluid, then a greenish fluid, and often, late in the disease, a brownish-black liquid, broken down blood with a faecal odor, the contents of the small intestine. There may be an initial diarrhoea, but constipation rapidly ensues. Sometimes there is frequent micturition; less often retention. The urine is scanty, high colored, and with a large quantity of indican.

The facial expression is that Hippocratic facies so often described: "A sharp nose, hollow eyes, collapsed temples; the ears cold, contracted, and their lobes turned out; the skin about the forehead being rough, distended, and parched; the color of the face being brown, black, livid, or lead colored." (Sir James Paget.)

When you come to the physical examination you will find two distinct types of abdomen, the distended and the retracted. The distended abdomen is more common. It may be enormously swollen, drum-like, very tense, glistening, slightly reddened; everywhere tympanitic, even over the hepatic and splenic areas; too exquisitely tender for satisfactory palpation; often the recti muscles show spasm on being irritated. Fluid may be made out in the flanks, fluid which shifts as the patient turns. Rarely the abdomen may be flat and board-like, if there be no exudate and but slight intestinal distention, in the case of a rapidly progressive infection without great inflammatory reaction.

Most cases of diffuse peritonitis proceed to a termination in death. The severe forms may kill within forty-eight hours, but more commonly the disease lasts four or five days. When the patient dies early he dies from a rapid, overwhelming toxæmia. If he lingers he dies from a slow toxæmia, in profound depression, in a low muttering delirium, with lips blue, extremities cold and clammy, the pulse irregular, the heart sounds weak, the breathing shallow. The leucocytosis is never a significant feature of these cases. It may be high or low, but often the patient dies with a white count which has never run above 15,000.

The *diagnosis* of diffuse peritonitis usually is obvious, and is founded upon the initial severe pain, the tenderness gradually extending, the abdominal distention, effusion, fever, collapse, vomiting, and constipation. One must differentiate it from sundry other diseases: Acute enterocolitis, in which pain is more colicky and a diarrhoea frequent; hysterical peritonitis, which Osler describes as deceiving the very elect. It must be rarely, however, that this cannot be distinguished from an infectious peritonitis; intestinal obstruction, in which the prostration comes on more slowly, and the pain, fever, and tenderness are less marked. However, intestinal obstruction is a frequent cause of peritonitis. Dif-

fuse peritonitis must be distinguished also from rupture of a abdominal aneurysm or embolism of the superior mesenteric artery; acute hæmorrhagic pancreatitis and rupture of a tubal pregnancy. All of those conditions may simulate peritonitis and all may be associated with it, but whatever the true condition, the symptoms are those of an alarming intraabdominal disease demanding immediate operative interference, if the patient's life is to be saved, and if his condition permits.

In the *treatment* of diffuse peritonitis one cannot divide the disease, clinically, into "septic peritonitis" and "suppurative peritonitis" as is often asserted. Until he opens the abdomen no man may tell with what he is dealing. In like manner the diffuse septic, gangrenopurulent and fibrinopurulent forms of von Mikulicz do not show definite clinical pictures; and then, different forms of peritonitis may be present at the same moment in different parts of the belly. Nor does a knowledge of the ætiology help us in a given case. The uterus infected at childbirth may cause, through lymphatic connections, an acute, overwhelming peritonitis, involving in a day almost the whole cavity, a lethal toxæmia; or an infection from the same source may be insidious, taking weeks to develop, gradually progressing, marked by extensive matting of the viscera, with numerous pockets of pus. Therefore the surgeon can never be sure as to the form of peritonitis with which he is dealing until he opens the abdomen; and even then he may be at fault as to the variety with which he is dealing until numerous cultures are taken, or the mystery is solved post mortem. You may open confidently an abdomen which you take to be the seat of a localized appendicitis, when you will find a diffused peritonitis. On the other hand you may make a diagnosis of diffuse peritonitis and then upon operating find a localized process only.

Then there is the question of definition. Erroneously we still talk about "general peritonitis," meaning an inflammation involving the whole of the peritonæum. Probably, such a condition never exists. Certainly no man can determine it by looking through an operation wound. The most we can say at operation is that a peritonitis is extensive, and is advancing without meeting barriers of adhesions. Nor upon opening the belly can we always foretell the outcome of a peritonitis; or the extent of the disease; or its prospects of self limitation. It is not surprising therefore that men do not always mean the same thing when they write or speak of diffuse or "general peritonitis;" and to the confusion arising from such misunderstandings is due much divergence of opinion, and, to a degree, the wide variation in statistics. I mean by diffuse peritonitis an infective inflammation, progressive, without definite barriers of adhesions, spreading rapidly by continuity through the peritonæum.

There are three views to be taken, clinically, of any case of diffuse peritonitis. One may feel that it is not of a virulent type; that it is making slow progress, and that the patient will recover under nonoperative treatment. Or the case may be so active and progressive that one may feel

an operation to offer the only chance of cure. Or the disease may have advanced further, and the patient be so profoundly septic that it is obvious he would die at once if submitted to operation.

Surgeons are coming to find cases of the first class—the nonoperative—to be more rare than they used, though some competent internists still cling to the belief that many of these mild cases may best be treated “medically.” My conviction is that peritonitis is a “surgical disease,” just as cancer is, or should be, a surgical disease. Thirty years ago and more, the opium rest treatment of peritonitis had an astonishing vogue under the teaching of Alonzo Clark, of New York, and his disciples. The treatment consists in giving immense doses of opium, thus locking up the bowels, paralyzing peristalsis, and promoting rest and limitation of the disease. A somewhat similar course is still advocated by physicians, but they limit the dosage of opium to that which will suffice for the relief of pain, and they give it in the form of morphine, hypodermically. They attempt to relieve the intestinal distention by giving high enemata of salts, glycerin, or turpentine; they nourish the patient by enemata or by small quantities of liquids by the mouth; and they allay thirst by allowing the patient to suck cracked ice.

I have given the forgoing description of one method of treating diffuse peritonitis because it is bad treatment, often followed. *If you purpose to treat the patient without operation* you must resort to no such half measures. The proper nonoperative method is to put the intestines at rest by emptying the stomach through lavage, and then keeping it empty. The stomach washing may be repeated if that organ fills up again with material regurgitated from the intestine. After washing out the stomach, put into it *nothing* until convalescence is established, no water, no food, no cracked ice. Give morphine for pain, if there be pain. Nourish the patient by nutrient enemata, in four ounce doses every four hours. Relieve his thirst by subpectoral infusions of normal salt solution, or by intravenous infusions. Stimulate him with strychnine. Such treatment, heroically followed, often will head off and subdue an advancing peritonitis. Such, essentially, is the treatment advocated by Ochsner.

Most surgeons, however, are loth to adopt these measures as a routine, because they feel that the fountainhead of the trouble, the local lesion—perforated appendix, duodenum, or whatever it may be—is thus left to keep up its contribution of poison to the peritonæum. I am in hearty sympathy with this view. I believe in operating to remove the primary cause. How shall we operate? There again we are upon debated ground. The debate is so recent that some reference to the practice of sundry operators will be instructive. There are those who wash out the abdomen, and those who wipe it out; those who eviscerate the patient, and those who handle the entrails as little as possible; those who drain the abdomen, and those who sew it up; those who insist upon a particular position of the patient to aid drainage, and those who disregard this factor; those who feed by the mouth, and those

who feed by the rectum; those who drain the distended gut by enterostomy; and those who inject into it cathartics and food. Some of these practices I endorse; others I condemn. I have seen surgeons discard some of them after half hearted and incomplete trials, and I have seen failures in my own hands, as well as in the hands of others, because we did not grasp the significance of conditions, or the proper value of certain factors in technique.

Alonzo Clark and Ochsner are correct of course, when they proclaim that the intestines must be put to rest; but others are correct when they assert that we must eliminate the primary focus of disease. Moreover we must in some fashion provide for the escape of septic material from the abdomen; we must encourage the secretory organs—the kidneys most of all—to take up their allotted task; we must nourish the organism, we must quench thirst, we must stimulate the flagging circulation, we must subdue pain. Every one of these details is important.

We have learned from the researches of Cannon and F. T. Murphy that certain impressions will check intestinal peristalsis, while others may be applied without that effect on the bowel. Those investigators put to themselves the question, why is it that a temporary intestinal paralysis follows almost every abdominal section? In their experiments on animals, they opened the abdomen, exposed the viscera to the air for a time, and then sewed up the abdomen. No intestinal paralysis resulted. In like manner, after filling the abdomen with salt solution, no paralysis followed; but handling the bowel caused a paralysis of peristalsis, and the more and the rougher the handling, the longer the paralysis, for four, six, twelve, and even twenty-four hours.

To return to our theorem, abundant flushing of the abdominal cavity in case of diffuse peritonitis was an early and obvious expedient in treatment, after removing the source of infection; flushing through a tube passed deeply into all parts of the cavity, using warm decinormal salt solution, several gallons, and leaving a goodly amount in the cavity. This method is employed by many surgeons. One must endeavor not to disturb and bruise the intestines, and should work through a single opening below the navel, when possible. Do not wipe the intestines; by so doing one adds to the traumatism and increases the paralysis. For like reason, do not eviscerate. Do not sew up the abdomen; drain it. Fowler's position assists drainage; of that I shall speak later. Do not feed by mouth until convalescence is established. As for enterostomy, direct drainage of the distended gut through a tube below in the ileum or in the cæcum, that is a manœuvre of questionable expediency. In an admirable essay Greenough² has discussed this subject, and concludes that the operation has a place in cases of extremely grave peritonitis. In this connection he formulates seventeen conclusions. Of these note the following five:

²R. B. Greenough, *Boston Medical and Surgical Journal*, May 19, 1904.

"The obstruction of the intestine in diffuse peritonitis is the result of a combination of causes."

"Paralysis of peristalsis is due to irritation, to toxic paralysis, and to paralysis of distention."

"Mechanical causes, such as infiltration of the bowel wall and light adhesions, in certain cases contribute to this paralysis."

"Enterostomy is indicated, in addition to other operative measures, in graver form of diffuse peritonitis."

"Its greatest advantage is the drainage of the gases and decomposing contents of the bowel, and the relief of paralysis of peristalsis."

I have thus presented the main features of the argument of those who advocate enterostomy, because the importance of the subject warrants it, and because the matter is still *sub judice*, but the figures adduced, and my own experience do not impress me with the value of this procedure.

After a careful study of many papers, much discussion with writers, an elaborate comparison of statistics, and a general hospital experience of eighteen years, I have come to definite conclusions regarding the treatment of diffuse peritonitis. In general terms, every patient with diffuse peritonitis should be operated upon as soon as seen, unless, in the judgment of an experienced surgeon, he is nearly moribund. The operation should be reduced to a minimum in time and extent. The viscera should not be handled except so far as is unavoidable in removing the primary focus of disease. Irrigation should be practised when the abdominal fluid is thick or contains numerous masses of fibrin and detritus. These should be washed out thoroughly with several gallons of warm decinormal salt solution. In the absence of these masses, and when the fluid is thin, irrigation is needless. Adequate drainage should be provided, the intestines should be kept at rest after the operation, and the organism should be sustained. To accomplish these objects I have followed, for the past two years, the methods formulated by J. B. Murphy.³ For these methods my respect is constantly increasing, and I therefore advise the following procedures:

Open the abdomen as low as possible, through a short incision, three or four inches long. Seek and remove the primary disease. By the short incision shock is minimized, as the intestines are but little exposed. They should not be allowed to escape from the abdomen.

Do not irrigate the abdomen except under such circumstances as I have described. Under no circumstances attempt to wipe clean the peritoneum, as the adherent conglobated lymph acts as a protective and its removal gives an opportunity for the absorption of fresh toxins.

Drain through the operation wound, and drain the pelvis through a stab wound above the pubes. Van Buren Knott, in a valuable paper⁴ advises draining the pouch of Douglas in women through the vagina, an admirable method. Employ Fowler's postural method, to assist drainage. This method, described by George Ryerson Fowler of Brooklyn, in 1900, is an advance of

great importance in technique. We have seen that the peritoneum in the region of the diaphragm is most rich in its lymphatic connections, while the pelvic peritoneum is relatively poor. For this reason peritonitis in the upper portion of the abdomen is more fierce in its course and more immediately overwhelming than is pelvic peritonitis. Our endeavor must therefore be to drain septic products away from the upper to the lower portions of the abdomen, and we know that the trend of peritonitis is largely dependent on gravity. We therefore employ Fowler's position, which consists in sitting the patient in a posture as nearly upright as he can maintain without distress or fatigue. Then the fluids gravitate to the pelvis and are drained away by tubes and wicks placed there to receive them. The pumping action of the diaphragm also forces the fluids down. As LeConte⁵ remarks: "It must be remembered that it is not the quantity of fluid present which is harmful, but rather the extent of the peritoneal surface which comes in contact with it, so that a quart of pus contained in a round cavity would be less dangerous than an ounce thinly coating over the peritoneal surface."

I use large rubber drainage tubes cut in the corkscrew pattern suggested by C. H. Mayo, and carrying copious gauze wicks—one tube through the operation wound to the initial focus of disease, one through the suprapubic opening to the bottom of the pelvis, and one in the vagina, if that is incised.

The wounds are covered with an abundant absorbent dressing, which must be changed frequently, as it quickly becomes soaked. The whole operation should take a short time in most cases, and the amount of anæsthetic used should be small.

I do not approve of multiple punctures of the bowel, as for a single puncture, that accomplishes nothing; nor do I approve of injecting saline cathartics into the bowel.

The after care of the patient is an extremely important part of the treatment. Our purpose is to leave the bowel absolutely at rest until nature has had a chance to reassert herself. So we give *nothing* by the mouth, but we introduce abundance of water into the rectum by the well known "seeping" method employed by Murphy. For this purpose insert within the sphincter a large sized nozzle with several openings, fed through a long tube from a reservoir elevated but a few inches above the level of the anus. A gentle trickle of salt solution is thus led into the rectum, and led so slowly that it is absorbed as fast as it flows in. Many quarts are thus taken up in the course of twenty-four hours, the stream being intermitted from time to time, if that seems best. Thus two objects are attained. First, the septic stream from the peritoneum into the lymph channels is reversed; fluid pours into the peritoneum instead of away from it; the patient's upright position causes this fluid to gravitate to the pelvis, and an abundant discharge escapes and soaks the dressings. In the second place the increased amount of water in the circulation stimulates the heart and kidneys. It allays

³ J. B. Murphy in the *Practical Medicine Series; Surgery*; Series of 1903.

⁴ Van Buren Knott, *Annals of Surgery*, July, 1905.

⁵ R. G. LeConte, *Annals of Surgery*, February, 1906.

thirst, and supplies nutriment. Moreover, if necessary, liquid absorbable food may be mixed with the solution injected. The output of urine increases surprisingly, many pints being passed in twenty-four hours. It is interesting to observe in this connection that fluid, thus indirectly introduced into the peritoneal cavity, maintains continuously, effectively, and without irritation, the action which we crudely attempted to produce when we pumped a great quantity of water into the belly at the time of the operation. Seeping supplants sluicing.

Whereas we expected a death rate of from seventy to eighty per cent. from acute diffuse peritonitis under previous forms of treatment, it seems reasonable to expect, judging from the relatively few cases as yet available for statistics, that the mortality may be kept below thirty per cent. if we follow the treatment I have just described.

Chronic peritonitis is an unsatisfactory term, for it is often hard to determine where acute peritonitis ends and chronic peritonitis begins. We recognize two forms of chronic peritonitis: Exudative chronic peritonitis and adhesive chronic peritonitis, while it would be proper enough to include tuberculous and malignant peritonitis under the caption *chronic*.

Exudative peritonitis is so closely allied clinically to tuberculous peritonitis that it is extremely difficult to distinguish them. The condition is rather rare and is characterized by a general and abundant fluid exudate. We do not know what causes this disease, though it has been ascribed to catching cold and to traumatism. The fact that it is most common in young women and that it frequently starts in the pelvis, suggests that its origin lies in the Fallopian tubes. Indeed its first appearance at the beginning of menstrual life has been observed. It comes on gradually with fluid slowly collecting in the abdomen, with or without pain. If the fluid accumulates in great amounts it may interfere with the functions of the abdominal organs, especially the intestines. Sometimes small nodular masses like pebbles may be felt in the umbilical region. There is fever often. The general health is affected, and the patient becomes pale, weak, and emaciated. Not infrequently there is an associated pleurisy.

It is almost impossible by an ordinary examination to distinguish such a case from tuberculous peritonitis; but a proper conclusion may be reached through the tuberculin test, or by inoculating animals with the fluid. One must also distinguish the disease from the various forms of ascites. A majority of the patients recover under the use of internal remedies, mercurial injections, and hydrotherapy.

Treatment by operation is indicated in obstinate cases, especially if one cannot exclude tuberculosis. Sometimes the exudate will disappear after repeated tapplings. Sometimes an abdominal section with removal of the fluid, and with irrigation, cures promptly.

Chronic adhesive sclerosing peritonitis, or *plastic peritoneal sclerosis* is an interesting disease and not an uncommon one. Writers are wont to com-

plain that textbooks give scant attention to diseases in which they themselves are especially interested, and I find Wetherill⁶ remarking of sclerosing peritonitis that it "is treated but slightly and irregularly in American textbooks." This disease occurs at one or at several points in the peritoneal cavity, but favors especially the region of the Fallopian tubes, the gallbladder, the flexures of the colon, the posterior part of the peritonæum, the root of the mesentery, the mesosigmoid, and the omentum. There results a thickening and shrinking of the peritonæum. The disease may be a sequel also of acute infection of the intestine, and of traumatism. Moreover, it may start in a chronic form, and lacking an acute stage, may develop far without the patient's being aware of any cause for its onset. Histologically, one observes extensive subperitoneal sclerosis. There is no exudate.

The symptoms are, obstinate constipation leading to obstruction even, with nausea and vomiting, pain and tenderness. In the milder cases there is constant abdominal uneasiness, dyspepsia, malnutrition, and occasional attacks of colicky pain several hours after eating, since the dense adhesions interfere with the normal intestinal stream. The surgical treatment of this disease is not always satisfactory, though it is the only treatment which gives any prospect of permanent relief. The operation consists in opening the abdomen and dividing the bands of adhesions which are found. It may be necessary also to remove organs which appear to be the source of disease, such organs as the appendix, the gallbladder, and the Fallopian tubes. Sometimes the patient is cured permanently by the operation; sometimes the disease recurs and may extend slowly until it involves the greater part of the peritonæum. Various methods have been devised to prevent the reformation of adhesions, such as the introduction of Cargile's membrane between wounded surfaces, the copious dusting with thymol iodide (aristol) and the interposition of omental grafts. These substances are sometimes useful, and since one can never foresee the outcome of the operation, their employment is justifiable.

On the whole we may not regard the outlook as favorable, though I cannot agree with Beck⁷ in his statement, "my experience in cases of chronic progressive, adhesion forming peritonitis, as it is observed idiopathically, as well as after appendicitis, is absolutely bad. The nature of this peculiar condition, characterized by a multitude of cobweb shaped bands, is not yet sufficiently elucidated."

Tuberculous peritonitis is one of the puzzles of surgical practice. It is insidious, it is confusing, it may simulate a great number of diseases. Whenever you see a patient with somewhat distended abdomen, with indefinite dyspeptic symptoms, and with an uncertain history of abdominal pain, you must think of tuberculous peritonitis. Appendicitis and tuberculous peritonitis are so common, and so elusive often, that they should always be in the mind of the surgeon when he

⁶Journal of the American Medical Association, March 5, 1904.

⁷Carl Beck, American Medicine, April 1, 1905.

examines an abdomen; though one may choose to relegate appendicitis to the group of acute diseases, and tuberculous peritonitis to the group of chronic diseases.

One finds three distinct forms of tuberculous peritonitis, which have been classified as (1) the ascitic form; (2) the fibroadherent; (3) the ulcerative. Hawkins, in a much quoted article, describes four clinical varieties: The latent; the severe with ascites and a spontaneous tendency to remissions or encapsulations; a seropurulent form; a fibrous adhesive form. Such classifications are all very well, but unfortunately for the clinician these forms are not always clearly marked, while more than one may be present in the same individual.

Tuberculosis of the peritonæum rarely is primary; a considerable majority of the cases are secondary to tuberculosis of the lungs; or the primary focus may be in the Fallopian tubes, the intestines, the appendix, and the abdominal lymph glands; or the infection may be brought by the blood stream to the peritonæum from a tuberculosis centre in some remote part of the body. We need not consider here the rather uncommon, acute, miliary tuberculosis, which is but part of a general tuberculosis.⁸ We are dealing now with a chronic process.

Tubercles may be found scattered or set thickly over the peritonæum, associated with an exudate free in the peritoneal cavity; or one sees nodular masses suffering caseous or ulcerative changes—the nuclei of further trouble. There may be extensive matting of viscera with infiltration of the organs, producing a friable condition of tissue. There may be extensive involvement, ulceration and destruction of organs. The omentum and the intestines are the parts most frequently affected.

The symptoms are extremely variable, but as a rule one finds pain coming and going, fever, emaciation, anæmia, anorexia. The contour of the belly is ballooned; there is often ascites with alternating diarrhœa and constipation. Sometimes there appears an inflamed zone about the navel; rarely there are sinuses discharging pus or fæces. Palpation may be satisfactory; at different times different impressions are conveyed to the hand; lumps appear and disappear; fluid may be found free, or it may be locked up in pockets. One discovers a condition of tension or hardness in the abdominal wall, a peculiar elastic resistance. Thomayer's sign is often valuable; in the shortening of the mesentery, resulting from infiltration, the entire mass of intestinal coils may be drawn upwards and backwards to the right, while fluid will be found accumulated below and to the left. Rarely does the fluid of tuberculous peritonitis collect in great amounts. The figures of the Massachusetts General Hospital, gathered by Shattuck and W. H. Smith, show that the disease is most common between the ages of twenty and thirty, while liability to it diminishes as we approach the extremes of youth and old age. It is rare in infancy, rare still after sixty.

In making the diagnosis one considers the common symptoms; abdominal pain; the frequent diarrhœa; the nausea and vomiting; the fluid in the abdomen; the masses to be felt. Leucocytosis is infrequent; the temperature is usually slightly elevated, especially in the evening. The tuberculin test is generally positive, but a much more satisfactory test is the injection of the abdominal fluid into guinea pigs.

Twenty-five years ago we were taught that tuberculous peritonitis is an invariably fatal disease. To-day we have abundant proof that it is not invariably fatal, and that patients recover often under all varieties of treatment, and under varying conditions of hygiene. A number of statistics show we are safe in concluding that under proper care thirty to forty per cent. of the patients will recover.

In discussing the treatment of tuberculous peritonitis writers have been wont to quote the case of Spencer Wells, who operated upon a young woman for an ovarian cyst, some forty years ago, and found a tuberculous peritonitis. He sewed up the belly and the patient got well. So men have pointed to this case as a *post hoc propter hoc*. In large measure therefore the discussion of the treatment of tuberculous peritonitis has centered around the question, to operate or not to operate. Until recently the discussion was futile, largely because only recently have we come to see clearly that operation is of benefit to those patients mostly from whom the focus of disease can be removed. Numerous cases are reported in which the abdomen was opened, or was opened and drained, or was irrigated, or variously treated. In any case the operation was extremely simple and many of the patients got well; so clinicians have been debating in what way does the operation benefit. There have been numerous attempts at an explanation, most of them more or less meaningless. Eichberg⁹ sums up the debate as to why laparotomy cures tuberculous peritonitis by saying: "Because it does not." Such a statement is too sweeping. It is logical to doubt the beneficial effect of laparotomy when the abdomen has been opened, washed out, and sewed up without the removal of a focus, but with the subsequent recovery of the patient. In such a case one may reasonably claim that the patient would have recovered under medical treatment. On the other hand, I agree with J. B. Murphy when he says, "the benefit from an operation for tuberculous peritonitis will depend upon (a) the removal of the source of continued supply which can almost uniformly (?) be accomplished; (b) the degree of adhesions in the peritonæum; (c) the reparative stimulation produced in the peritonæum by the operation."¹⁰

Since the Fallopian tubes are a common source of infection it is obvious that removal of the tubes in the case of young women suffering from tuberculous peritonitis will often effect a cure. On the other hand, men are not such proper subjects for operation, and are more likely than women to recover under medical treatment.

⁸ J. F. Eichberg in *Journal of the American Medical Association*, October 3, 1902.

¹⁰ *Practical Medicine Series; General Surgery*, Series 1905, page 288.

⁸ Brun, *Zentralblatt für allgemeine Pathologie und pathologische Anatomie*, 1902.

Further, those cases with few adhesions and abundant fluid in the cavity often recover rapidly after the operation of opening and flushing. Those cases in which the cavity is obliterated by adhesions are not improved by any operation. Finally, since we know that the great majority of cases of tuberculous peritonitis are due to extension from disease of the chest, and since we are assured that pulmonary tuberculosis does not contradict the possibility of a cure of peritoneal tuberculosis, we are justified in asserting that a large number of such cases will recover without operation. If no operation is done, do not keep the patient in the hospital. Insist upon a continuous out of doors life, with abundance of nutritious food; and if possible eliminate mental strain and anxiety.

Such are some of the diseases of the peritonæum which interest us. Their treatment calls for further trial and debate. In this paper I have endeavored to present the best present day knowledge as I see it.

29 COMMONWEALTH AVENUE.

THE PATHOGENESIS OF FACIAL HEMIATROPHY.*

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The pathogenesis of facial hemiatrophy is still debatable. The case I am about to report is interesting, as it shows that the exclusivism of some writers in regard to a sympathetic origin of the malady cannot be accepted as absolute.

J. U., colored, forty-two years of age, after having been exposed to cold about eight years ago, was seized suddenly with severe pain in the right submalar region, around the infraorbital foramen. The pain was of a neuralgic character; while the patient suffered continuously, he, however, had paroxysms of unusually sharp pain. At the end of two days he totally recovered. Shortly afterwards he noticed that his face was slightly drawn towards the left. From that time on the facial asymmetry became more and more pronounced.

At present the condition is as follows: The face is distinctly deviated to the left. When told to show his teeth, to pout his lips, to whistle, to blow, only the left side of the lower face contracts. However, there is no paralysis of the right side of the face, as voluntary movements can be executed. The striking difference between both sides is the predominance of the muscular contractions on the left. The muscles of the right side of the face, especially in its lower half, are thin and flabby. The mucous membrane of the right upper lip appears to be thicker than on the opposite side, but this is due to a deep cicatrix resulting from an injury he received years ago. The skin of the right cheek, of the right upper and lower lips is smooth, while on the left very much wrinkled. This is especially noticeable in attempts to speak or smile. In the act of inspiration the ala nasi on the right remains immobile, while on the left its mobility is visible and even exaggerated. The sensations over the entire right side of the face except forehead are decidedly altered, and this is more marked in its lower than upper part. The pain sense is particularly affected. The patient complains of paræsthetic disturbances; a chilly sensation often occurs on

the affected side. The temperature of the left side of the face is somewhat higher than that of the right. Until a year ago he had frequent twitchings in the same muscles. The electrical reactions are as follows: The entire musculature of the right side of the face, except the frontalis, presents distinct R.D. The latter muscle responds to a far stronger galvanic current than the same muscle of the left side. Under the faradic current the contractility of the right side of the face is markedly diminished.

In every other respect the patient is normal. Tongue, uvula, gums, palate, present no changes. The pupils are equal and normal. No vasomotor disturbances have been observed on the affected side. The special senses are also normal. The skin is normal—there is no increase in the function of perspiration. The hair of the moustache, of the beard, of the brow, and of the palpebræ, present no discoloration nor any disturbance of nutrition. The secretion of the skin, of the glands, and of the mucous membranes of the affected side are normal. Both carotids are equal in volume and in pulsation. There is no atrophy of muscles of the neck, thorax, or extremities. White patches which have been described to be usually present at the onset in cases of this nature, were absent in this case.

The case is of interest from the standpoint of the pathogenesis of the affection. There are at present two theories concerning the nature of the disease. According to some observers, a primary atrophy of the subcutaneous cellular tissue is the essential feature. Others believe that hemiatrophy is of a nervous origin, and any of the following nerves is supposed to be the immediate cause: The sympathetic, trigeminus, or facial. As to the first view, we do not know of any organic disease of the nervous system which should produce a strictly hemilateral affection. The nervous theory is the most acceptable. The majority of cases reported point to an involvement of the inferior sympathetic ganglion. Concomitant pulmonary lesions at the apex are found in many of those cases (Bouveyron, *Lyon médical*, 1902, and *Revue neurologique*, 1902; L. Jacquet, *Annales de dermatologie*, 1900). In traumatic cases the lower sympathetic ganglion was involved and hemiatrophy of the face followed (Seeligmüller, *Berliner klinische Wochenschrift*, 1872). In all these cases symptoms of sympathetic origin were present alongside of facial muscular atrophy on the same side, as, for example, disturbances in the vasomotor function, hyperhidrosis, pupillary contraction.

The anatomical relations of the third cervical ganglion, viz., its intimate contact with the pleura at the apex, explains its involvement in cases of pleuropulmonary pathological processes. The sympathetic view of facial hemiatrophy is therefore a very important one. In the above cited Jacquet's case, the post mortem findings have definitely proved the correctness of this contention. In other cases, in Gulland's among others, the hemiatrophy was observed to be confined to the area of distribution of a branch of the fifth nerve.

My patient also presents not only a trophic disturbance of the muscles, but also sensory disturbances over the area covering these muscles. That the lower cervical ganglion does not play a rôle in the causation of the disease in this case can be seen from the fact that there are no pupillary changes nor vasomotor disturbances on the affected side. It is possible that the sympathetic

* Presented at the combined meeting of the New York and Philadelphia Neurological Societies, November 24, 1906.

fibres found in the fifth nerve may play a certain role in the disturbance of nutrition of the facial muscles, but association of sensory disturbances and the neuralgic pain in the same area immediately preceding the beginning of atrophy present a strong presumption in favor of the trigeminal pathogenesis of the affection.

As to the question of facial nerve it cannot be admitted in this case, as there is no genuine palsy of the affected muscles. The patient has preserved the ability of contracting them, but the degree of contraction is, of course, smaller by rea-



son of the atrophy. The sensory disturbances also are against this view.

The majority of cases published up to the present time are explainable on the theories of the first two nerves. Autopsy records are extremely few. In the literature at my disposal I could find only three: one is the case of Jacquet's, in which there was a distinct lesion of the inferior cervical ganglion. The other is that of Mendel, who found a secondary interstitial neuritis of the trigeminus, but the point of departure of the neuritis could not be determined, as the disease was of several years' duration. The third is that of Touche, who published in the *Revue neurologique*, 1902, the autopsy record of a man, seventy-five years old, who presented during life a right hemiplegia with hemiatrophy of the face on the same side. There was found besides a hæmorrhagic focus in the left internal capsule, also a softened

area in the pons at the level of the apparent origin of the fifth nerve on the right.

That the Gasserian ganglion may be the cause of facial hemiatrophy can be seen from Brown-Séquard's experiments. He made a resection of the ganglion in young animals and observed symptoms absolutely identical with those of hemiatrophy of the face. Hemiatrophy may be also due to a cerebral lesion. A case of this character is reported also by Touche in *Revue neurologique*, 1902. A man of eighty-one years presented a facial hemiatrophy on the left. Autopsy showed firm adhesions of the pia to the right operculum and discoloration of the cerebral tissue at the same level.

Basing myself upon the clinicopathological data, I am warranted to conclude that hemiatrophy of the face may be caused by the lower sympathetic ganglion with its nerve, by the fifth nerve, by the Gasserian ganglion, finally by a central lesion. The tendency of some writers to attribute Romberg's trophoneurosis exclusively to the sympathetic nerve fibres is erroneous and cannot be accepted for the stated reasons.

1430 PINE STREET.

BONE SYPHILIS, HEREDITARY AND ACQUIRED.*

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(Continued from page 7.)

PART II. EARLY AND LATE ACQUIRED BONE SYPHILIS.

It may seem somewhat paradoxical in the light of old views, but it is none the less true that osseous lesions of syphilis may be present in all stages of the infection, namely, in the primary, secondary, and tertiary periods. There is a popular belief that the bones are largely, and perhaps exclusively, attacked in the late periods of the disease, hence bone syphilis is commonly termed a late secondary or a tertiary lesion. This view is largely due to the fact that in many cases the severe order occurs in the tertiary period. But it often happens that in the secondary stage these structures are more or less seriously involved. Our current concept, therefore, of syphilitic osseous lesions limits the date of their appearance to the secondary and tertiary stages. This view is based on an incomplete study of syphilis and its bone lesions, and on the assumption held by many that the disease does not become constitutional until the onset of the secondary stage. Our advanced knowledge now makes it clear that the infection is systemic, active, progressive, and aggressive from its very first days, and that the culmination or ripening of the process corresponds with the date of generalized manifestations. Contrary to early beliefs, it can now be clearly established that in the primary stage a number of important changes take place which heretofore were ill understood

* Read before the New York Academy of Medicine, Section of Orthopaedic Surgery, October 4, 1906.

or even ignored. To-day we know that in the intraprimary stage of syphilis the victim may be infected by the original donor or by another syphilitic a number of times before the onset of the classical secondary syphilis. This fact is clearly shown in my recent papers on successive chancres and the pathology of syphilis.¹

Now it is further shown that in the intrapri-

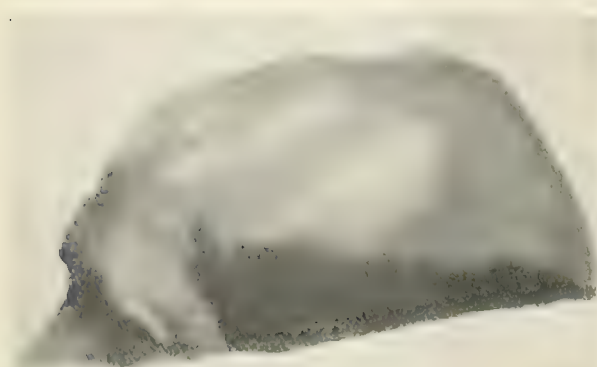


FIG. 11.—Multiple nodes of the skull bones in the early tertiary period.

mary stage sparse precocious syphilides may develop, which are later on followed by the skin lesions and generalized manifestations of the classical secondary evolution. In addition to these intraprimary lesions just mentioned, we must take cognizance of those evidences of early structural changes in the brain and cerebrospinal axis and other parts, in the form of cephalalgia and neuralgia and rheumatoid pains, hepatic involvement, pleuritic attacks, cardiac seizures, and faucial and renal irritation which are not uncommon before the secondary climax. The existence of these varied and scattered symptoms clearly proves that something serious is transpiring in the presecondary period.

This adumbration of mine will, I think, make clear my contention that in the primary stage of syphilis the bony structures of the body, with their correlated fibrous tissues, may be attacked by syphilis; hence that there are unquestionably intraprimary lesions of the bones. These statements, I think, will clear up the paradox with which the essay opened.

Intraprimary osseous syphilis is to-day an almost unknown subject, yet it is of much practical and therapeutical importance. The subject was broached by Mauriac many years ago, and its novelty attracted my interested attention. Intraprimary syphilitic involvement of the bones is a rather rare condition, but of it I have observed eleven clearly recorded cases within a period of eleven years, and Mauriac has reported several. It is probable that many cases occur and are not recognized, for the reason that very many observers are not critical regarding the chronology of early syphilitic evolutions. Then, again, we have become so accustomed to think of the chancre and its adenopathies as being the sole early manifestations, and to content ourselves to wait patiently for the secondary invasion, that other features of the case are lost sight of.

¹ *Journal of Cutaneous Diseases*, September, 1906. *British Medical Journal*, October 6, 1906.

Precocious intraprimary syphilitic lesions have certain clearly marked characteristics: They are superficial and limited quite sharply to the periosteum, and seem not to involve the bone structure beneath. They form flat or slightly salient tumors, in limited number and more or less scattered. They may be denominated superficial nodes. They develop quite quickly, become indolent, may undergo spontaneous resolution, but are usually dissipated by the therapeutical measures adopted to cure the general disease.

They are the seat of greater or less nocturnal pain, and during the day are quiescent unless subjected to pressure, which causes marked soreness. They are not known to have undergone degeneration, but are essentially inflammatory and many are frequently accompanied by neuralgias, irritative lesions, headache, rheumatoid pains, and arthralgias.

A brief synopsis of these personal cases will give a clear idea of their peculiarities:

CASE I.—An anæmic girl, eighteen years old, presented a hard chancre of the fourchette of twenty-two days' incubation. Thirty-two days later flat nodes one half to one inch in diameter (round and oval) appeared on the frontal and parietal bones and on the sternum. At the same time the sheaths of the tendons of the forefinger, middle, and ring fingers became dropsical, swollen, and painful. Fifty-five days after the appearance



FIG. 12.—Very late tertiary syphilis: Huge cranial node; necrosis of skull, outer lamella, and fall of nose, evidence of gumma of integument involving upper layer of periosteum.

of the chancre (the bones having been affected three weeks) generalized manifestations were noted.

CASE II.—A man, aged thirty (given to alcoholics), had a typical chancre of the glans penis, with adenopathies. Thirty-five days later he had small nodes on the ribs, clavicles, and on the sternoclavicular junction, besides five large flat ones, somewhat salient, on

the anterior surface of both tibiae. Two weeks later generalized syphilis manifested itself.

CASE III.—Woman, forty years old, thirty days after the appearance of a hard chancre, had one large node on the frontal bone and several small ones on the parietal and occipital bones, one on the styloid process of the right radius, and a large one on the left malleolus. Seventeen days later general syphilis showed itself.

These bone lesions were developed during the acme of the syphilitic infection, when the poison



FIG. 13. Acquired dactylitis syphilitica of finger (dorsal view). Osteomyelitis.

ran riot over the whole body. Why the bones were attacked thus early it is impossible to say.

The old time explanation of bone syphilis being due to idiosyncrasy is no longer tenable; it was never scientific. It is probable that traumatism of varying grades are the exciting causes of most of these chancres. Several classical cases are of great interest, and are instructive for the suggestions they offer and the possibilities they warrant. They are as follows:

A syphilitic pedler carried his stock on his back by means of a leather strap hitched around his chest, which continuously pressed against the clavicles. On the latter specific nodes developed. A luetic fencing master suffered from swellings on his sternum and ribs as the result of thrusts with the foils at the hands of his pupils upon his breast pad. Nodes on the internal surfaces of the ulnæ were developed in a syphilitic billiard enthusiast who rested his arms on the edges of the table.

In various occupations injurious pressure is exercised on different bones, and specific hyperplasia is induced. Injuries to the tibiae are very common, from a variety of causes, and such cases form a large contingent of specific osseous lesions. Blows on the head and falls may cause periostitis of the skull bones. In fact, every superficial bone, and even deeply seated ones, may be the seat of injury during the course of syphilis, and their involvement may follow. Even to-day there are those who think osseous syphilis may be caused by mercury taken in the system at earlier periods. We know, however, the opinion is entirely unfounded.

In a general way it is possible to divide bone syphilis into two periods, including the first two years of the infection for the secondary stage, and later periods up to thirty or forty years for the tertiary cases.

These lesions of the first two years present many well marked and tolerably uniform features. In the first months of the secondary period the lesions are of the scattered form; we perhaps may say exanthematic manifestations, such as are detailed in the intraprimary swellings. As

time goes on we observe a less copious development of nodules in the involvement of bone localities, and to the association of bone and joint lesions. The skull bones are frequently attacked by swellings of a diameter of from half to one third, and a thickness of perhaps half an inch or more. In early months the lesions are symmetrically situated, more or less multiple, and of rather prompt formation. As time goes on their number decreases and there is less tendency to symmetry in distribution. The clavicles, sternum, ribs, and the bones of the extremities are mostly attacked.

The early tumors are largely hyperæmic and mildly proliferative, but in time gummatous infiltration shows itself. Throughout their course they are the seat of pain, chiefly nocturnal.

In the first two years synovitis is often seen. At first it is mild, intermittent, and slow in growth, with absence of change in the integument. Though considerable effusion is made out, the parts do not give the impression that severe hyperplastic changes are present, but that the process is irritative and mildly inflammatory. Such cases show periods of cessation of involution and of irregular reappearance. The larger bones are most commonly attacked, particularly those of the joints. Then as the months roll on these symptoms seem accentuated, and there is palpable evidence of more severe structural change in the joint tissues and evidences of gummatous infiltration begin to show themselves. Coexistent juxtaarticular bone lesions are common, and involve more or less of the shaft.

This brief summary will give a tolerably clear idea of the earlier phases of joint and bone syphilis. In most cases there is a coexistence of one or more manifestations in other tissues or organs.

Exceptionally we observe multiple bone lesions as the tertiary period is ushered in, but rather less frequently there is hereditary syph-



FIG. 14. Osteomyelitis of metacarpal bone of index finger cured by treatment.

ilis. In late tertiary syphilis but one or two or more bones may be involved.

The contrast between very late secondary syphilitic nodes and those of the very late tertiary period are admirably shown in Figs. 14 and 15. The multiple nodes of the skull in Fig. 14 are graphically portrayed, while in Fig. 15 the evidence and ravages of node formation are very characteristic. The course of the case in Fig. 14 was very chronic, but in that of Fig. 15 it seemed unending, together with the recrudescences of

the tegumentary gummata. These two cases are typical studies in themselves of tertiary cranial syphilis. In the milder case energetic treatment was begun early and a cure was effected. In the older case the patient was a drunken tramp who would not persist in systematic therapy.

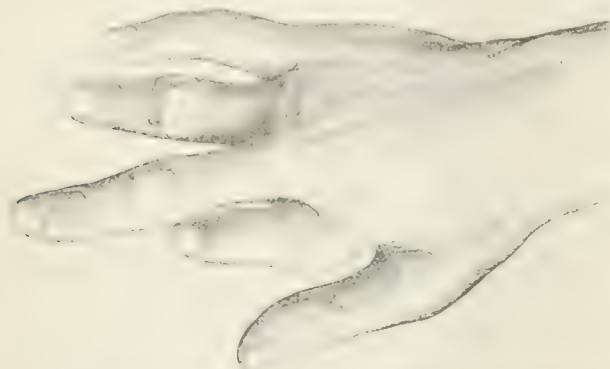


FIG. 15.—Distal end of bone tip of index finger resulting in its absorption.

It is questionable whether in late syphilis there is a well marked, sharply limited periostitis in which the covering membrane of the bone only is attacked, as we have seen that it does early in the infection. In general the morbid process extends to the bony tissue, and it may coexist with osteomyelitis. Late acquired periosteal lesions in most instances differ from those of the hereditary disease in extent of tissue involved. In the acquired disease as a rule the morbid process is confined to a greater or less segment of the bone, and it is rather exceptional to find the extensive lesions so often seen in hereditary syphilis, as shown in Fig. 4. Syphilitic osteoperiostitis is very similar to the simple form. It is limited to the superficial layers of the bone and to the periosteum, and chiefly attacks the long bones and the cranial bones.

The affection begins in the connective tissue and around the vessels of the Haversian canals. Thus the parts are infiltrated with numerous round cells. Besides the cell infiltrations into the periosteum, the membrane is also oedematous. These conditions are found in the early stages of osteoperiostitis. In the bones the Haversian canals become enlarged and filled with marrow, which is either red or embryonal or gray and gelatinous. In the stage of oedematous infiltration osteoperiostitis may undergo resolution from the effect of specific treatment.

When the process becomes old the newly formed cells act as osteoblasts and new bone tissue is formed. As a result, we find swellings of the bones, which are called exostoses and periostoses. This hyperplastic process is called formative osteitis or eburnation.

In very old subjects, careless of treatment, the morbid process is very chronic and goes on to the involvement of the whole bone, and then takes on the character of a hyperostosis. We observe the feature also in late hereditary syphilis. Figs. 7 and 8, though illustrating the effects of heredo-syphilis, will give a clear idea of the outward appearance in many cases of late acquired tertiary syphilis.

In the majority of cases of nodes the infiltration is absorbed under appropriate treatment and the tumor undergoes resolution. In other cases the inflammation is more acute; the skin becomes adherent to the tumor, is reddened and thinned; degeneration and softening take place and an opening may be formed; the ulcer shows little or no tendency to extend, but a superficial portion of the bone to a limited extent usually becomes necrosed and comes away, and an adherent cicatrix is the final result.

Gummatous osteomyelitis and osteoperiostitis are more advanced forms than those just described; the subperiosteal embryonal tissue and the medullary tissue are much more abundant, and these structures take on the character of gummata.

These affections may exist separately, or they may be found in conjunction on the same bone. Then, again, it is sometimes observed that one bone is attacked superficially by gummatous osteoperiostitis and another by the medullary lesion. Gummatous osteomyelitis begins by a low grade of inflammation in the connective tis-

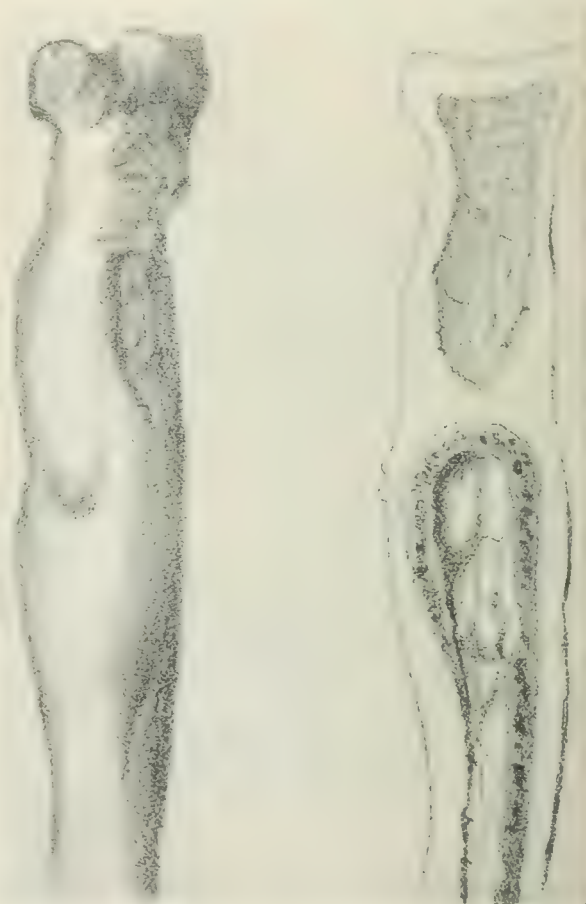


FIG. 16.—Radius seat of osteomyelitis.

FIG. 17.—Internal view of same, showing bony growth limiting lesion.

sue around the medulla. In either case a greater or less swelling is produced, which gives rise to pain and discomfort in the skin, and is the seat of more or less severe nocturnal pain.

The clinical features of osteomyelitis are best studied in the bones of the hand and feet. They

present salient features and are susceptible of careful examination and interpretation. Fig. 16 presents an admirable picture of this condition.

The osteomyelitis in this case began in the ninth year of a rebellious and severe syphilis. The patient observed that the first phalanx of his right middle finger became enlarged, the swelling, however, extended in its whole length, being seated in the bone of the first phalanx and further on in the soft parts. The finger was sensitive to pressure. The swelling of the phalanx rapidly increased during the following weeks. Very soon an hydrarthrosis was observed in the first phalangeal articulation. The patient during the year following did not pursue an active treatment, and towards the end of the year the phalanx was very much enlarged, and presented a balloon shaped appearance, measuring in circumference a little more than five inches, while the circumference of the corresponding finger of the opposite side was a little over two inches; it was also much increased in length. The integument and bony structures of the last two phalanges were normal, but the articulation between the first and second phalanges was much distended by fluid, and its ligaments became so loose and flaccid that movement could be produced in various directions, but voluntary motion was absent, and the finger was useless for the

tertiary lesions. Under active specific medication, local and systemic, the enlarged phalanx was reduced to its normal condition in about four months, and the hand retained its full usefulness.

Contrast this with the results presented in Fig. 20. The patient was a man, forty-three years old, who had suffered for years with tertiary syphilis, unrecognized and untreated. The osseous and joint lesions had existed for years, and without therapeutical intervention had resulted in the following deformities: The index finger was deformed and shortened so that its extremity scarcely reached the joint between the first and second phalanges of the middle finger. On examination the first phalangeal bone was found to have, in a great measure, disappeared, not more than a fourth or fifth part of its length being left. The metacarpophalangeal joint had been destroyed, and a portion of the lower extremity of the metacarpal bone had been absorbed, the new and imperfect joint between it and the phalanx occupying a level a little higher than the line of the knuckles, while the joint between the first and second phalanges was on a level a little lower. The soft parts being in excess, by their bulging, contributed to increase the deformity. The metacarpophalangeal joint was quite movable, but the patient had lost control over it, and both flexion and extension were imperfect. In a similar manner the second phalangeal bone of the

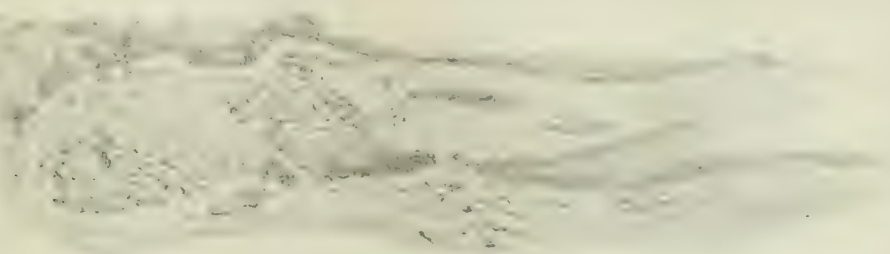


FIG. 18. Gummatous periostitis and osteomyelitis.

performance of its functions. The swollen finger presented a balloon shaped appearance, and consisted of a central cavity surrounded by a thin bony capsule. The gummy material became extruded through perforations in the bony shell, and the integument and a colloid fluid escaped. Upon probing a cavity was found, but dead bone was not felt. Under treatment for two years the phalanx became gradually reduced, so that in the end it measured only three inches in circumference and was atrophied in length two thirds of an inch.

One of the striking peculiarities of syphilitic osteomyelitis is that in some cases the infiltrating lesion undergoes more or less absorption and leads to thinning and fragility of the bone, and also rather exceptionally to total atrophy. These bony changes develop during the chronicity of the disease, and seem to occur from lack of treatment, for when specific medication is vigorously pushed the morbid infiltrations are wholly absorbed. In many cases in which little or no pain is felt the patient becomes apathetic and avoids therapy. Two admirable and illuminating pictures of the different courses observed in syphilitic osteomyelitis are presented by the details of the cases portrayed in Figs. 19 and 20. They are as follows:

Fig. 19 represents osteomyelitis of the right first metatarsal bone in a thirty year old man, ten years syphilitic. The bone lesion was coexistent, with many

ring finger had been reduced to about a fourth of the length of the same bone in the left hand, the extremity of the finger scarcely reaching to the last joint of that of the middle finger. The loss of substance was confined entirely to the phalangeal bone, though the joint between the second and third phalanges was somewhat swollen and stiffened. In Fig. 6 a similar condition is offered as the result of late hereditary syphilis.

In some of these disfiguring cases the gummy-tous infiltration spontaneously undergoes fatty degeneration and is absorbed, taking with it the bone itself.

It must be remembered, however, that another form of degeneration occurs in syphilitic osteomyelitis, such as was shown in the case of the dactylitic phalanx. In this case liquefaction of the lesion takes place, the same as occurs in gummy tumors of the integument. The liquid formed by the degeneration of all forms of gummy tumors is a viscid yellowish fluid, containing cheesy flocculi, but no pus. An absence of pus is peculiar to the liquid formed by the degeneration of any gummy deposit, and this as well as its other characteristics are important as diagnostic points. Microscopical examination of this fluid shows amorphous granular matter, with sometimes a few connective tissue cells, but never in an unirritated condition pus corpuscles. These latter bodies may be found after the gummy ulcer

or sinus has been exposed to the air, or has been treated by irritant applications, but never in the original process of softening. The color of the fluid varies from a yellow to a brown; its consistence is also variable, being thin when drawn from a joint and mixed with effusion, and thick and inspissated when formed by the degeneration

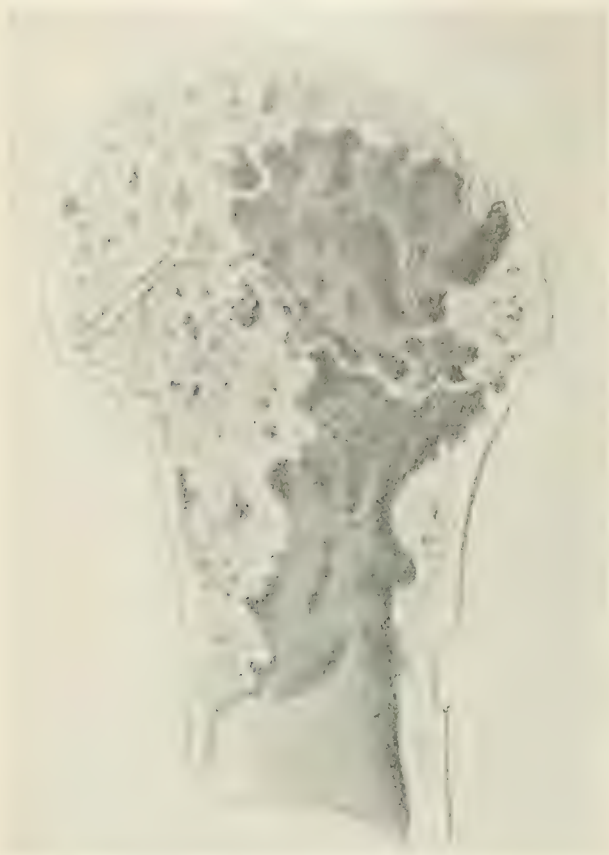


FIG. 19.—Osteomyelitis of femur involving upper segment of the bone in large masses.

of connective tissue or bone, and in the latter form it may contain minute bony granules.

If we bear in mind the fact that syphilitic osteomyelitis may occur in an subacute and a chronic form, and that generally it may be cured promptly, and that in most cases its ravages and deformities are due to want of treatment, we are in a position to consider the following illustrations of the appearance of bones the seat of this disease: Fig. 21 portrays a radius mildly and chronically affected. Fig. 24 shows well gummatous osteomyelitis in disseminated foci in the head of the humerus. It can be readily seen that if these foci are removed by interstitial absorption the density of the bone could be much reduced. Fig. 25 presents a striking picture of diffuse osteomyelitis which has extended and involved the head of the bone. The same process has synchronously attacked the periosteum. Fig. 29 is a fine illustration of the seat, ravages, and extent of osteomyelitic masses in the head of a long bone. It is generally severe, chronic cases like these which end in the dead house and present much sought for post mortem pictures.

All forms of syphilitic osseous lesions, particu-

larly when near joints, are accompanied by synovitis of varying grades. We have already considered the arthropathies of the early and secondary stages, and have seen that they are essentially subsynovial lesions which, as the infection becomes older, tend to the development of progressive gummatous infiltration. In fact, the severity of the lesion in any case depends upon the growing increase of this neoplasm. With the increase in the lesion the joint structures become larger, and in older cases the term white swelling is given to the affected part. Fig. 30 presents a graphic illustration of such a diseased knee in which the gummatous tumor is very large; the



FIG. 20.—Gummatous infiltration into the knee joint, with erosion of the condyle.

bones superficially eroded; the ligaments perforated by diffuse infiltrations, and the synovial membrane much hypertrophied. It is a classical picture.

In such cases it is most common to find gummatous infiltrations throughout the body, and particularly in the viscera. In these old chronic cases, there is frequently a concomitant tuber-

culous infection, which goes hand in hand with the syphilitic poison and results in the undoing of the patient.

The diagnosis of bone syphilis is comparatively easy in the early years of the infection. The existence or the remembrance of generalized or localized manifestations is often of great aid. The rheumatoid, osteoscopic, or neuralgic pains, mostly nocturnal, are often prime indices. The course of the lesions, their chronicity, their usually aphlegmasiac character, and their tendency to attack parts near joints and the continuities of long bones, particularly superficially, usually stamp them as of specific origin. When found on the skull, nodes are readily recognized; and when on the shafts of long bones, their features are usually pronounced. In the early and late tertiary stage there may be a lack of a history of early infection, and doubt and uncertainty may occur, but in general the chronicity of the case and its concomitant symptoms will usually cause suspicion. In late cases we, as a rule, do not find multiform lesions, but the slow aphlegmasiac course with the tell-tale osteoscopic pains point to their origin in syphilis. When that harmful symbiosis of syphilis and tuberculosis of bones is encountered the diagnosis may be difficult to arrive at, in which event rigid inquiry into the antecedent history of the patient should be instituted, and close scrutiny made as to other evidences of tubercular infection.

In many cases specific medication proves a true touchstone of diagnosis, and in many its successful adoption clears up all doubts.

In most cases a favorable prognosis may be given, particularly if a correct diagnosis has been made and proper and energetic treatment has been instituted. However, it must be remembered that the complication of tuberculosis with bone syphilis calls for a guarded prognosis, since it is so common for vital organs and parts to be attacked before the bone complication is effected. Concomitant specific visceral lesions very much overcloud the prognosis.

In the treatment of bone syphilis energetic therapy is urgently called for. While in general potassium iodide is of vital importance, it must be remembered that in these cases there is a necessity for the combined use of mercury with this classical sheet anchor. It will be found in most cases that a more prompt result will follow the combination treatment, and that by it the patient may be spared the massive doses of the iodide which are so trying to the stomach, and often so depressing to the mind and system. The local vigorous use of mercurial ointment should never be forgotten in conjunction with internal medication. In many cases the combined use of the iodide with hypodermic injections of some active, soluble mercurial preparation will be attended with conspicuously beneficial results.

142 WEST FORTY-EIGHTH STREET.

Before putting an unconscious patient to bed, the hot water bags should be removed or sufficiently covered to prevent the occurrence of a burn.—*American Journal of Surgery.*

EXCISION OF THE WRIST JOINT. REPORT OF CASE.*

By J. SHERMAN WIGHT, B. S., M. D.,
Brooklyn, N. Y.

The carpus has two rows of bones with four in a row, but practically there are only three in a row. The first row includes the scaphoid, semilunar, and cuneiform; the second row includes the trapezoid, os magnum, and unciform. The pisiform is articulated to the extremity of the cuneiform and the trapezium is articulated to the outer and lower surface of the trapezoid. The articulation between the trapezium and the meta-



FIG. 1.

CASE.—Patient, age 52 years; tuberculous disease of the carpus before operation.

carpal bone of the thumb is a completely independent joint which allows free movements between the metacarpal bone of the thumb and the trapezium.

The inferior radioulnar joint forms a completely independent articulation. It is separated from the wrist joint proper by an interarticular cartilage. Near the outer border of the interarticular cartilage there is sometimes found, according to Henle, an oval opening, and there is in such a case a communication with the radiocarpal joint.

The scaphoid and semilunar bones articulate with the end of the radius while the inner border of the semilunar bone articulates with the interarticular cartilage. The cuneiform bone articulates with the lower surface of the interarticular

* Read before the Surgical Society of Brooklyn, June 7, 1906.

cartilage. A communication between the radiocarpal joint and the medicarpal joint may arise from the absence of the interosseous ligaments connecting the articular surfaces of the scaphoid, the semilunar, and the cuneiform. A communication between the radiocarpal articulation and the pisiform bone is more common.

The midcarpal joint is the real cavity of the



FIG. 2.

CASE. Porter, age 32 years, tuberculous disease of the carpus one month after excision of the wrist.

carpus and lies between the two rows of the carpal bones. The bones of the second row are especially firmly joined together. The clefts between the bones of each row are in open communication with the midcarpal joint. These clefts are closed by ligaments in front and behind toward the radiocarpal and the carpometacarpal joints. A communication between the midcarpal joint and the carpometacarpal joint is regularly present through an open cleft between the trapezoid and the os magnum, and there is an exceptional communication with the radiocarpal joint through an open cleft between the carpal bones of the first row.

The carpometacarpal joint is not infrequently divided into halves by a synovial fold which extends from the interosseous ligament between the os magnum and the unciform bone to one of the metacarpal interosseous ligaments. The carpus has the form of an arch whose abutments are the trapezium and the unciform. The flexor tendons of the fingers pass under and through this arch and are covered in by strong fascia which binds the abutments of the arch together.

There are five synovial membranes the arrangement of which has an important bearing on the extension of disease. 1. The membrana saciformis of the inferior radioulnar articulation, passing from the lower end of the ulna to the sig-

moid cavity of the radius and lining the upper surface of the triangular fibrocartilage. 2. The membrane of the wrist joint proper, passing from the lower end of the radius and the interarticular fibrocartilage above to the bone of the first row below. 3. The common synovial membrane of the carpus, the most extensive of all, passing from the lower surface of the scaphoid, semilunar, and cuneiform above to the upper surface of the bones of the second row, sending up two prolongations between the scaphoid and semilunar, and the semilunar and cuneiform, also sending downwards three processes between the four bones of the second row, prolonged down into the carpometacarpal joints of the four inner metacarpal bones. 4. A separate one between the cuneiform and the pisiform. 5. A separate one between the trapezium and the metacarpal bone of the thumb.

There are five groups of tendons which surround the wrist that make a convenient division in the consideration of this subject: (1) Those special to the thumb; (2) the extensors of the fingers; (3) the flexors of the fingers; (4) the extensors of the wrist; and (5) the flexors of the wrist.

Excision of the wrist is rarely required for injury. Partial resection is indicated in irreducible dislocation of the wrist, in fracture of the radial base where reduction is impossible, and some compound fractures at this location. Tuberculous disease of the carpus offers a wide field to test the value of this operation: There have been



FIG. 3.

CASE.—Porter, age 32 years, tuberculous disease five months after excision of the wrist.

many good results recorded, so it now no longer is set down with the doubtful surgical procedures. Tuberculous disease of the carpus more rarely occurs alone and isolated than any other tuberculous joint affection. The existence and degree of other tuberculous lesions, the personal and family history, the presence of albuminuria, and lardaceous disease must be taken into considera-

tion in deciding between excision and amputation.

Whether the disease begins in the synovial membrane or in the bones it extends rapidly not only to the wrist joint, but to the two rows of carpal bones and the bases of the metacarpals along the synovial membranes whose complicated arrangement with open clefts of communication has already been outlined. Every atom of the disease must be removed.

The history of tuberculosis of the carpus includes sources of infection in the surroundings, familiar invasions of other structures, discharging sinuses riddling the wrist and hand, and has extended over a long period of time when the case is first presented to the surgeon. Syphilis and sarcoma should be differentiated. A clear history and an x ray picture leave little doubt of the diagnosis. The finding of the bacillus completes the proof.

When tuberculous trouble is once established and resort to operation offers the only promise of relief, it should be undertaken with a view to the removal of all traces of the disease. This may



FIG. 4.

CASE.—Porter, age 32 years, final result of excision for tuberculous disease of the carpus.

be extremely difficult without disturbing the tendons. A successful operation includes flexion and extension of the fingers, however stiff the wrist may become. All incisions should be so planned as to save absolutely the whole of the first three groups of tendons and to divide only the tendons of the wrist proper so close to their insertions that, as a rule, they form new attachments and resume their functions as recovery takes place. Although it increases the risk of leaving tuberculous mischief behind, the subperiosteal method is to be preferred after a thorough curetting and cauterization.

CASE.—The case which I bring before you is a colored man, æt. thirty-two years, married, a porter by occupation, and a native of North Carolina. His mother died past middle life of a protracted fever, and the rest of the family history is negative. At eleven years of age he contracted bilious fever from which he suffered for about six months. In 1891 he received a blow upon the right wrist. A small lump appeared on the dorsal surface causing pain, but otherwise not interfering with function till three years ago, when a sinus appeared on the ulnar side, which discharged freely. He has since been greatly limited in the use of the wrist. He was sent to me by his physician, Dr. Jacobs, April 19, 1906. He stated in addition to the history already detailed that pain, stiffness, and weakness, had rendered the wrist useless for some time and that local applications with fixation had given no relief. I found the

wrist swollen and tender to pressure, and there was any attempt of motion caused pain. There was a mass on the ulnar side just beyond the styloid process. I took the radiograph shown in Fig. 1. The diseased area is here clearly outlined and will be seen to involve all the bones of the wrist and encroach upon the radius and ulna and all the metacarpal bones except that of the thumb.

Taking this as a guide, the wrist was excised April 23, 1906, as follows: The metacarporadiodorsal incision of Ollier was carried from a point mid-way between the styloid process vertically downward and then obliquely outward along the outer side of the extensor indicis ending at the junction of the middle and lower thirds of the second metacarpal bone. This was afterwards extended above to permit the removal of the lower ends of the radius and ulna. The extensor indicis tendon was drawn to the radial side, while the tendon of the extensor carpi radialis brevis was detached from the base of the third metacarpal bone. The posterior annular ligament was then divided, the extensor tendons of the primi and secundi internodii pollicis were drawn to the radial side, and the rest of the extensor tendons were held to the ulnar side. A portion of the diseased carpal bones was removed with the rongeur. The bases of all the metacarpal bones, but the first which was free from disease, were sawed off. The lower ends of the arm bones were sawed off. The whole mass was stripped away from the periosteum, and this was thoroughly curetted and cauterized. Diseased foci were exposed in the tendon sheaths and cauterized. A portion of the extensor minimi digiti was cut away and the tendon reunited. The old sinus was cut out on the ulnar side of the wrist leaving an opening for drainage. The Esmarch bandage was removed, hæmorrhage was arrested, the dorsal incision was closed, an iodoform drain was inserted through the ulnar opening, dressings were applied, and the arm was placed upon an anterior splint.

Passive motion of the fingers was begun on the fourth day. The first dressing was done on the eighth day by my house surgeon who removed the stitches and the drain. The wound was dressed twice a week, and passive motion was continued daily reducing the swelling and diminishing the stiffness of the joints. The tubercle bacillus was obtained from the diseased tissue. May 21, 1906, I took the radiograph shown in Fig. II. Here can be seen the gap left by the operation and the advance of the regeneration of bone. September 21, 1906, I took the x ray picture shown in Fig. III. Here will be seen the completion of the bony outgrowth and the extent to which the metacarpal bases approximate to the lower ends of the arm bones leaving a kind of a ligamentous joint with considerable motion. Fig. IV. shows a photograph of the hand as it appears to-day. The patient has now returned to his occupation as a porter, and is able to write and use his hand.

30 SCHERMERHORN STREET.

A CASE OF MELANOSARCOMA OF THE EYE (PRIMARY) AND OF THE LIVER (SECONDARY).

BY M. I. SCHOENBERG, M. D., and C. N. B. CAMAC, M. D.,
New York.

This case is reported on account of: 1. The early evidence of a rapidly fatal disease afforded by a grave local eye condition which may be confused with a comparatively harmless one. 2. The clinical manifestations of the rapidity with which the disease progresses.

CASE.—On November 20, 1905, I (Schoenberg) was hurriedly called to see Mrs. W., who was suffering

severe abdominal pain which she attributed to having eaten salmon the day before. On examination I found the whole upper abdomen prominent as if the stomach were acutely dilated by gas. Over this region the pain was referred. On palpation there was



FIG. 1.—Photograph of case of melanosisarcoma, showing (1) left eye removed; (2) obliteration of right costal margin and prominence in epigastrium due to hepatic tumor.

to be felt a hard painful mass more especially on the right. This mass moved with respiration, extended six inches below the right costal margin, and involved the whole epigastrium as far as the left midclavicular line. The whole mass was continuous with the liver dulness (Fig. 1). The pain, which was excruciating, was localized to the epigastrium and in the back over the last four dorsal vertebræ. There was nausea and eructation, but no vomiting, diarrhoea, or constipation. Temperature and pulse were normal.

I had seen the patient three weeks before and made a thorough examination. At that time no mass was palpable. She then complained of slight pain in the dorsal region. To my surprise in the short space of three weeks the mass, as described, had developed.

Up to two years ago the previous history shows nothing of importance. The patient is forty-five years old. Two years ago her vision began to fail, more especially in the left eye. In three months this eye became painful and she consulted an oculist, who advised operation. Three months later the pain became so severe that she consented to the operation. The left eye was

extirpated by Dr. Herman Knapp, six months after the vision began to fail and three months after onset of ocular pain. She felt well for one and one half years afterwards, until November, 1905, when I saw her for her supposed attack of indigestion. From that date the history of the case is that of a malignant growth of the liver.

At this time I (Camac) saw the case with Dr. Schoenberg. The question being between a malignant and specific process, we determined to look up the history of the eye trouble. We strongly suspected the case to be one of melanosisarcoma, so obtained a specimen of the urine, which on standing for a few hours turned ink black. Examination by Dr. T. W. Hastings presented nothing beyond a well marked melanin reaction. A specimen taken November 21st did not turn black, though kept for many months; that taken a few weeks later did so turn, but they both yielded the melanin reaction. At the New York Ophthalmic Institute, through the courtesy of Dr. Knapp, who had operated upon her for the eye trouble one and one half years before, we saw the sections of the eye. The case had been diagnosed clinically glaucoma, but on section the melanosisarcomatous character had been clearly made out.

This early similarity of the signs and symptoms between glaucoma and melanosisarcoma of the eye is one of the important features which the case brings out. The intraocular tension, the failing vision, and pain are much alike in the two conditions. When the glaucomatous cup or a mass appears the diagnosis is established. The mass may however obscure the field and so prevent a clear view of the eye ground. The melanotic growths springing as they do from the choroid soon lift the retina and so present a characteristic picture. (Fig. 2.) But it is in the early stages that these characteristic pictures are absent.

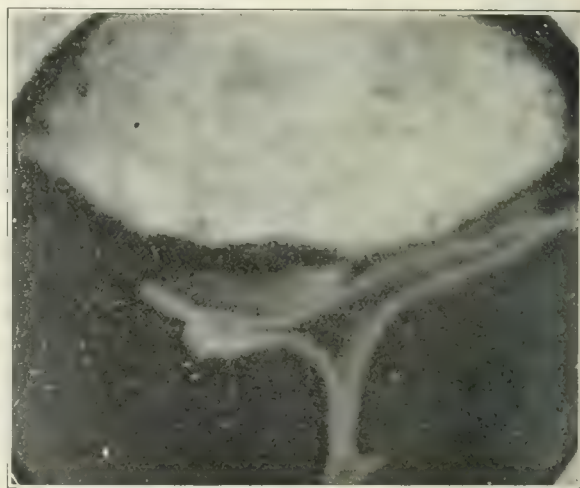


FIG. 2.—Case of melanosisarcoma—photograph of section of eye showing (1) tumor which springs from choroid and appears as large white (leuco) mass with melanotic areas scattered throughout; (2) and the shriveled retina, which has been crowded into the cavity of the vitreous humor by the growth.

(Those not familiar with the anatomy of the eye will better appreciate the position of this tumor and the crowding of the retina by comparing this photograph with the drawing of the normal eye in Gray's Anatomy.)

Clinically, emphasis should be laid upon the importance of investigating the cause which led to extirpation of the eye and every such eye should be sectioned. These cases usually have a period of comparative freedom from pain and other disturbing symptoms after the operation. The oculist's part

of the case has therefore passed when the liver symptoms develop, and the general practitioner comes into the case. He then sees only the evidence of the eye having been removed. The importance of observing and investigating the cause of this cannot be too strongly emphasized in the matter of diagnosis. It was through the careful work of one and one half years before at the New York Ophthalmic Institute that the diagnosis in this case was established.

The striking features of the case are: 1. Failing vision two years before hepatic involvement. 2. Ocular pain and progressively failing vision one and three quarters years before hepatic involvement. 3. Clinical diagnosis, glaucoma; pathological diagnosis, melanosis. 4. Abdominal pain and mass in a patient with extirpated eye; no eye symptoms at this time. 5. No jaundice. 6. No ascites. 7. No hæmatemesis or melæna. 8. No varicosity of the veins of the abdomen or extremities. 9. No abdominal pain except at very early stage and though these were severe they resembled an attack of indigestion. 10. The sudden appearance of the tumor, the rapid development up to a certain size, beyond which it did not go throughout the subsequent course of the disease. 11. Urine turning black and yielding melanin reaction.

The patient died March 3, 1906, about two and one quarter years after onset of eye symptoms, and two and one half months after onset of abdominal symptoms.

A NEW OPERATION FOR THE CORRECTION OF MALFORMATIONS ABOUT THE NASAL LOBULE.

By F. STRANGE KOLLE, M. D.,
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The operation herein described applies particularly to the correction or reduction of an over prominent nasal tip due to an excessive growth or congenital malformation of that part of the nose giving that organ undue prominence and a hook-like appearance usually associated with a narrow, sharply upward inclined upper lip. The same operation, on a larger scale, can be readily employed for the correction of hyperplasia nasi and rhinophyma.

The objection to the operations of Pozzi (*Bulletin et memoire de Société de chirurgie*, 1897, p. 729) is that the cicatrices occasioned thereby are practically as bad if not worse than the unscarred over prominent nose, while the submucous procedure of Roe (*Medical Record*, July 18, 1891) is not only insufficient in these cases but, according to my experience, practically useless.

Roe's method requires a submucous extirpation of the redundant cartilage at the tip through a necessarily small opening within the nasal orifice, also the division in several places of the anterior fold of the lower lateral cartilage with the object of reducing the undue convexity of the alæ. The latter is, we might say, impossible since the cartilages will not be reduced by such a method even under pressure dressings, which are likely to cause gangrene of the skin of the wings, or if this be avoided the cicatrix, resulting from such division usually restores the very fault that it is expected to overcome, while the mucous lining of the alæ becomes thickened and

more firmly tied down than previous to the operation. One is tempted to excise the major curvature of the lower lateral cartilage, but this leads to a flattening of the wings of the nose, partial atresia of the nasal orifice, and a decided lack in its symmetry.

Secondly, in Roe's operation there is always a lack of knowing how much or how little to remove of the cartilage of the tip, a second cosmetic operation being made necessary after the parts have contracted and healed, a common fault with most cosmetic plastic operations performed under local anæsthesia owing to the immediate œdematous enlargement following its hypodermic use.

The operation heretofore most commonly practised is one in which an elliptical piece of skin is cut from the tip of the nose followed by the extirpation of the anterior prominences of the lateral cartilages, and amputation of the septal cartilages. Unfortunately the result, at first quite satisfactory to the eye, culminates in the pulling apart of the cicatrix formed by bringing the sides of the wound together



FIG. 1.

FIG. 2.

along the median line with a later depression at the tip in this median line occasioned by the outward traction of the lower lateral cartilages. Even a second or third operation does not overcome this result entirely and at best leaves an ugly irregular gash in the median line of the tip and the columna.

In one of the cases here cited this same operation had been unsuccessfully tried twice by another surgeon with very unsatisfactory and unsightly result. (Case II.)

The ideal operation for all of this type of cases from the view of the surgeon is to leave as little disfigurement as possible, and the method to be here considered, when properly followed, leaves no scar whatever except for a slight white line across the columna of the nose where it is out of view and when contracted offers no objection on the part of the hypercritical patient.

The method of the author is as follows: Given a nose, typified by the illustration in Fig. 1, the skin above the site of the operation is thoroughly cleansed with soap and hot water, then rinsed with alcohol, 95 per cent., and vigorously scrubbed with gauze sponges dipped into hot bichloride solution 1:2000 followed with a thorough lavage with sterilized water. Both nostrils are now cleansed with

warm boric acid solution by the aid of small tufts of absorbent cotton, wound over a dressing forceps. The patient is then instructed to breathe through the mouth during the operation. A number of small round gauze sponges dipped into sterilized water and squeezed dry are placed within reach of the assistant. About one drachm of two per cent. beta eucaine solution is now injected about the tip of the nose, the columna, and the alæ as far back as their posterior fold.



FIG. 3.

A thin bistoury is then thrust into the nose from right to left, entering at the point E (Fig. 2) and brought downward parallel to the anterior line of the nose and emerging below the tip in a line with the anterior border of the nasal orifices. This procedure leaves a strip (A) about one quarter inch wide laterally, rounded at its inferior extremity and attached superiorly to the nose. Next the round inferior tip (B) is cut away obliquely sloping inward towards the nose by the aid of a small angular scissor. Each blade of the angular scissors is now placed into each nostril, the tips of the blades inclined forward, and the columna or sub-sæptum is divided at C, also the sæptum along the line D up to a point a little above the first incision made externally at E. The two arterioles of the columna are controlled by the use of mosquito bill forceps. The two projecting folds of the lower lateral cartilage in the columna are next severed as deeply as possible to give mobility to the stump, a step necessary to overcome the changed position, otherwise resulting in a droop which would have to be corrected at a later sitting.

The next step is to give the needed shape to both wings. This is accomplished with a specially designed scissors so curved on the flat that its convexity facing upward corresponds to the normal curvature of the orificial rim. A clean cut with these scissors beginning at G and ending at the point E is made, leaving the base of the nose as shown in Fig.

3. The anterior flap A is now bent backward to meet the stump of the columna at C. If it does not fall readily into place a little more of the sæptal cartilage is removed along the line D until this is accomplished. It may be necessary to shorten the flap A in cases

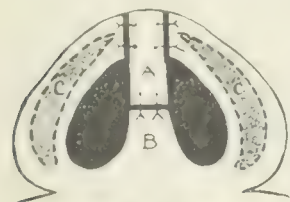


FIG. 4.

where a very prominent hook is to be corrected.

The free end of the flap A is now sutured with No. 4 sterilized twisted silk to the stump of the columna at B. Two stitches usually suffice (See Fig. 4). One or two sutures may also be taken across the angles of union of the alæ and the flap A. The inferior raw surface of each wing may be found to

be too wide, owing to the presence of the thickened cartilage at this point of the wing. The skin and the mucous membrane are then carefully peeled away from the cartilage and the latter cut away as high as possible, or a gutter-like incision is made along its edges as shown in C (Fig. 4), excising the elongated elliptical piece of tissue which includes the cartilage. The raw mucocutaneous edges of the wings are now brought together with a No. 1

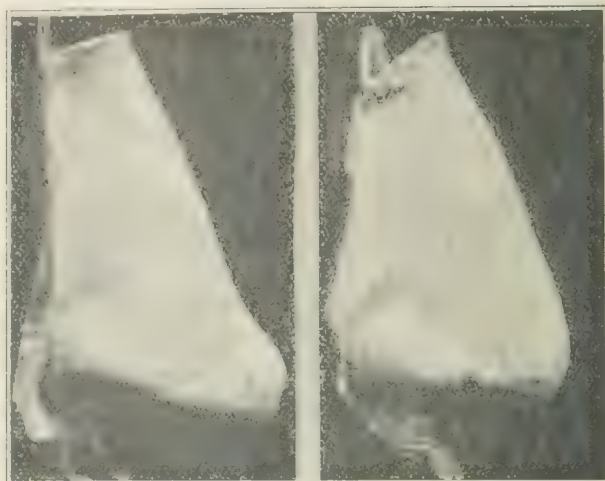


FIG. 5.

FIG. 6.

twisted silk continuous sutures, completing the operation.

An antiseptic powder is dusted over the parts operated on, and small gauze dressings are applied with the aid of strips of silk isinglass plaster. A

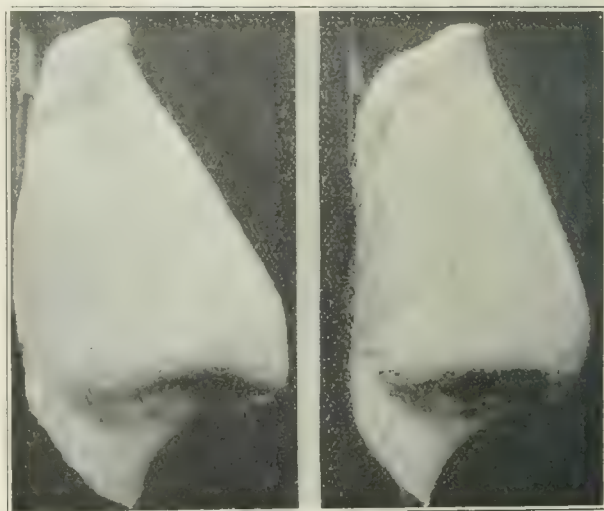


FIG. 7.

FIG. 8.

small tampon of cotton well dusted over with an antiseptic powder is placed into each nostril.

The dressings are changed the second day, when the resultant swelling will have practically subsided. The sutures in the columna are removed the fourth day preferably, and those of the wings about the sixth day. Complete cicatrization follows in about ten days when the patient can be discharged.

The following cases are given to show the types

of cases thus far operated upon and to illustrate the results obtained.

CASE I.—Mr. R., aged thirty-two, foreman mechanic. Had been operated upon for angular nose, also at point of nose by Dr. S. Presented himself for operation October 19, 1904, when cast was made (see Fig. 5). Bromides given during recovery. Patient had been



FIG. 9.

subject to fits of depression on account of his nose for over a year. Wounds healed in ten days when second cast was made (Fig. 6). Complete recovery.

CASE II.—Miss B. P., aged twenty-two, actress. Patient presented herself for operation March 22, 1905. A long irregular depressed cicatrix showing at point of nose the result of an attempt to reduce tip of nose by an elliptical extirpation of the lobule (Dr. N.). No cast was made of the case at the time so that a second cast showing the result would be of no use. Recovery



FIG. 10.

complete in twelve days. Patient returned to her profession three weeks later much pleased with the result.

CASE III.—Mr. L. L., aged twenty-eight, broker. Presented himself at the advice of Dr. T. for operation May 2, 1905. Cast of case made and shown in Fig. 7. Uneventful recovery in twelve days when cast Fig. 8 was made.

CASE IV.—Mr. M. B., aged twenty-eight, operatic baritone. Presented himself for operation June 4, 1906. Photograph shown in Fig. 9. Uneventful recovery in fifteen days when photograph in Fig. 10 was made; angular nose operated upon (at this time discharged; recovery complete).

CASE V.—Miss L. W., aged twenty-seven. Presented herself for operation and cast Fig. 11, made August 4, 1906. Uneventful recovery in ten days. Cast of result made August 18, 1906 (see Fig. 12).

In each one of these cases the patient was discharged highly satisfied and well pleased with the result of the operation, although in Case V, the patient was requested to return in about one month for an operation to reduce the width of the wings of the nose, which was not attempted at the first sitting but could have been with little difficulty by beginning the primary incision at E, Fig. 2, higher up and cutting out a triangular section on either side of the flap A. The apex of each triangle being at point E, and the base along the line D. The

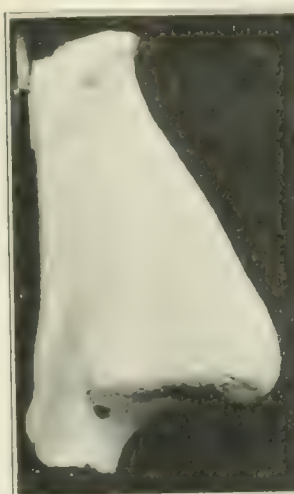


FIG. 11.



FIG. 12.

wounds are sutures along the dorsum of the nose with No. 1 twisted silk, after exsecting much of the lower lateral cartilages of the wings, as can easily be reached in the triangular point formed by the raw dorsal border and the inferior edge (F). The latter method, however, would be likely to leave a slight cicatricial line on either side of the nose. This could be much overcome by making the incision from point E to B obliquely to the plane of the skin, likewise the posterior sides of the triangles mentioned, just as the incisions at B, and across the columna at C are made. Recovery should be complete in five days.

18 WEST TWENTY-FIFTH STREET.

THE INSANITY OF INEBRIETY.

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The term "toxic insanity" describes a form of psychosis, which is due to alcohol, and other toxic agents. The term "alcoholism" refers specifically to conditions following the use of alcohol, while the term "inebriety" when used to describe a similar specific condition, is often inaccurate and vague in its meaning.

To call all drinking persons alcoholics is misleading. The impression from this term is, that such persons are suffering only from toxic states due to the use of spirits. Where the first excessive use of spirits follows from head injuries, shocks, sunstrokes, infectious fever, or distinct drains on the vitality, or from some profound exhaustion, this term is not accurate, for the reason that it is not the cause. The use of spirits in many cases is only a symptom, although it may greatly increase the original causes.

The term inebriety more clearly describes the pathological condition which demands alcohol for its anæsthetic effect, and refers to some depressed state, or some psychic condition which consciously or unconsciously calls for relief which alcohol gives with satisfaction. Evidently, alcohol is not the cause, but merely a symptom, hence, the condition must be one of disease, and organized degeneration. Historically, this fact of disease was recognized in the early civilizations, and long before insanity was thought to be other than spiritual madness. The psychosis or insanity of inebriety is a very old subject, but strangely, it is practically unknown and ignored at present. The theory still exists, that the excessive use of spirits is a moral condition and a vice, and physicians following public opinion accept it as true and acquiesce to both the moral and legal means used to suppress it. Recently, a partial recognition of the diseased condition in extreme stages of inebriety has been conceded, but the means for cure are along the same lines, viz., vice, depravity, and free will. A grouping of some of the facts of this disease, and particularly those which show the insanity of inebriety, will indicate how wide a field of practical psychiatry is still unoccupied.

To all ordinary observation, a periodical drinker resembles the insane, in conduct and reasoning. Such persons use spirits to extreme toxic states, for a brief period, then rigorously abstain for a period, and then relapse. This resembles acute mania in the dominance of the drink impulse overwhelming the mind and body for a period, then subsiding. It also resembles epilepsy in its sudden convulsive onset, and inability to reason and control up to a certain point. Often the periodical drinker is unconscious of the import and meaning of these symptoms. He will suffer from insomnia, headaches, great irritability intense nervous anxiety and dread of loss. He will consult physicians, believing he has serious organic diseases, go off on vacations, make changes in his surroundings and business relations, then all unexpectedly, will drink to great excess, when all these symptoms will disappear. In most cases there are distinct premonitions of the drink storm in conduct, reasoning, and appearance, which the friends recognize, but the victim does not. A large class of the periodical drinkers seem to have some consciousness of the coming attack, and use means to avert it. They often go to hospitals and sanatoria, particularly where they have had some experience before, appearing in a state of great fear and excitement, which quickly disappears. The storm is averted for the time being, and such cases are always very hopeful. In many persons of this class of periodical drinkers, the

premonitory symptoms take on the form of reasoning manias. They make elaborate preparations in business affairs, providing in advance for their absence during the drink attacks.

A number of persons of this class have been noted by their unusual interest in reform work, both in church, and hospital, or even in political affairs. This is noted by the unusual fervor, sincerity, and excitement, which always ends in a drink storm. Often these conditions are veritable delusions, and hallucinations, which are obscure and of short duration.

In some there is great exaltation of mental activity approaching delirium; in others, there is great feebleness and stupidity resembling dementia. A number of such patients under my care showed a remarkable exactness in the periodicity of the drink storm, thus in one instance, the free interval was ninety one days, four and five hours. In another this interval was two hundred and ten days, in the third, every two years, occurring exactly on the fourth of July. In these patients the drink storm broke out at the exact time predicted, or within a few hours of it, no matter what happened, or what the conditions were. The storm, or drink attack, lasted from six to ten days, and was marked by an insane impulse to be continuously stupid and narcotized.

Another class seem to take on a different personality when drinking. The first glass of spirits brings out an entirely different character, in reasoning and conduct. The previously moral, exemplary man, suddenly becomes a moral pauper, a low criminal, an idiot, a tramp, an imbecile, and a great variety of other exactly opposite traits of character, which will disappear as soon as the drink excess subsides.

Some very startling cases of so called "cure" are often noted in the treatment of the periodical inebriate, particularly, at the close of the drink paroxysm.

There are certain atmospheric and electrical conditions which seem to be very active in precipitating the drink attacks. Thus one man never uses spirits except at the seashore; going back to the mountains, or to a certain elevation he loses all taste for spirits and becomes a total abstainer. Another has a continuous thirst for spirits in high elevations and on the mountains, which passes away at the sea level. Climates where the sun shines most of the time, and cloudy moist atmospheres, have been noted as influential causes in exciting the craze for spirits.

The largest class of these circular periodical drinkers are irregular, as to the drink period and the free interval. The causes both external and internal have not been studied. In all patients there is usually an unstable highly sensitive brain and nerve organization with a tendency to exhaustion, on the slightest occasions.

A clinical history shows that heredity is a very large factor in this instability and feeble pain resistance, it also shows that injuries, irregularities of living, defective nutrition, sleep, and excessive strains and drains with other causes predispose to a convulsive condition of nerve energy and depression, for which spirits is a grateful narcotic.

The disease and insanity of this form of inebriety is beyond all question and is an unknown field of most fascinating interest. Another, equally prominent form of psychosis is the inebriate who uses spirits regularly in so called moderation.

The assertion that the so called "moderate drinker" is a pronounced psychosis and fully as insane as the periodic inebriate, will conflict with much of the modern teaching and theories of the day. Recent laboratory research with instruments of precision, sustained by exact clinical studies prove this assertion to be absolutely correct. The common theory that alcohol in small doses may be taken regularly without harm is not true, and it is now possible to measure the anæsthetic effect of alcohol, and its depressing influence on the senses, the functional activity of the brain, and the organs and the nutrition of the nerve cells. Exactly how small a dose can be traced by instruments of precision is not settled, but it is certain that the regular use of small doses can be positively measured in their accumulative effects. Instruments show that alcohol in small doses depresses the sight, hearing, taste, smell, and the touch, and lowers the functional activities of the organs; the rhythmic circulation of the blood is disturbed, particularly in the brain.

Comparative studies of abstainers and moderate drinkers show in the latter, derangement of nutrition, defective elimination, feebleness of control and weakened heart's action; also depressed mental activity, faults of memory, lack of precision and muscular control and lessened endurance. Repeated tests requiring exactness of thought, and precision of muscular power by abstainers and persons using small quantities of spirits, clearly show the feebleness and debility of the drinker. Clinical studies and statistics bring other evidence showing that alcohol in small doses lowers resistance to microbic invasions and acute infectious diseases, and devitalizes the forces of both the mind and body.

Hospital records point to a higher mortality from pneumonia, typhoid, and acute inflammations occurring in moderate drinkers, and that the prognosis of all diseases in this class is graver. These facts are within the observation of every one.

The cumulative action of alcohol used regularly, on the psychic centres of the brain is marked by a degree of exaltation, particularly of the ego, and the development of an unreasoning confidence of strength and ability. In many instances this is a veritable delusion, in which inordinate self esteem and false reasoning of the actual conditions possess the mind. When such persons occupy responsible positions their conduct and work becomes more automatic and mechanical and less original, and more incapable of change and adaptation to new conditions. When the reasoning and judgment is clearly observed, mental inconsistencies, irregularities, and defects are apparent. A little farther on sensory degenerations are pronounced, and defective coordinations and perversions of judgment associated with defective nutrition are noted.

While these changes are not called insanity,

in the broad meaning of the word, they are clearly psychopathic and neuropathic stages of degeneration. Lower down in the scale, the moderate drinker has marked delusions of conduct and thought, considers himself persecuted, and his best friends untrue, loses consciousness of right and wrong, and still believes he has strength to accomplish anything he wishes.

Delusions, hallucinations, and states of dementia with suicide are common terminations both to the periodical and the moderate drinker. In business circles this insanity marked by mental and muscular incompetence, is recognized at once, and the person is relieved from all duty and responsibility; in the social and scientific world the moderate drinker is still regarded as sane and responsible; in one it is experience, in another it is theory.

Modern pathology indicates that the use of alcohol is followed by toxic states, and toxins introduced from without, and formed within producing poisoning and starvation. This added to unknown physical and psychical conditions which alcohol covers up, is followed by a distinct psychosis and insanity.

It is also clear that the continued anæsthesia of the neurones and pain centres is destructive to protoplasm and nutrition. Also, that the continuous use of spirits is cumulative and corrosive in its effects; and farther that the demand for spirits either periodical or continuous, is a condition existing either before spirits were used, or formed after.

The practical question which concerns us all is the recognition of this disease and the possibilities of its prevention and cure. Long ago an earnest group of pioneers began to urge the theory that inebriety was a psychosis and insanity, which was curable as well as preventable. A long period of bitter opposition and denial followed the promotion of this theory. As in all great evolutions of truth, this first period of opposition was followed by a second one of credulity and partial acceptance. This is the realm where the quack flourishes. To-day, quack institutions, so called cures, and specifics are heralded all over the country, and armies of poor victims are attracted by their pretentious claims. Time test and experience have brought these claims to judgment, and the profession realizes that there are no specifics or discoveries of drugs, to treat a psychosis so pronounced and complex as inebriety. This wave of empiricism now passing away, has done much to destroy the old theories of inebriety, and teach the world that this new army of diseased inebriates are curable by the use of exact means and measures along the lines of rational medicine.

The insanity of inebriety by its prevalence and extent, appeals to every medical man in both city and country by the therapeutical possibilities at present in outline, to take up this subject and bring it into the realm of exact science. Hospitals, asylums, prisons, almshouses, and charitable institutions of all kinds are filled with victims, made so directly or indirectly by alcohol. The disease of inebriety is being rapidly recognized in the world of finance, and the moderate

and excessive user of spirits is put aside as incapable and unable to do exact work, requiring full possession of the reason and senses.

The quacks, with their mysteries and pretensions confirm the disease theory, but in scientific medicine, except for a few pioneers who assert the inebriate to be devitalized, degenerate, diseased and insane, there is not a single college where the teachings of these facts are considered worthy of attention.

Every medical man in the country is called upon to treat inebriety, and yet he is without practical knowledge of the psychosis of these cases, and the possibility of therapeutical help and cure. The great majority of the profession whatever they may think, give their tacit consent and approval to the most stupid measures for prevention and cure. Over one hundred thousand inebriates die annually without anything being done for them, except along moral and legal lines.

The question of cure and prevention is a scientific one, which only the trained physician can answer. The threatening aspect of this problem, from its hygienic and social sides calls for a medical and scientific study, which all colleges, leaders and teachers must supply, and this great army itself, appeal to us mutely for help. It is our duty, as scientific men, to take up this subject and point out the physical causes, and lift it out of the range of credulity and quackery into the field of exact science.

The insanity of inebriety is an intensely practical and most vital subject for every physician.

THE UNTRAINED NURSE: HER LEGITIMATE FIELD AND HER OPPORTUNITY FOR SELF-IMPROVEMENT.

By JOHN H. WIGGINS, M. D.,
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What is the relationship of the untrained nurse to the practitioner? Is she a factor to be reckoned with and encouraged to utilize every means to increase her ability, or is she to be tolerated only when the hospital nurse cannot be secured or the latter's higher rate of remuneration cannot be afforded by the patient? Without attempting to emphasize any shortcomings of the nurse of hospital training, or any real or imagined defects in that educational system, the writer seeks to interpret the increasing importance which the work of the well taught untrained nurse is assuming.

There is an urgent need, in the practice of the great majority of physicians, for nurses who can be afforded by the large proportion of people (placed by some writers as high as eighty five per cent.) who never engage the hospital nurse. These nurses, who come between what has been called "that busy and harmful class without any training whatever who are such a bane to the doctor and detriment to the patient," and the hospital graduate, occupy a place of the utmost importance, and any movement which will make it possible for women already nursing to adopt approved methods, or which will bring well taught intelligent women to offer their services at moderate rates of charge, must be of most widespread benefit—a benefit of which the city practitioner who

rarely comes into contact with any but hospital graduate nurses can form no just estimate.

There exists in the city in which I practice a nurses' association whose members agree to accept no engagement at less than \$20 a week. I am familiar with the qualifications of these nurses and know that there is a wide difference in the value of their services, and that the efficiency of some is double that of others, yet their organization would compel patients to pay all on the same basis. This is a manufacturing city and the average income does not exceed \$12 a week. This condition must certainly hold good in the larger centres of population, while in the smaller communities the trained nurse at \$20 a week is scarcely even thought of, notwithstanding that, as Dr. Berry's recent article on *The Country Surgeon and His Nurse* states, the necessity for more nurses in the country "has become imperative." Under these conditions shall the small wage earner be required to choose between the high priced nurse and what a writer has called that *bête noire*—the neighborhood granny?

The standard which has been established for the hospital trained nurse requires from two to four years of study and hard service so that a charge of from \$20 to \$40 a week may not be considered exorbitant, and those patients who can afford this expense will not begrudge it as unearned. But to the great middle class of our cities such a price is strictly prohibitive. In making this statement I have no criticism to offer on the trained nurse for the rate of remuneration which, while it brings her within reach of but fifteen per cent. of population, is nevertheless only commensurate with the rigors and the length of her hospital training.

With these conditions intimately affecting a very large portion of the practice of many physicians, the fact most worthy of remark is that a solution of the problem regarding the high priced nurse has been so late in coming, for of the 115,639 nurses which the census of 1900 gives as the total number in the United States, only 11,892 or one tenth, are specified as trained. The question is therefore not, "how shall these nurses be provided?" but, "how are these practical nurses, who for various reasons are unable to get hospital training, to provide themselves with the knowledge which is necessary in their work?"

I am taking for an example of the untrained nurse a comparatively new class which has not been in existence for more than five years but is attracting especial notice at this time, by reason of the increased value of their services over those of the untaught practical nurse. This class of nurses is composed of those who "have taken courses in 'correspondence schools,' and possess quite as much theoretical knowledge as their graduate sister."

It is quite probable that comparatively few physicians have seriously considered this movement to give the untrained nurse greater efficiency through prescribed and systematically directed home study courses, perhaps believing that an institution conducting such courses encroaches upon the hospital training school, or that this theoretical training must at best prove superficial.

There is not at the present time any general

agency for providing instruction in nursing other than such a school as that to which I refer, nor have I seen any other means suggested whereby the efficiency of the members of this great body of more than one hundred thousand nurses can be increased, or women who cannot undertake hospital training be fitted to become such practical nurses.

It may be suggested that the great number of textbooks on nursing contain the theoretical instruction these untrained nurses require. This is true in a sense, yet the average out of school student of thirty-five, even if she has some one to outline the list of works required, finds it utterly impossible to arrange from such works a course of study which bears any relation to the symmetrical course of preparation which can be offered her by such a school, to say nothing of the stimulated interest aroused by the individual direction and instruction.

Such a school does not encroach upon the province of the hospital training school. Even if we eliminate the correspondence school as a factor, the number of trained nurses will not be altered for the reason that the total number of nurses being graduated by the hospitals at all times represents their maximum capacity and could not be increased even were there an increasing demand for the fully trained hospital nurse.

In this article we shall dismiss from consideration the nurses of hospital graduation who undertake correspondence work for review study, although this is an important work of itself, and also a considerable number who complete these courses as preparation for hospital training. These students, as a rule, are women who are well beyond girlhood. Of several thousand students of a correspondence school of which I have knowledge, considerably more than fifty per cent. are so called "practical" nurses of experience of an average age of approximately thirty-five years who seek a knowledge of the principles of present day nursing.

The home study method of teaching the practical proceedings of nursing is based upon the elaboration of even the most simple procedure by means of a description which does not overlook the most trivial detail in picturing the method. In giving this accurately explicit instruction strict emphasis is also laid upon the dangers and precautionary measures for guarding against them.

The student who gains a clear and accurate conception from a printed page has a mental picture, which in actual experience is recalled and recognized as something perfectly familiar. In fact, her lessons may be better learned, her perceptions may be more accurate than those of the student whose attention is dissipated by a continued necessity of doing, and who has no time to review or summarize the important points of her work—no time for concentrated mental effort without which there is little tangible and valuable knowledge.

After studying the methods of bedmaking, moving the patient, changing garments, bathing, taking temperature and pulse, use of the hypodermic syringe, etc., the student is given directions for practice whereby she may acquire proficiency. If the reader has never before considered the teach-

ing of nursing in this light, he will possibly be surprised when he realizes in how large a part of the procedures most frequently required of the nurse, proficiency and even deftness can be acquired by practice in the home and better with a subject in health than with a sick patient.

The practicability of preparing women without hospital training to undertake and competently discharge the duties required of the nurse in a large majority of the cases which come under medical supervision, can no longer be questioned. Has it never occurred to the reader that there is an unlimited amount of clinical experience to be gained outside of the hospital, and that a woman who has conscientiously studied and mastered the principles of nursing need not lack an opportunity to apply her instruction under medical supervision? The woman who has this thorough technical knowledge will willingly accept clinical instruction at the hands of the physician, and will quickly learn those details in treatment in which she needs personal instruction, as the use of the catheter and hypodermic syringe.

Given a start by means of such explicit instruction and practice, such a woman will, in a remarkably short time, acquire a degree of proficiency which enables her to meet every requirement of the ordinary case, and this skill is anything but superficial because, before undertaking to nurse there has been a thorough grounding in the principles of the art. It will not suffice for the physician who has not had one of these better taught untrained nurses under his direction to dismiss this subject with the conclusion that the student of the so called correspondence instruction cannot be other than superficially taught. As a matter of fact, such a nurse is quite likely to possess a knowledge of nursing and its principles which will be found surprising in its extent and accuracy.

The properly conducted school for giving this instruction will not claim to graduate "trained" nurses. It will distinctly state to its prospective students that they cannot expect to take their places by the side of the graduate of three years' hospital training. Its certificate will only certify to the honorable completion of a course of prescribed study, and the evidence given of ability in its mastery. Neither will young girls be accepted for students. There is, therefore, no misleading of young women into the belief that herein lies a short cut whereby they can become trained nurses.

Of course the correspondence school itself can never supply so large a body of students with the clinical instruction given in a hospital training school, but within its necessarily limited sphere it can supply a course of instruction in methods which are modern and approved and by lessons in learnable form; it can equip the student with a knowledge of practical procedure and the ability to relieve suffering; it can stimulate the habit of intellectual pursuits and present the ideal to be attained by the individual as well as in her practical work; it can provide a new humanitarian interest and aid the nurse in becoming an educational factor in the homes of her patients; it can supply lectures that are a consensus of the most advanced knowledge in medical science and the art of nurs-

ing. In a word, it can give its students mental and moral development, which is the aim of all education no matter where it is obtained or what its methods. The administration of the institution can be honest and efficient, and it can give to its students the personal encouragement that is so effective and necessary in all educational work.

What the individual does with this knowledge will depend upon her ability to respond to it. Some, through its guidance, will become leaders, others will acquire less competency, and some will fail—as by any other method and as in any other vocation. I recognize that it would be idle to assert that nurses completing such study prove infallible, but I do maintain that upon the whole they are a body of earnest, sincere, conscientious, and capable women.

Without in the least minimizing the value of the highly trained nurse in critical cases, there is a growing belief that it is not necessary for a woman, in order to be competent to nurse in the ailments most frequently encountered, to spend three years in hospital training. In an age which has demonstrated the use of every labor saving device, educational methods are subjected to the closest scrutiny in order that economy can be used in accomplishing the final aim with the least expenditure of time and effort. One has to go back but a very few years indeed to recall the criticism with which those in academic circles belittled the value of the method and work of the well known correspondence schools which have since become such important factors in the educational work of the country that great universities have now adopted the very methods which so few years ago were considered unacademic and superficial.

In thus advocating a new method in the field of nursing which has found favor and meets the requirements of patients, nurses, and physicians, let me make it very clear that I have not sought to underestimate the value of hospital training, at least up to a certain length of period, but that my contention relates to a distinct class of nurses whose status shall be above the untaught nurse and who will be fitted to meet the demand of those who do not need, who cannot secure, or who cannot afford to pay the higher rates of the trained nurse.

The patient or physician, when seeking a nurse selects the one who is successful whether she be called trained or untrained, professional or non-professional, hospital or practical. It matters not what or where her training if she is proficient and superior in her qualifications for the case in hand. Whatever her training and wherever found this is the nurse who will supersede all others.

In the final analysis the test of a method of instruction is its success. If it is found that a woman can, by another method than that of hospital training, become competent to exercise the function of the nurse in the majority of cases, that method has a *raison d'être* which not only justifies, but demands the attention and investigation of every unprejudiced and thoughtful physician and layman.

It certainly will not be an unwholesome condition which will compel the trained nurse to look to her own qualifications for private nursing to

maintain her superiority and to place herself above the effects of competition, because of this new standard set by the untrained nurse.

GIFFORD BUILDING.

Therapeutical Notes.

Indications Warranting Prostatectomy.—Cathelin (*Journal des praticiens*, October 24, 1906, and *Revue de thérapeutique*) says that prostatectomy is indicated in recurring acute retention, but not in the first attack of retention. It is also advisable in cases of chronic retention, and it becomes indisputable when there are also stones in the bladder. The operation is contraindicated in patients suffering with cardiac, renal, or pulmonary disease; also in prostatic cancer, and when the bladder has lost its contractility.

The Intravenous Injection of Colloidal Silver in Puerperal Fever.—Cohn (*Revista de chirurgie*, June, 1906) reports that in the course of one year in the Lying-in Hospital at Bucharest, 28 cases, chiefly severe puerperal infections, were treated by the intravenous injection of colloidal silver, and 23 were cured. This treatment was not undertaken except in cases which did not react favorably under the usual treatment of puerperal sepsis. In the latter cases larger doses were used than at first, sometimes to the extent of 0.25 (grammes) daily, and Cohn declares that though not a specific, colloidal silver must be considered a useful adjuvant in the treatment of severe septic processes in childbed.—*The British Gynaecological Journal*, November, 1906.

Sodium Sulphate for Constipated Dyspeptics.—In cases of dyspepsia the nonirritating purgatives are to be preferred. Ide (*Revue médicale de Louvain*, November 15, 1906, and *Revue de thérapeutique*) excludes in such cases the resinous cathartics; he likewise prohibits calomel, and even castor oil; and prefers the salines, such as sodium and magnesium sulphate. The latter, by experiments on dogs, he found to be more irritant to the intestine than the sodium salt. This he gives in the strength of two per cent. solution in water, by the mouth or by enema. If taken by the mouth in more concentrated form, the dose should be followed by sufficient water to make it up to the two per cent. strength. The solution should never be weaker than two per cent., and this strength can also be used for injection into the colon. If the patient be thirsty, a preliminary enema of warm water may be given, and when this has been absorbed, it can be followed by the sodium sulphate solution. Sodium chloride should not be added, as it facilitates absorption, as does also the dilution of the solution. When the stomach is dilated, the rectal route of administration is recommended.

Heart Tonics Contraindicated in True Angina Pectoris.—Lemoine (*Le Nord médical*, November 15, 1906), in a paper on the treatment of angina, warns against the use at the time of access of the ordinary heart tonics, such as digitalis, ergot, caffeine, strophanthus, when the case is one of true angina with arteriosclerosis and resulting cardiac ischæmia. These remedies all increase the hyper-

tension, which is already too high. The time to use these is when the myocardium, becoming affected by sclerosis, is feeble and insufficient. Huchard likewise refuses to prescribe at the access of true angina, the ordinary nerve sedatives, like antipyrine, potassium bromide, sulphonal ethyl carbonate (urethane), chloral, or paraldehyde. Belladonna and cocaine are also regarded as useless. In his opinion the therapeutics of coronary or aortic angina is summed up in amyl nitrite, trinitrine, nitroglycerin, and sodium iodide. As the salts of potassium have an unfavorable action upon the cardiac muscular fibre, potassium iodide should not be given continuously for too long a time, but should be replaced by sodium iodide. In pseudoangina, where the pain is the principal thing to be considered, Lemoine declares that general sedatives and hypnotics must not be refused. Do not forget to treat the general health, and especially the diabetic or gouty element causing the angina. Do not regard local applications as useless (counterirritants, ice, or leeches), especially in cases of angina pectoris of infectious origin.

The Local Treatment of Gonorrhœal Arthritis.

—In a recent lecture on the treatment of gonorrhœal rheumatism, Professor Abbut Robin (*Revue de thérapeutique*, December 15, 1906) summarizes his experience with several methods. In the first place, methyl salicylate and other antirheumatic agents are useless. Compresses wet with Van Swieten's solution (corrosive sublimate gr. $\frac{1}{2}$ to one ounce of alcohol and water, 1 to 10) are valuable; should they excite pain and redness of the skin, they may be replaced with strips of gauze, moistened simply with cold water. Immobilization of the joint during the acute stage should be as complete as possible. When the joint becomes less painful, massage by light stroking and gentle passive motion should be instituted in order to prevent ankylosis. The method of Bier of causing temporary hyperæmia with local œdema in the affected joint has succeeded in the hands of Hirsch, who reported ten cures in twenty-five cases, but the experience of Robin in only two cases was not sufficiently favorable to lead him to recommend it. The pains were not diminished, but quite the contrary; in one case the symptoms were apparently aggravated. On the other hand, he had three cases in which the metallic ferments were employed with very encouraging results. In these cases he had used palladium in a colloidal state, giving it hypodermically in doses of from one to three hundredths of a milligramme to the cubic centimetre. There was rapid diminution of the pain, and a remarkably prompt resolution of the arthritis followed. He had also employed in other cases silver in a colloid state in the form of an ointment, and had been very well satisfied with the results in every case in which he had used it. In one case in which the wrist was affected he had used emanations of radium. A compress which had been made radioactive by exposure to radium was applied with the patient's consent. Robin was astonished by the rapidity with which the pains ceased and resolution took place. It should be mentioned, however, that at

the same time the patient was attacked by orchitis, which is usually accompanied by cessation of other manifestations, but Robin has never previously seen retrogression take place with such rapidity. It would appear, then, that this treatment has a great future. When blenorrhagia is present in cases of joint inflammation, it is not now the practice to allow it to continue, but it is treated by irrigations of potassium permanganate (1 to 1,000) and by urethral injections of albuminoid silver salts. Internally, the following is a good combination to give:

R. Powdered cubebs, 40 grammes;
 Ferric potassic tartrate..... 3 grammes;
 Calcined magnesias, 10 grammes;
 Syrup of quince,..... q. s.
 M. Make a paste, and divide into boluses the size of a hazel nut. Take five or six of these in the course of the day.

When the inflammation of the joint has subsided, efforts are made to restore the mobility of the joint by massage, systematically applied, not only to the immediate vicinity, but to the muscles more remote in order to increase the vitality of the limb, and reeducate the muscles. Electricity, both galvanic and faradic, aids the restoration of function to the parts affected. Revulsion is also useful, but instead of the blisters which he formerly preferred, Robin now employs application of tincture of iodine, or linear cauterization, superficial and frequently repeated. Baths containing oil of turpentine and soft soap (an 100 grammes) by the English method, are valuable, but Robin prefers local applications, either baths or dry heat by using sand bags and the heating apparatus (oven). Clay or mud baths applied to the joint affected are worthy of consideration. Vapor baths containing terebinthines are constantly employed, and often yield surprising results when carefully supervised. The general state of the patient must be looked after, and a tendency to anæmia when it exists can be counteracted by preparations of iron. Later this can be alternated with a solution of sodium arsenate (0.05 gramme) with potassium iodide (5 grammes) in distilled water (300 grammes); dose, one tablespoonful on rising in the morning and one just before breakfast each day. Treatment of the joint by aspiration may be necessary in cases of large effusion, but simple evacuation is not recommended. Gaillard's modification, however, is practiced with good results. A syringe of a capacity of twenty cubic centimetres is employed, and the fluid is first withdrawn from the joint; then (the cannula being left in place) a solution of corrosive sublimate (1 to 4,000) is introduced into the cavity, from which it is withdrawn in a few minutes. This procedure is repeated four or five times in succession. In place of the sublimate, a weak solution of phenol may be used, or even a solution of gold and sodium chloride (1 to 2,000 or 1 to 4,000) with excellent results. Arthrotomy or surgical intervention proper will only be required in cases of extreme urgency, or where the joint is obviously suppurating. In all other cases medical treatment as indicated will prove sufficient.

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THE MARY PUTNAM JACOBI MEMORIAL.

A strong life work, brilliantly conceived and ably carried out, is an inspiration to the workers in any profession, but when the worker is a woman and a pioneer in her work, when she has succeeded in the face of obstacles in achieving her ideals and making them possible for other women, it is small wonder that representative men and women draw together to honor her memory. Physicians, both men and women, and others who knew the late Dr. Mary Putnam Jacobi filled the auditorium of the Academy of Medicine last Friday evening to speak to one another of her life and to plan a memorial in the form of a scholarship for women in medicine. Dr. Osler, Dr. Felix Adler, Dr. Dana, Mr. Richard Watson Gilder, Dr. Elizabeth Cushier, and Mrs. F. Kelley, all of whom had felt the influence of her work, spoke of her power, of her contributions to medical literature, and of her keenness of perception and wit.

From glimpses of her student days, ending in her receiving one of the first diplomas granted to women by the medical school of Paris, one could gather some idea of the energy and determination of her character. But from letters in which she outlined her ambition it was clear that not for a moment was she led by desire for her own gain and glory, but by the burning desire to help women to work out the laws of health for themselves and to have freedom to teach others. To this end she devoted herself, and the success

of a medical college for women, the amassing of a library for which she had so yearned in youth, and the health enforcements that have been brought about by the Consumers' League were all a part of the effort of her life.

Dr. Osler's feeling of regret that Dr. Jacobi's life had not been devoted to a purely scientific career was not echoed by all; for though doubtless many agree with him that women are more eminently fitted for scientific and laboratory work than for practice, and in the former line make up by a more delicate technique and greater patience with minutiae what they are assumed to lack in initiative and independence, yet, as Dr. Jacobi lived through the days when laboratories and scientific data were being evolved, it was a greater achievement that she should, by her tact and her grasp of the situation, have allayed that strong animus which barred women from the medical schools and societies, and have exerted such an influence that almost everywhere the doors are now open to them.

The scholarship which will bear her name will be used to defray the expenses of some woman medical student in whatever country she wishes to study. By means of it it may be possible that the woman may arise for whom Dr. Osler says he has been waiting, a woman with the type of mind of Mary Putnam Jacobi, who will have an intellect so commanding that, with training, she will take rank with the Harveys, the Hunters, the Pasteurs, and the Virchows. It seems fitting that the friends of this able and gifted woman should perpetuate her memory in such a way.

TUBERCULOUS DISEASE IN CATTLE.

In two editorial articles published in our issue for September 8, 1906, entitled respectively *The Avenues of Tuberculous Infection* and *Tuberculous Infection by the Digestive Canal*, we spoke of the important experimental work of Dr. E. C. Schroeder and Mr. W. E. Cotton, of the Bureau of Animal Industry, regarding the alimentary canal as an avenue of tuberculous infection, also of their ingenious deductions. We are glad to see that their researches have met with wide attention, and that their publication has been followed by that of an instructive pamphlet by Dr. D. E. Salmon, the late chief of the bureau, entitled *Tuberculosis of the Food Producing Animals*, issued by the bureau as its Bulletin No. 38.

Dr. Salmon's pamphlet is largely devoted to the problem of freeing cattle from tuberculous disease. Interesting examples are recounted of the gradual elimination of tuberculous disease from herds of cattle in Wisconsin and in Connecticut,

but careful study of the pamphlet will, we think, leave the reader with the impression that segregation of animals that react to the tuberculin test is inadequate, as well as the "Bang method" and Ujhelyi's modification of it, and that the absolute destruction of all tuberculous cattle can alone lead to the desired result.

The conviction is certainly gaining ground that tuberculous pulmonary disease in the human subject is not so often incurred by inhaling tubercle bacilli as by taking them into the intestinal canal. Hence the prohibition of expectorating in public places must be held to be secondary in importance to the close inspection of animals intended for food, and the absolute rejection of those that are found to be tuberculous, including that of calves cast by tuberculous dams, all reliance on the segregation of these young animals or their feeding on sterilized milk or the milk of cows that do not react to tuberculin being given up. Of course we must not discard the theory of aerial infection, and we must not cease to guard against street dust as a vehicle of infection, but we must take due note of the possibility of infection by way of the alimentary canal, and govern ourselves accordingly.

THE ACTION OF LIGHT ON THE OXIDIZING FUNCTIONS OF THE BLOOD.

Workers in phototherapy, in electrotherapy, and in radiotherapy have uncovered rich mines of previously unguessed therapeutic lore, and the variety of clinical observations made by Major Woodruff and recently published in his volume on the influence of sunlight on the human species in the tropics has opened up a wealth of new suggestions in the following out of which modern methods of investigation will undoubtedly lead to striking and practical results.

The pioneer, however, often has the advantage in marshalling a goodly array of empirical facts, leaving for his followers the no less interesting but sometimes less startling task of elaborating the details and uncovering the general principles. One of the series of details concerns itself with the action of light on the oxidizing capacity of the blood. Haldane, as far back as 1896, had made the interesting observation that blood which had been shaken in a flask with air containing carbon oxide showed a strikingly diminished affinity for the carbonic oxide in the light as compared with that in the dark. It had been inferred that his results were due to the filtering out of the ultraviolet rays in the passage of the light through the glass of the window and that of the flask, but up to the present time no confirmation of that view has been possible.

On the general problem of oxidative capacity and light action, K. A. Hasselbach, in the recently published *Festschrift* of the students of Hammarsten, the well known physiological chemist of Sweden (*Festkrift tillägnad Olof Hammarsten. Supplement. Upsala Läkareförenings Förhandlingar*, vol. ii, 1906), by a series of ingeniously contrived experiments shows that light has a marked effect upon the tension of the oxygen in the blood, and also that there are more or less constant modifications in the respiratory affinities of the cells while the blood is under the influence of light and darkness. Just what relationship the changes have to anæmia and the tired feeling, for instance, of spring, with the increasing sunlight, or what the power may be that causes sleepiness and the subjective sense of weakness following a chemically active light bath, the author does not state, but he maintains that these phenomena are closely and logically related to the influence of light on the formation and activation of oxygen in the blood. Further studies which he promises are to be hoped for, as he has the expectant attitude without giving much comfort in this highly interesting field.

SKILLED NURSING FOR PERSONS OF SMALL MEANS.

Physicians give their services ungrudgingly to the poor, and they grade their charges according to the resources of those who are able to pay something, however inadequate it may be. The same is true of other professional men, clergymen and lawyers, for example. Advice, sympathy, and encouragement are rated far below merchandise in value. This we say without denying that mercantile men are courtly, gallant, and generous on occasions. But the tempering of the wind to the shorn lamb is for the most part peculiar to the learned professions. We have never had any doubt that the noble profession of nursing ranged itself on this plane, and we are confirmed in our thought by an excellent article by Miss C. May Hollister, entitled *How Can Skilled Nursing Service be Procured by the Family of Moderate Means?*, read at the ninth annual convention of Nurses' Associated Alumnae and published in the January number of the *Trained Nurse and Hospital Review*.

Humane feeling is fairly exuded in Miss Hollister's article, which we are glad to take as representative of the prevailing sentiment among our trained nurses. "Some years ago," she says, "the father of a young girl, sick and needing a nurse, called at the headquarters where I was registered. He wished to see me and inquire my price. Being a well dressed man and coming

from a suburban town inhabited by the wealthy, I naturally told him my price was twenty-five dollars per week. After reaching the case I learned that the father was a conductor on the railroad. Then I wished there were some means by which a reduction in price could be made to him." But she seems to have found it impracticable to carry out her benevolent inclination without hurting the man's feelings. Subsequent experience has probably taught her that the bars may be let down without hurt to the beneficiary's self respect, and we do not doubt that she has taken advantage of the possibility. Certain it is that whoever is pervaded by the benevolence that evidently actuates Miss Hollister can always find a way of putting it in operation. Nurses need not fear that their ordinary fees will suffer reduction by their occasional remission for good cause. We believe that our best nurses are always ready to forego a fair proportion of their usual remuneration in the service of those who cannot afford to pay the customary charges.

THE OPTIMISM OF THE CONSUMPTIVE.

Hospital physicians whose work brings them much in contact with cases of pulmonary tuberculous disease cannot have failed to observe certain changes which have taken place in recent years in this class of cases. These altered conditions may be attributed directly to the campaign of popular education and active propaganda which have been carried on so energetically and with such encouraging results. A decade ago most consumptive patients presenting themselves for treatment in the clinics were in the more or less advanced stages, the truly incipient case being relatively rare; now a majority, perhaps, of the cases may be fairly described as incipient or only moderately advanced. This beneficial change, which brings the patient to the physician at a time when treatment may reasonably be expected to be of some avail, has been brought about by a better appreciation of the significance of the early symptoms on the part of the public, and also by greater care and skill on the part of physicians generally in arriving at an early diagnosis.

Coincident with this change has been the disappearance, in great measure, of the fatuous optimism which was made so much of by the older writers on consumption, and which is such a curious and characteristic psychical symptom of tuberculous disease in its last stages. The painful spectacle of the advanced consumptive with glistening eye and tell-tale hectic flush babbling cheerfully and with bated breath of his "stomach cough," his "asthma," or his "bronchitis" is no

longer so frequent as it was some years ago. This singular *spes phthisicorum*, with its accompanying factitious sense of exaltation and well being, was partly due to the exhilarating effects of the febrile intoxication which is regularly a part of the tuberculous process and partly the result of the patient's serene lack of knowledge as to his actual condition. It is now, perhaps, less easy, on account of his familiarity with the widespread popular literature, for the advanced tuberculous patient to lull himself into a fancied state of security. There is here a pathetic aspect of the changed conditions which will appeal to the sympathies of the physician and the philanthropic social worker. This loss, however, of the optimism of ignorance is small indeed when compared with the positive gain in well grounded hope of recovery which the patient with incipient tuberculous disease may now confidently feel, owing to his understanding of the nature of his disease and to his intelligent cooperation in the treatment which it alone makes possible.

CONCEPTION DURING AMENORRHŒA.

Dr. Louis Bricout has recently presented a thesis on a most practical question which has been frequently discussed, namely, that of conception taking place during amenorrhœa, whether the latter occurs during lactation or whether it is essential. Relative to the first point, Bricout points out that amenorrhœa is much less frequent during lactation than is generally admitted, or at least, than was admitted for a long time. The researches of Boissard show that amenorrhœa is far from being a frequent phenomenon during the entire course of lactation, and on the contrary, it is rather rare, since he found that there was hardly one nursing woman out of four who was amenorrhœic. And, still more, conception during this amenorrhœa is very frequent, because, out of 392 multiparous women, Bricout found fourteen in whom pregnancy began during amenorrhœa; in other words, a proportion of 3.50 per cent. This occurrence of conception during lactation would lead one to suppose that, in spite of the absence of menstruation, ovulation continued normally. In this respect Bricout relates a very curious case, that of a woman, thirty-five years of age, who had, after the age of twenty years, seventeen pregnancies, and in all but the first of these pregnancies conception took place during the amenorrhœa of lactation.

In the so called essential amenorrhœa, that is to say, amenorrhœa due to a pathological change in the genital organs, conception is far less frequent, but, nevertheless, it is met with, and here two conditions may be present. In the first case

one is dealing with women who have never menstruated, and in the second with those who have menstruated for a certain time and then stopped without any recognized cause. Now, in both instances conception may take place, so that, although it may be said that instances of pregnancy occurring during amenorrhœa are in reality quite infrequent, if the amenorrhœa of lactation is excepted, they are sufficiently numerous to allow one not to consider sterility as probable in women who do not menstruate, but have healthy and well formed genital organs; and this is most important to bear in mind, because frequently physicians are consulted on this very question in relation to marriage.

News Items

NEW YORK CITY AND STATE

The Elmira Academy of Medicine. At a meeting of this academy, held on Wednesday, January 2nd, the election of officers resulted as follows: President, Dr. H. W. Fudge; vice-president, Dr. Ross G. Loop; treasurer, Dr. Charles G. R. Jennings; secretary, Dr. Alfred J. Westlake.

The Medical Society of the County of Richmond, N. Y.—At a meeting of this society, held at Staten Island, on Wednesday, January 9th, the Honorable Sidney F. Rawson read a paper on Medicine and Surgery, as Related to the Law.

The Syracuse Academy of Medicine.—The following programme was arranged for a meeting of this academy held on Tuesday, January 8th: Demonstration of an Instrument for Exact Localization with the X Ray, Dr. C. E. Coon; Diabetes, Dr. H. C. Baum; President's Annual Address, Dr. G. M. Price.

The Medical Society of the County of Ontario, N. Y.—The following programme was arranged for a quarterly meeting of this society, held at Canandaigua, on Tuesday, January 8th: Tumors of the Thyroid Glands From a Surgical Standpoint, by Dr. M. B. Tinker, Clifton Springs; Preventative Medicine, by Dr. C. B. Braman, Clifton Springs; President's Address, Dr. W. B. Clapper, Victor.

The Medical Society of the County of Dutchess, N. Y.—An interesting programme was presented at the one hundred and first annual meeting of this society, held at Poughkeepsie, on Wednesday, January 9th. The officers of the society are: President, Dr. J. H. Cotter; vice-president, Dr. D. H. MacKenzie; secretary, Dr. R. W. Andrews; treasurer, Dr. D. B. Ward.

The New York Pathological Society.—The programme arranged for a meeting of this society, held on Wednesday evening, January 9th, was as follows: Reaction for Proteine in the Urine, by Dr. F. C. Wood; A Case of Old Rupture of the Liver, by Dr. J. H. Larkin; A Case of Primary Carcinoma of the Liver, by Dr. James Ewing; Antileucoprotease of Birds and Mammals, by Dr. E. L. Opie and Miss B. I. Barker.

A Proposed Mary Putnam Jacobi Fellowship.—Announcement was made at a service held in memory of Dr. Mary Putnam Jacobi, at the Academy of Medicine, on January 4th, that the Women's Medical Association had undertaken to raise a fund of \$25,000 to establish a scholarship which shall bear the name of Mary Putnam Jacobi. The income from this source will be used to defray the expenses of some woman medical student who desires to travel and study in foreign countries.

The Saratoga, N. Y., Medical Society.—The programme for a meeting of this society, held on Friday evening, January 4th, included the following papers: Treatment of Colles Fracture and Fractures of the Ulna and Radius, Including Fractures of the Elbow Joint, by Dr. A. S. Downs; discussion, by Dr. J. T. Sweetman, Jr.; Treatment of Fractures of Humerus and Clavicle, Including Fractures of the

Shoulder Joint, by Dr. J. B. Ledlie; discussion, by Dr. Frank Sherman.

The Buffalo Academy of Medicine.—The programme for a meeting of this academy held on Tuesday evening, January 8th, consisted of A Discussion of the Plans for Improving and Increasing the City Water Supply. The various proposed measures were discussed by Colonel Francis J. Ward, Commissioner of Public Works; Mr. George R. Sikes, civil engineer; Mr. Frank J. Tresise, civil engineer. Discussion was opened by Councilman John J. Smith and Dr. Peter W. Van Peyma.

The programme for a meeting of the *Section in Medicine*, to be held on Tuesday evening, January 15th, consists of a symposium on Gastric Ulcer, arranged as follows: (a) Medical Aspects, Dr. Albert E. Woehnert; (b) Surgical Aspects, Dr. Marshall Clinton; (c) discussion, Dr. Charles G. Stockton.

Society Meetings for the Coming Week:

MONDAY, January 14th.—Society of Medical Jurisprudence, New York; Corning, N. Y., Medical Association (annual); Society of Alumni of St. Mary's Hospital, Brooklyn; Waterbury, Conn., Medical Association (annual).

TUESDAY, January 15th.—New York Academy of Medicine (Section in General Medicine); Buffalo Academy of Medicine (Section in Pathology); Ogdensburg, N. Y., Medical Association; Medical Society of the County of Kings, N. Y. (annual); Binghamton, N. Y., Academy of Medicine; Clinical Society of Elizabeth, N. J., General Hospital; Syracuse, N. Y., Academy of Medicine.

WEDNESDAY, January 16th.—New York Academy of Medicine (Section in Genitourinary Diseases); New York Society of Dermatology and Genitourinary Surgery; Woman's Medical Association of New York City (New York Academy of Medicine); Medicolegal Society, New York; New Jersey Academy of Medicine (Jersey City); Buffalo Medical Club; New Haven, Conn., Medical Association (annual).

THURSDAY, January 17th.—New York Academy of Medicine; Newark, N. J., Medical and Surgical Society; German Medical Society, Brooklyn.

FRIDAY, January 18th.—New York Academy of Medicine (Section in Orthopædic Surgery); East Side Physicians' Association of the City of New York; New York Microscopical Society; Brooklyn Medical Society; Clinical Society of the New York Postgraduate Medical School and Hospital.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending January 5, 1907:

	January 5.		December 29.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	40	9	37	12
Smallpox	5	..	1	..
Varicella	118	..	105	..
Measles	157	12	124	3
Scarlet fever	225	14	205	6
Whooping cough	66	13	71	11
Diphtheria	298	53	304	30
Tuberculosis pulmonalis	342	180	311	183
Cerebrospinal meningitis	9	14	5	9
Totals	1,260	295	1,163	254

PHILADELPHIA AND THE MIDDLE STATES.

Philadelphia Weather for 1906.—The year 1906 in Philadelphia was an unusually hot and wet year. The excess in temperature since January 1st was 708 degrees and the excess in rainfall 12.01 inches.

The Clinical Society of the Elizabeth, N. J., General Hospital.—The programme for a meeting of this society, to be held on Tuesday evening, January 15th, includes a paper on High Frequency, by Dr. Frank Warncke.

The Philadelphia Polyclinic and College for Graduates in Medicine is at present engaged in extending its plant by the erection of a building to the east of the present property, which will be devoted entirely to the outpatient department.

Philadelphia Orthopædic Hospital.—At the annual meeting of the contributors to the Philadelphia Orthopædic Hospital and Infirmary for Nervous Diseases, which was held on Monday, December 31st, Mr. C. Hartman Kuhn

and Mr. John S. Newbold were reelected managers, to serve four years. Mr. Charlton Yarnall was elected a manager to succeed David Pepper, deceased.

Charitable Bequests.—By the will of Anna C. Griffith, the children's ward of the Medicochirurgical Hospital, the Children's Aid Society, and the Seashore Home for Children at Atlantic City, N. J., receive \$2,000 each. By the will of Henry Rowland, Jr., the Church of the Good Shepherd, of Radnor, Pa., receives \$5,000, which is to be used for the maintenance of two hospital beds. The Children's Seashore Home, at Atlantic City, N. J., receives \$2,000.

The Obstetrical Society of Philadelphia.—At the regular monthly meeting of the Obstetrical Society of Philadelphia, held on Thursday evening, January 3rd, Dr. George Ercy Shoemaker reported cases of vaginal hysterectomy. Dr. Brooke M. Anspach and Dr. Henry R. Alburger reported a case of chorioepithelioma. Dr. William H. Wells read a paper on the Symptoms and Treatment of the Toxæmia of Pregnancy. Dr. John C. Hirst read a paper on the Treatment of Eclampsia, Based Upon the Cases at the University of Pennsylvania Hospital.

The American Hospital for Diseases of the Stomach was formally opened on the afternoon of Thursday, January 3rd. Dr. John B. Shober made an address. The medical staff is composed of: Chief physician, Dr. Lewis Brinton; chief surgeon, Dr. John B. Deaver; gynecologist, Dr. John B. Shober; associate surgeon, Dr. Ludwig Loeb; director of research laboratory, Dr. L. Napoleon Boston; assistant physician, Dr. L. R. Strawbridge; pædiatrist, Dr. Francis B. Jacobs; consulting physician, Dr. James C. Wilson; consulting ophthalmologist, Dr. James Thorington; superintendent and head nurse, Miss Margaret A. Byrne.

Philadelphia Personals.—Dr. Francis D. Patterson has been appointed chief police surgeon.

Dr. William W. Keen has resigned the chair of the principles of surgery in the Jefferson Medical College, to take effect March 15th. The trustees of the college have elected Dr. Keen professor emeritus of the principles of surgery.

Dr. Henry Leffmann has resigned from the board of health.

Dr. N. P. Davidson, of Hilliard, Ohio; Dr. T. L. Blair, of Waynesburg, Ohio; Dr. H. B. Graham, of San Francisco, Cal.; Dr. C. J. Conroy, of Montreal, Canada; and Dr. E. D. McKee, of Sugar Grove, Pa., are registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

A New Miners' Hospital.—It is purposed to build a hospital for miners in the Panther Creek Valley, which lies between Tamaqua and Mauch Chunk, Pa. The miners in this region have given one day's pay, amounting to \$12,000 toward the fund for the erection of the hospital. There is some difference of opinion as to the best location for the hospital. The president of the Lehigh Coal and Navigation Company wants it located at one point, while public opinion wants it located at another point. The latter location, it is stated, is more accessible and is situated nearer the centre of the population which it is supposed to benefit. The Pennsylvania State Department of Health favors the site desired by a majority of the residents of the district.

College of Physicians of Philadelphia.—The annual meeting of the College of Physicians of Philadelphia was held on the evening of Wednesday, January 2nd. Dr. Charles W. Burr read a memorial of the late Dr. Frederick A. Packard, and Dr. Frederick P. Henry read a memorial of the late Dr. William S. Forbes. The honorary librarian reported the addition of fifty-three volumes to the library for the month of December. The president, Dr. Arthur V. Meigs, read the annual address of the president. The following officers were elected for the ensuing year: President, Dr. James Tyson; vice-president, Dr. G. E. de Schweinitz; censors, Dr. Richard A. Cleemann, Dr. S. Weir Mitchell, Dr. Horace Y. Evans, Dr. Louis Starr; secretary, Dr. Thomas R. Neilson; treasurer, Dr. Richard H. Harte. It was announced that Mr. Andrew Carnegie had offered to give the college an additional \$50,000, toward the new building for the library, provided that the fellows of the college would raise an equal sum.

Scientific Society Meetings in Philadelphia for the Week Ending January 19, 1907.—*Monday, January 14th*, Section in General Medicine, College of Physicians; Wills Hospital Ophthalmic Society. *Tuesday, January 15th*, Section in Ophthalmology, College of Physicians; Dermatologi-

cal Society; Academy of Natural Sciences; North Branch, Philadelphia County Medical Society. *Wednesday, January 16th*, Philadelphia County Medical Society (business meeting open to members only); Section in Otology and Laryngology, College of Physicians; Association of Clinical Assistants, Wills Hospital; Franklin Institute. *Thursday, January 17th*, Section Meeting, Franklin Institute; Medical Society of the Women's Hospital; Section in Gynecology, College of Physicians. *Friday, January 18th*, Medical Society of the University of Pennsylvania; American Philosophical Society; West Philadelphia Branch, Philadelphia County Medical Society; Medical Club (annual meeting).

The Health of Philadelphia.—During the week ending December 29, 1906, the following cases of transmissible diseases were reported to the bureau of health:

	Cases.	Deaths.
Measles	1	1
Typhoid fever	186	22
Scarlet fever	23	1
Chickenpox	55	0
Diphtheria	86	9
Cerebrospinal meningitis	2	1
Measles	25	1
Whooping cough	17	4
Tuberculosis of the lungs	80	59
Pneumonia	80	54
Erysipelas	19	2
Septicæmia	4	3
Cancer	11	18

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 10; diarrhoea and enteritis, under two years of age, 24; puerperal fever, 3. The total mortality was 532, in an estimated population of 1,469,126, corresponding to an annual death rate of 18.83 in a thousand population. The total infant mortality was 122; under one year of age, 100; from one to two years of age, 22. There were 31 still births, 13 males and 18 females. The temperatures were low; the total precipitation was 0.10 inch.

BOSTON AND NEW ENGLAND

The Portland (Me.) Medical Club.—A meeting of this club, as guests of Dr. T. J. Burrage, was held on Thursday evening, January 3rd. Dr. W. W. Dyson read a paper on The Treatment of Hernia.

Personal.—Dr. Frederic L. Mills, acting assistant physician of the Concord, N. H., insane asylum, was, on January 4th, elected by the trustees of the Massachusetts State Sanatorium for tuberculous patients, at Rutland, to succeed Dr. Walter J. Marcle, whose resignation takes effect February 1st.

The Miller's River (Mass.) Medical Society.—At the annual meeting of this society, held at Athol, on Tuesday, January 1st, the election of officers resulted as follows: President, Dr. E. N. Mullins, of Baldwinville; vice-president, Dr. A. C. Leach, of Orange; secretary-treasurer, Dr. George L. Perry, of Athol.

The Centre District, New Hampshire, Medical Society.—The programme for the Eighty-fifth annual meeting of this society, held at Concord, on Tuesday, January 8th, included a symposium on Medicine, its past, present, and future, arranged as follows: Past, Dr. D. P. Goodhue, Springfield; Present, Dr. Charles Duncan, Concord; Future, Dr. John W. Staples, Franklin Falls.

The Health of Boston in December, 1906.—In December the Boston health department laboratory examined more than a thousand reported cases of infectious diseases, among which were found eighty-two true cases of tuberculosis, fourteen of typhoid fever, 198 of diphtheria, and three of glanders. Of consumption the bacteriologists found no evidence of the disease in 294 cases that were reported as suspicious cases; 133 cases of supposed typhoid fever were free from the germ, and 741 persons reported as possible victims of diphtheria did not have the disease. By a second examination, 260 persons who had been in quarantine on account of diphtheria were released by the board of health as cured, and on 307 cases that were under treatment, the bacteriologist found it necessary to recommend that they be retained in quarantine a while longer.

The Mortality of Boston.—The number of deaths reported to the Board of Health for the week ending January 5th, was 273, as against 234 the corresponding week last year, showing an increase of 39 deaths, and making the death rate for the week 23.64. The number of cases and

deaths from infectious diseases was as follows: Diphtheria, 5; cases 8 deaths; scarlet fever, 10 cases, 2 deaths; typhoid fever, 9 cases, 3 deaths; measles, 22 cases, no deaths; tuberculosis, 40 cases, 24 deaths; smallpox, 1 case, 1 death. The deaths from pneumonia were 48; whooping cough, 1; heart disease, 33; bronchitis, 6; marasmus, 3. There were 20 deaths from violent causes. The number of children who died under one year of age was 45; under five years of age, 56; persons over sixty years of age, 71; deaths in public institutions, 76.

BALTIMORE AND THE SOUTH

The Floyd County, Georgia, Medical Society. At the annual meeting of this society, held at Rome, on Friday evening, December 31st, the election of officers resulted as follows: President, Dr. W. J. Shaw; vice-president, Dr. H. H. Battey; secretary-treasurer, Dr. W. L. Funkhauser; delegate, Dr. J. W. Curry; censors, Dr. J. C. Watts, Dr. R. P. Cox, Dr. L. P. Hammond, of Rome.

The Clarendon County, South Carolina, Medical Association.—The annual meeting of this association was held at Summerton, on Thursday, December 27, 1906. Officers for the ensuing year were elected as follows: President, Dr. T. J. Davis, of Summerton; vice-president, Dr. W. M. Brockinton, of Manning; secretary, Dr. E. M. Carson, of Manning. The next meeting of the association will be held at Manning.

The Mortality of Baltimore.—According to the weekly report of the health commissioner, for the week ending January 5th, there were 230 deaths, compared with 201 for the corresponding week of 1906, 192 in 1905, and 235 in 1904. Thirty-eight of the total deaths reported were caused by consumption, 33 by pneumonia, 5 by the grip, and 8 by bronchitis. The annual death rate in a thousand of population was: Whole, 20.34; white, 17.52; colored, 35.24. The principal causes of death were: Typhoid fever, 1; measles, 1; whooping cough, 1; diphtheria, 3; influenza (la grippe), 5; consumption, 38; cancer, 10; apoplexy, 11; organic heart disease, 17; bronchitis, 8; pneumonia, 33; Bright's disease, 19; congenital debility, 14; lack of care, 2; old age, 6; suicides, 3; accidents, etc., 8. The following number of cases of infectious diseases were reported, as compared with the corresponding week of last year:

	1906.	1907.
Smallpox	6	0
Diphtheria	28	28
Scarlet fever	17	7
Typhoid fever	7	10
Measles	3	20
Mumps	0	3
Whooping cough	20	1
Chickenpox	7	9
Consumption	12	18

CHICAGO AND THE WEST.

The Blue Earth County, Minnesota, Medical Society.—At a meeting of this society, held at Mankato, on December 31st, 1906, the election of officers resulted as follows: President, Dr. I. D. Webster, of Mankato; vice-president, Dr. F. J. Bomberger, of Mapleton; secretary, Dr. A. G. Liedloff, of Mankato; treasurer, Dr. Lida Osborne, of Mankato.

The Gage County, Nebraska, Medical Society held its fourth annual meeting at Beatrice, on Tuesday, January 1st. Officers for the ensuing year were elected as follows: President, Dr. C. P. Fall, of Beatrice; vice-president, Dr. F. E. Osborn, of Beatrice; secretary-treasurer, Dr. I. N. Pickett, of Odell; board of censors, Dr. G. H. Brash, Dr. J. I. McGirr, and Dr. C. A. Bradley, of Beatrice; delegate to the house of delegates of the State Medical Association, Dr. H. M. Hepperlen, of Beatrice.

Statement of Mortality of Chicago for the Week Ending December 29, 1906, compared with the preceding week, and with the corresponding week of 1905. Death rates computed on figures of United States Census Bureau's midyear populations—2,049,185 for 1906, 1,990,715 for 1905:

	Dec. 29, 1906.	Dec. 22, 1906.	Dec. 30, 1905.
Total deaths, all causes	575	618	525
Annual death rate in 1,000	14.63	15.73	13.47
Sexes			
Males	336	358	314
Females	239	260	211
Ages			
Under 1 year of age	123	123	97
Between 1 and 5 years of age	60	72	30
Between 5 and 20 years of age	42	43	46
Between 20 and 60 years of age	232	253	239

	118	124	113
Smallpox	16	11	14
Diphtheria	24	44	19
Scarlet fever	29	21	17
Typhoid fever	20	10	10
Measles	10	24	10
Mumps	17	10	14
Whooping cough	11	21	14
Chickenpox	11	12	10
Consumption	10	20	22
Heart disease	10	22	24
Stroke	10	11	14
Apoplexy	10	11	14
Cancer	10	11	14
Accidents	10	11	14
Violent deaths	10	11	14
Deaths in public institutions	10	11	14
Deaths in private institutions	10	11	14
Deaths in hospitals	10	11	14
Deaths in homes	10	11	14
Deaths in streets	10	11	14
Deaths in parks	10	11	14
Deaths in schools	10	11	14
Deaths in churches	10	11	14
Deaths in hotels	10	11	14
Deaths in restaurants	10	11	14
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Pith of Current Literature

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

January 8, 1917.

1. Trypanosomes (*To be continued*),
By FREDERICK G. NOVY.
2. Lupus Vulgaris of the Ear in Relation to Its Late Results,
By A. RAVOGLI.
3. Evidences of Infected Cages as the Source of Spontaneous Cancer Developing Among Small Caged Animals,
By HARVEY R. GAYLORD and G. H. A. CLOWES.
4. The Effect on the Blood Pressure of the Withdrawal of Fluid From the Thorax and Abdomen,
By J. A. CAPPS.
5. Acute Infections of the Thoracic Cavity,
By J. H. MUSSER.
6. The Treatment of Pleurisy with Effusion,
By F. FORCHHEIMER.
7. Trauma of the Head as a Cause of Insanity,
By CHARLES W. BURR.
8. Migrainic Psychoses. Apropos of Twelve Cases,
By ALFRED GORDON.
9. Atrophic Rhinitis: A Reproach to Rhinology.
By GEORGE L. RICHARDS.

2. **Lupus Vulgaris of the Ear in Relation to Its Late Results.**—Ravogli states that lupus vulgaris, the true exponent of the cutaneous tuberculosis, although so well studied and thoroughly known, still deserves consideration. Usually it is a disease of a long and tardy process. It remains for years in the form of small, innocent nodules, which scarcely call the attention of the patient for any treatment, and yet its consequences are very serious, and at times fatal. This fact prompts the author to report to the history of two cases which have lately come under his observation. In reference to the treatment, every possible means were used in these cases, but the results have been discouraging. The application of Finsen light with Lortét and Genou apparatus, in the first case was of no benefit, in the second case it proved at first beneficial. The process, however, took more severe proportions, so much so that it was necessary to change treatment. The exposure to x ray proved beneficial in the first case, so that it had caused nearly all ulcerations to heal, but it was unsuccessful in the second. In the first case the x ray treatment had stopped the continuous pain, in the depth of the ear, in the second it irritated and caused so much discomfort that its use had to be stopped. Suddenly new ulcerations were formed, undermining the bones. In the first case the process had gone too deep and scraping was not advisable. In the second case, in which the process was more superficial, the whole surface was scraped off and covered with skin grafts. For a while it seemed to be healing, but after a time new ulcers were formed in the centre and in the periphery, which soon left the ulcerated surface in the former condition. The best results so far have been obtained from the applications of pure lysol. The new ulcers are touched up with a piece of cotton dipped in lysol; the pain is not excessive. It produces a coagulation of the serum of the tissues, so as to form a hard, whitish escara, which falling out leaves a healthy tissue which soon cicatrizes.

4. **Some Observations on the Effect on the Blood Pressure of the Withdrawal of Fluid from the Thorax and Abdomen.**—Capps has taken the blood pressure in a series of fifteen cases of pleural effusion, four patients were tapped twice, in every instance aspiration having been used. During the excitement of preparation and the pain of puncture there is usually a temporary rise in pressure. During the withdrawal of fluid the pressure falls constantly, reaching, as a rule, the lowest point at the time of, or subsequent to, the removal of the needle. The average fall in 19 aspirations was 20 mm. Hg. The final pressure taken an

hour or more after tapping is generally 5 to 15 mm. lower than the initial pressure, the average fall for 19 aspirations being over 8 mm. The amount and rapidity of withdrawal are important factors in determining the degree of fall in pressure. Other things being equal, slow aspiration causes less fall in pressure than rapid aspiration, while the duration of the effusion is of great influence; in cases of short duration the fall in blood pressure is usually not marked and the recovery is rapid. In long standing cases the fall in pressure is greater, doubtless because the lung expands less completely and with greater difficulty than in the recent cases. Senile changes in the bloodvessels and heart seem to favor a relatively rapid and deep fall in pressure and a slow recovery; heart disease alone, however, has apparently little effect on the pressure curve. Pneumothorax, even when fairly extensive, does not appreciably affect the blood pressure. Epigastric angina caused by a reflex spasm of the abdominal arteries brought on by the irritation of the needle, produces a very rapid rise in the general arterial pressure. In abdominal paracentesis Capp observed that up to a certain point the general arterial pressure increases with an increase in the pressure of intraabdominal fluid; beyond this point the blood pressure falls. During the drainage of the fluid, as a rule, a fall occurs in the arterial pressure which averages 32 mm. The lowest pressure comes usually several minutes after the needle is withdrawn, but it may come at any time during the procedure. The final pressure taken an hour or more after paracentesis on an average is 12 mm. lower than the initial pressure. The rate of withdrawal seems more important than the amount of fluid removed in its effect on the immediate fall in arterial pressure. The final pressure, however, is more affected by the amount of fluid. External pressure on the abdominal wall at the end of drainage often raises the pressure 5 to 20 mm. Posture is important. Normally the pressure is higher in the sitting than in the recumbent position. At the end of paracentesis, however, lying down often increases the pressure 6 to 20 mm. The improvement is most marked in patients who undergo a decided fall of pressure during operation.

6. **The Treatment of Pleurisy with Effusion.**—Forchheimer describes his technics of operation for pleurisy with effusion as follows: The dangers of removing fluid from the chest are always insisted on; they certainly can be reduced to a minimum when the operation is performed with the necessary precautions. He has always used the aspirator, and in all his experience has never had a bad result. When the aspirator is properly used it is as safe as withdrawing the fluid with a trocar and syphon arrangement and much more convenient, as the flow of the fluid can be controlled and no air can enter the chest. In addition to complete asepsis, the following precautions are essential to safety: The pressure within the aspirator should be reduced to its minimum in the beginning; it is rarely necessary to increase it at any time. As the intrapleural pressure with effusion never exceeds 40 mm. of mercury (about two inches), anything below this will succeed in aspirating the fluid. So that at first the aspirator should contain air. If the negative pressure in the aspirator be too great the lung will be suddenly expanded, which may be followed by all those unpleasant consequences which are so thoroughly understood by all of us. Very little negative pressure is necessary in the aspirator, as it is more than likely that most fluids would flow from the pleural cavity without much suction, as when an opening is made the pressure of the fluid is the intrapleural pressure. The next precaution to be taken, and just as important as the former, consists in not attempting to withdraw all the fluid at one sitting. Aside from the fact that this is impossible, it would be unnecessary if it were possible. Further-

more, the drawing off of these large quantities of fluid at one time leads to dangerous conditions: albuminous expectoration, cough, syncope, acute oedema of the lungs, death. No rule can be laid down as to how much fluid should be removed at one time. It may be 300 c.c.; it may be more, but under all circumstances not any more should be withdrawn than is necessary to remove all the symptoms. In most cases it will not be difficult to determine when the second aspiration should be performed; when dangerous symptoms reappear, or when absorption does not take place in a few days it is time to aspirate again. Another precaution to be taken is that the patient be in a position which approaches the recumbent as nearly as possible. Lastly, the patient should be carefully watched while the fluid is being withdrawn; if he coughs violently and spasmodically, if he has a feeling of constriction or feels faint or has great pain, the operation must be interrupted; after a little while, the symptoms having disappeared, another attempt may be made; if the symptoms again appear, the needle must be withdrawn and the patient put to bed.

8. Migrainic Psychoses.—Gordon reports twelve cases of typical psychoses in migrainic attacks observed during the last four years. In the majority, if not in all, there are three mental states that have been inevitably found, viz., confusion, mild stupor with hallucinations and sometimes vague unsystematized delusions and delirium. The hallucinations which are so frequent are mostly visual; some patients had auditory and some gustatory hallucinations. The confusional state predominated in all my patients. It was quite frequently accompanied by illusions of identity, incoherence of thoughts and language, disturbance of orientation. The delusions are all of a fleeting character and unsystematized. Some of the cases suggest psychic forms of epilepsy. As to the time of appearance of the mental symptoms in relation to the migrainic attack, in the majority of these cases they developed during the attack when the headache reached its climax and disappeared with the headache. In some cases they continued for twenty-four hours after the subsidence of the migraine. In a few cases the mental symptoms appeared at the end of the attack, in some only after the attack and in one case they preceded the migrainic paroxysm. The question has often arisen whether the transitory psychic symptoms observed in migrainic paroxysms are the result of the migraine itself or are manifestations of other neuroses, as epilepsy and hysteria gravis. That migraine may, in a certain group of cases, be of epileptic nature, i. e., equivalent to epileptic seizures, is a well known fact. The point of importance concerning migrainic psychoses consists of their intimate association with the same causes that produced the migrainic attacks themselves, and this is autointoxication. The histories of migrainic patients are all identical: Constipation, obesity, hereditary predisposition, all figure in the life of such patients. Auto-intoxication, therefore, is to be expected and, indeed, it is frequent.

MEDICAL RECORD.

January 5, 1907.

1. Suggestions of a Plan of Organizing a Hospital System for the City of New York. By STEPHEN SMITH.
2. Report of Two Cases of Dementia Paralytica, One Associated With a Large Hæmorrhagic Lesion, the Other With Atrophy of the Optic Tract, By JESSIE WESTON FISHER.
3. The Intestinal Bacteria; How They Acquire Toxicity, and How to Determine This Experimentally for Clinical Purposes. By E. PALIER.
4. An Original Investigation of An Epidemic of Grippe. Followed by a Large Number of Cases of Pneumonia; With Special Reference to the Infectious Nature and Period of Incubation of These Two Diseases. By ALBERT WOLDERT.

5. *Report of Two Cases of Dementia Paralytica, One Associated with a Large Hæmorrhagic Lesion, the Other with Atrophy of the Optic Tract.*—Fisher observes that, though medical literature abounds in discussions of dementia paralytica in all its phases, few cases are recorded associated with gross focal lesions of the brain. He therefore reports two such cases. In the first case there were no unusual symptoms until about one year previous to death, when contractures of the right side were noted, beginning with the hand, but gradually involving the arms and legs of both sides. The absence in this case of any history of shock, or any symptoms pointing towards a focal lesion, leave us in the dark as to the primary affection. Whether the hæmorrhage antedated the mental symptoms, or appeared during the psychosis and was masked by it, is impossible to say. In the second case, however, the sudden blindness, shock, and dementia rather masked the symptoms of general paresis, so that there was some doubt as to the diagnosis before autopsy. The duration of the disease does not seem to have been affected by the focal lesion, nor did it color the picture to any great extent in the first case.

2. Report of Two Cases of Dementia Paralytica, One Associated with a Large Hæmorrhagic Lesion, the Other with Atrophy of the Optic Tract.—Fisher observes that, though medical literature abounds in discussions of dementia paralytica in all its phases, few cases are recorded associated with gross focal lesions of the brain. He therefore reports two such cases. In the first case there were no unusual symptoms until about one year previous to death, when contractures of the right side were noted, beginning with the hand, but gradually involving the arms and legs of both sides. The absence in this case of any history of shock, or any symptoms pointing towards a focal lesion, leave us in the dark as to the primary affection. Whether the hæmorrhage antedated the mental symptoms, or appeared during the psychosis and was masked by it, is impossible to say. In the second case, however, the sudden blindness, shock, and dementia rather masked the symptoms of general paresis, so that there was some doubt as to the diagnosis before autopsy. The duration of the disease does not seem to have been affected by the focal lesion, nor did it color the picture to any great extent in the first case.

3. The Intestinal Bacteria; How They Acquire Toxicity, and How to Determine This Experimentally for Clinical Purposes.—Palier describes his method of testing the virulence of the intestinal bacteria as follows: Obtain some fæces, for obvious reasons better at the end of defæcation, in a sterile container. Then make two cultures, one in glucosed agar by stab and one on agar slant by smear, and put them into the incubator at 38° C. for forty-eight hours. In hot summer weather the room temperature is sufficient. Make smear preparations of the cultures and stain by Gram and a counter stain like eosine. By examining the cultures and the smear preparations therefrom, one can usually see what bacteria there are. In most instances there will be found Gram positive cocci and coli bacilli, the latter, of course, Gram negative. Then take an ordinary loopful of a platinum wire needle, the size of a small drop, that is, about a twenty-fifth of a c.c., either from the stab culture, if the growth is sufficient, or from the slant culture, or from both, and dissolve in 2 c.c. of sterile water, and inject the whole of it intraperitoneally into a mouse. If the animal happens to be small, half of it should be injected. If the animal does not die, the bacteria are nonvirulent. If the cultures contain both virulent cocci and coli bacilli, the animal dies in about eight hours. If one wishes to go a little further, the mouse should be dissected and smear preparations from the blood of the heart and cultures therefrom should be made. The dissection should be made immediately after the death of the animal. If the smear preparations and the cultures contain only coli bacilli they are the only virulent microbes. If the injected cultures contain also virulent cocci, they can be recovered in the cultures from the blood of the dead mouse, but are hard to be detected in smear preparations, as the animal dies too quickly after the injection. If one suspects virulent cocci or anthrax bacilli, for instance, the injection is better made subcutaneously, not intraperitoneally, in which case death is not so sudden, and the bacteria develop better in the animal.

4. An Original Investigation of an Epidemic of Grippe, Followed by a Large Number of Cases of Pneumonia.—Woldert, from his study of grippe, comes to the conclusion that, while grippe appears to be an infectious disease, not all of those who come in direct contact (such as sleeping in the same bed) contract the disease. The possible average period of incubation of grippe by air transmission is about seven days. One suffering with grippe should be warned against the tendency to develop pneumonia. An infant suffering

with grippe should not be permitted to sleep with a healthy mother, and when the mother is affected she should not be permitted to sleep with a healthy infant. The weather conditions, such as excessive rains with snow and marked variations in the temperature exert greatest influence in the spread of grippe and consequent production of pneumonia. Age and sex exert no protective influence against grippe. Proper care should be exercised to destroy all sputa and fomites which may aid in the spread of grippe.

BRITISH MEDICAL JOURNAL.

December 22, 1906.

(Seventy-fourth Annual Meeting of the British Medical Association).

Section of Pathology.

1. A Discussion on the Physiology and Pathology of the Nucleus, Introduced by J. G. ADAMI.
2. A Discussion on the Classification and Artificial Production of Arteriosclerosis, Introduced by O. KLOTZ.
3. Changes in the Nervous System Produced in Chronic Trypanosome Infection, By F. W. MOTT.
4. Treatment of Trypanosomiasis by the "Colors of Ben-zidine," By M. NICOLLE and F. MESUL.
5. Notes Upon Experiments with Vaccine Lymph, By J. R. BALLAH.
6. A Contribution to the Bacteriology of Rheumatic Fever, By J. M. BEATTIE.
7. On the Combining Properties of Opsonins of Normal Serum, By R. MUIR and W. B. M. MARTIN.

Section of Physiology.

8. The Acceleration of the Action of Pancreatic Juice by the Salts of Calcium, By E. DELEZENNE.
9. Nucleoprotein Immunity, By S. P. BEEBE.
10. The Metabolism of Kreatin and Kreatinin, By O. FOLIN.
11. Chemical Studies on Growth, By L. B. MENDEL.
12. The Effect of Ions on Growth and Cell Division, By B. MOORE, H. E. ROAF, and E. WHITLEY.
13. On the Physiological Action of Certain Cholin Derivatives and New Methods for Detecting Cholin, By R. HUNT and R. DE M. TAVEAN.
14. On the Liberation of Phosphorus From Nuclein Compounds, By F. H. SCOTT.
15. An Active Alkaloid From Ergot, By G. BARGER, F. H. CARR, and H. H. DALE.
16. Estimation of the Quantity of Chloroform in Blood and Tissues, By M. NICLOUX.
17. Some Observations on the Microchemistry of the Blood Plates, By G. T. KEMP, C. E. HARRIS, and H. CALHOUN.
18. Transplantation of Blood Vessels and Organs, By A. CARREL and C. C. GUTHRIE.
19. Evolution of Elementary Tissues in Relation to Physiological Function, By C. F. HODGE, O. P. DELLINGER, and F. N. DUNCAN.
20. The Lymphatics of the Liver, By P. T. HERRING and S. SIMPSON.
21. Experimental Glycosuria, By J. J. R. MACLEOD.
22. On the Excretion of the Urine, By V. E. HENDERSON.
23. On a Method of Investigating the Deep Ganglia and Tracts of the Central Nervous System (Cerebellum), By R. H. CLARKE and Sir V. HORSLEY.
24. The Electrical Excitation of Nerves and Muscles, By L. LAPICQUE.
25. The Physiological Significance of the Convolutional Pattern in the Primates, By F. W. MOTT.
26. The Conduction of Sensory Impressions in the Spinal Cord, By S. SIMPSON and P. T. HERRING.
27. The Mechanism of "Locked Jaw" Produced by Tetanus Toxine, By H. E. ROAF and C. S. SHERRINGTON.
28. The Causes of Fatigue in Certain Pathological States, By F. S. LEE.
29. Vagus Reflexes Upon Oesophagus and Cardia, By S. J. MELTZER and J. AUER.
30. Vagus Inhibition, By W. E. DIXON.
31. The Various Forms of the Negative or Physiological Venous Pulse, By W. S. MORROW.
32. Acapnia as a Factor in Shock, By V. HENDERSON.

Section of Ophthalmology.

33. Chronic Suppurative Dacryocystitis and Its Radical Treatment, By F. T. TOOKE.

Other Articles.

34. The Exanthem of Scarlet Fever and Some of Its Counterfeits, and the Clinical Significance of Skin Hæmorrhages in Diphtheria, By J. MACCOMBIE.

2. **Arteriosclerosis.**—Klotz sums up his observations on artificial arteriosclerosis as follows: 1. The effect of the high pressure drugs (adrenalin, digitalin, and barium chloride) on the arteries is a degenerative one. 2. The muscle cells of the media are first attacked, while the elastic fibres of this layer are also involved later. 3. At a proper stage of the degeneration a fatty change can be demonstrated in the tissues followed by calcification. 4. The middle zone of the media is always involved. 5. Occasionally secondary reactions occur in the intima which are of a proliferative nature. 6. The effect of adrenalin is not abolished by lowering the blood pressure with nitroglycerin. 7. The aneurysms are produced as a result of the destruction in the media. 8. These experimental lesions are in every respect similar to the Moenckeberg type of arteriosclerosis. 9. The effect of diphtheria toxins on the arteries is similar to that of the adrenalin series. 10. Typhoid and streptococcus infections produce little destruction of tissue cells, but tend to stimulate cell proliferation in the intima and inner layer of the media. 11. Vessel changes are brought about by these infections which correspond to arteriosclerosis. 12. These experiments show that there is definitely a form of arteriosclerosis in which, not a preliminary weakening of the media, but a primary proliferation of the intima, including the musculoelastic layer, is the prime feature. Undoubtedly the Moenckeberg type of medial degeneration is common. But undoubtedly also in syphilitic and other cases, a secondary and adoptive or compensatory overgrowth of the intima, is met with.

6. **The Micrococcus Rheumaticus.**—Beattie discusses the various objections which have been raised to the view that rheumatic fever is caused by a specific micro-organism—the *Micrococcus rheumaticus*, first described by Wasserman in 1899. Among the conclusions which he draws are the following: 1. The results obtained by injections of streptococci are different from those produced by the *Micrococcus rheumaticus*. 2. *Micrococcus rheumaticus* cannot be regarded as an attenuated streptococcus, nor acute rheumatism as an attenuated streptococcal pyæmia. 3. In uncomplicated cases of acute rheumatism the organism is not usually found in the blood or in the joint exudates.

34. **The Scarlet Fever Rash.**—MacCombie tells us that the typical rash of scarlet fever is twofold in character. A finely punctate, slightly raised, papular portion, and an erythematous portion, the former being usually regarded as the more characteristic feature of the rash. The eruption is general, its tint varying from a rose pink to a light red. The characteristic tongue is at first white with the fungi form papillæ showing as red dots; later on it is clean and markedly red. In the fauces there is a ring of bright red injection involving the free edge of the palate and tonsillar pillars. The true eruption of measles is sometimes preceded by a bright red rash suggestive of scarlet fever; it is usually erythematous and not punctate, catarrhal symptoms are present and also Koplik's spots. In smallpox prodromal rashes counterfeiting scarlet fever are very common; they are, however, almost purely punctate, and the general symptoms (severe headache and backache, high fever, and an absence of sore throat) usually serve to differentiate these cases, the throat signs being the really important confirmatory point in the diagnosis of such cases. In conclusion the writer calls attention to the extremely unfavorable prognosis in cases of diphtheria in which hæmorrhages appear in the skin. They are only met with in cases which have escaped early treatment with diphtheria antitoxines; they occur almost exclusively in patients under twelve years of

age, and are most common in cases of severe diphtheria usually associated with nasal diphtheria. Persistent epistaxis on the fourth or fifth day often precedes the skin hæmorrhages, also persistent vomiting and evidences of cardiac failure. The duration of life after the hæmorrhages is usually four or five days.

LANCET.

1. Art. *Heart Massage*, By T. A. GREEN.
2. Heart Massage as a Means of Restoration in Cases of Apparent Sudden Death, With a Synopsis of Forty Cases, By T. A. GREEN.
3. Large Arteriovenous Aneurysm of the Neck Treated by Ligation, By J. DUNN.
4. Note on Three Interesting Heart Cases, By R. G. WHITE.
5. The Treatment of Ovarian Prolapse by Shortening the Ovarian Ligament, By V. BONNEY.
6. An Operation for the Cure of Prolapsus Ani and Internal Hæmorrhoids, By D. NEWMAN.
7. A Case of Intussusception and Volvulus Occurring at Intervals in the Same Patient, with Operations and Recovery, By E. E. WAKE.
8. Further Observations on the Influence of Calcium Chloride on the Agglutination of Vibrios, By M. CRENDIROPOULOU and C. B. S. AMOS.

2. **Heart Massage.**—Green has collected from the literature forty cases of massage of the heart in cases of apparently sudden death, including two cases of his own. He concludes that in suitable circumstances it is a method of treatment which should commend itself to the practical surgeon. The kinds of cases in which it may be used with a fair prospect of success are (1) Cases of primary arrest of the heart in a condition of acute dilatation from poisoning by an overdose of a powerful volatile drug, such as chloroform; (2) cases where the gradual accumulation of volatile poisons, such as chloroform, leads to primary paralysis of the respiratory and vasomotor centres followed by stoppage of the heart; (3) cases of asphyxia; and (4) cases of suspension of the functions of the vital centres from simple exhaustion or injury, and consequent stoppage of the heart. In all these cases the restoration of the breathing and the raising of the blood pressure must be obtained by their own particular measures, and where a gradual weakening of the respiratory and vasomotor centres is perceived before the arrest of the heart has come about, the removal of the cause and the commencement of artificial respiration and its adjuncts may, and probably in most cases will, be sufficient to restore them to their normal conditions and prevent paralysis of the heart; but when the heart has once stopped for a definitely appreciable time it is very doubtful whether artificial respiration has any influence whatever upon it. In these circumstances direct mechanical stimulation of the organ in the form of massage has been proved both by experiment and in practice to have the power of reviving its beating. It probably does this by creating afresh the circulation through the coronary vessels. Having started the heart beating, artificial respiration, by obtaining a free ventilation in the lungs, encourages a pulmonary circulation, oxygenation of the blood, and the withdrawal of poisonous vapors from the vital centres *via* the lungs, until in successful cases their function in turn again becomes active and spontaneous breathing is restored. The order of procedure in cases of sudden heart and respiratory failure should be as follows: 1. Immediate lowering of the head and the commencement of artificial respiration and tongue traction, taking care that a free access of air to the lungs is possible and therefore implying tracheotomy if necessary. 2. If the abdomen is open, pressure on the abdominal aorta to confine the circulation to the upper part of the body. If it is not open the intravenous injection of adrenalin

solution and the application of Crile's rubber suit, or failing this, tight bandaging of the limbs and abdomen. 3. The subcutaneous or intravenous injection of normal saline solution. 4. If these methods fail after being applied from eight to ten minutes, heart massage by the subdiaphragmatic method. The time is fixed at from eight to ten minutes because eight minutes is the limit of the interval at which up to the present time a complete success has been obtained in man, and if it is exceeded the danger of the production of fibrillary twitchings, inability to restore consciousness, and the development of spasm in the voluntary muscles with consequent failure of the manipulations have to be taken into consideration. The unavoidable extension of this limit should, however, be no bar to the adoption of the method, as very hopeful results have been obtained, even when forty-five minutes have elapsed from the onset of the syncope before it has been tried. 5. After normal pulsation has returned to the heart artificial respiration must be continued until spontaneous breathing has been restored or until circumstances make it improbable that such restoration will be obtained.

6. **Prolapsus Ani.**—Newman describes an operation for the cure of prolapsus ani and internal hæmorrhoids. Its purpose is to cauterize the mucous membrane of the rectum into six narrow strips from above downwards, each strip being four inches long by a quarter of an inch broad. This is done through a fenestrated speculum six inches long, and one and a quarter inches in diameter, with six windows four inches long and one sixth of an inch broad. When it is fully inserted, the lower ends of the windows are half an inch above the anus, so that the mucocutaneous line is protected from the cautery. A general anæsthetic is given, and any hæmorrhoids or prolapsed rectum fully reduced. The speculum with its obturator is then introduced to its full length. On withdrawing the obturator the congested mucous membrane protrudes through the openings in the speculum. A disc on a wire is then passed in to close the upper end of the speculum and protect the mucous membrane higher up. All the mucous membrane protruding in the speculum is then freely cauterized with an iron cautery at a dull red heat. A danger to be avoided is overheating the speculum, and it may be met by playing a stream of water upon its interior at intervals. When the operation is completed the speculum is packed with gauze covered with petrolatum, which is held in place by the obturator, while the speculum is withdrawn. Patients should remain in bed three weeks, when union will be found to be complete. In cases of internal piles the patient suffers no pain, and can be out in a few days. The advantages are as follows: 1. The very sensitive area of the anus not being included in the operation, the patient suffers no shock during the operation and little or no pain after it. 2. The cautery is applied while the mucous membrane and the muscular wall are as nearly as possible in their normal relationship. 3. The anus being uninjured the sphincter acts normally after the operation. 4. In no case has the writer found the slightest indication of sepsis after the operation; no suppression of urine, and comparatively little sickness following, and when the bowels move for the first time no great pain is suffered. 5. In no case has recurrence of prolapse or internal hæmorrhoids been noted.

LA PRESSE MEDICALE.

December 10, 1906.

1. The Effects of Lumbar Puncture on Some Cutaneous Phenomena, By PAUL RAVAUT.
2. The Dwelling. Hygiene of Light. Style of Our Dwellings. The Window. The Chamber. The Nursery, By A. AUGUSTIN REY.
3. The Spirochætæ of Schaudinn in the Ocular Manifestations of Syphilis, By R. ROMME.

1. **The Effects of Lumbar Puncture on Some Cutaneous Phenomena.**—Ravaut calls attention to the paper published by Thibierge and himself about a year ago in which a number of pruriginous affections of the skin were reported to have been cured or improved as the result of lumbar puncture, but he adds little or nothing to what was contained therein.

LA SEMAINE MEDICALE

December 12, 1906.

Pseudoneoplastic Inflammatory Tumors of the Abdomen.
By M. LEJARS.

Pseudoneoplastic Inflammatory Tumors of the Abdomen.—Lejars points out the difficulties which attend the differentiation of these tumors from cancer.

December 19, 1906.

The Plantar Reflex and the Toe Phenomenon of Babinsky.
From the Physiological and the Pathological Points of View,
By NOICA and SAKELARU.
BERLINER KLINISCHE WOCHENSCHRIFT.

December 3, 1906.

1. Transmission of Tumors in Dogs by Means of the Sexual Act, By A. STICKER.
2. Primary Cancer of the Appendix, Together with Remarks Concerning the Examination of the Appendix in Every Laparotomy, By TH. LANDAU.
3. A New Proposition for the Control of the Worst Forms of Eclampsia, By A. SIPPEL.
4. Pathogenesis of Acute Hæmorrhage from the Pancreas and Necrosis of the Pancreas, By E. A. POLYA.
5. Pathogenesis and Treatment of Infantile Splenic Anæmia, By H. WOLFF.
6. Borovertin, a New Disinfectant of the Urine, By O. MANKIEWICZ.
7. The Results Thus Far Obtained From Experimental Inoculation of Syphilis (Concluded), By BRUHNS.

1. **Transmission of Tumors in Dogs Through Sexual Connection.**—Sticker produced an extensive sarcoma by inoculation in the vagina of a bitch, when seven dogs had connection with her. Two of the dogs developed sarcoma of the penis three and a half months later.

2. **Primary Cancer of the Appendix.**—Landau reports a case of this nature which he met with in a woman, thirty-three years of age. It was removed together with the uterus, and the patient recovered. A very complete macroscopical and microscopical description is given, and the subject of primary carcinoma of the appendix is discussed at considerable length.

3. **A New Proposition for the Control of the Worst Forms of Eclampsia.**—Sippel's suggestion is to split the capsule of the kidney on the theory that the eclampsia is due to increased tension in the contents of the capsule rather than to interstitial changes or arterial fluxion.

4. **Pathogenesis of Acute Hæmorrhage from the Pancreas and Necrosis of the Pancreas.**—Polya says that the entrance of duodenal contents into the excretory duct of the pancreas even in very small quantity produces in a very short time a fatal illness in dogs, which exactly resembles the severe forms of human fatty tissue necrosis both in its course and in the pathological picture. He says also that the entrance of trypsin into the excretory duct of the pancreas produces in that organ serious degeneration, necrosis, and hæmorrhage, such as usually accompany fatty tissue necrosis, and end fatally. He also states that marked macroscopic changes of the pancreas may be completely wanting even in severe cases of fatty tissue necrosis which originate from the pancreas.

5. **Pathogenesis and Treatment of Infantile Splenic Anæmia.**—Wolff reports a case of infantile splenic anæmia in which he performed splenectomy with the result that the number of erythrocytes were increased more than tenfold, the proportion of the white to the red corpuscles was changed from 1:12 to 1:69, and the hæmoglobin was increased from 40 to 51. The general condition of the child was improved in every way.

6. **Borovertin.**—Mankiewicz gives the chemical composition of this drug, and says that he and his associates have used it in over a hundred cases, in some few of which urotropin had proved unsatisfactory, with more or less beneficial results. He finds that it keeps the urine clear and acid when catheterization is necessary after operations, and that it has a soothing effect in cases of tenesmus and strangury. Although it does not produce the desired effect in all cases, such as gonorrhœal cystitis, pyelitis, stone in the kidney, and tuberculosis of the bladder and kidney, yet even in these cases it is frequently beneficial. One case of phosphaturia was uninfluenced by the drug, another on the contrary was cured. He does not state that it is a panacea for all bacterial diseases of the urinary apparatus, but does assert that it is of equal value with urotropin in all cases, of greater value in some, and that it is particularly indicated in cases in which frequent catheterization is necessary on account of hypertrophy of the prostate and weakness of the bladder, or after operations.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT.

December 11, 1906.

1. Bacteriological Investigations in Regard to Autan, a New Method of Disinfection by Means of Formalin, By SELTER.
2. Experience with Lumbar Anæsthesia Produced by Novocain, By HENKING.
3. The Technics of Local Anæsthesia, with Particular Reference to the Use of Novocain-Suprarenin, By DIETZE.
4. Experience with Novocain, By STEIM.
5. Bacteriological Condition at the Autopsy of a Carrier of the Typhus Bacilli, By LEVY and KAYSER.
6. The Danger of Transmission of Infectious Material Through the Telephone, and How to Guard Against It, By TOMARKIN.
7. Importance and Applicability of Physical Methods of Treatment in Medical Practice, By VIERORDT.
8. The Origin of Left Sided Symptoms in Perityphlitis, By BURKHARDT.
9. The Electrotherapy of Circulatory Disturbances, By HORNUNG.
10. A New Principle in the Operative Treatment of Glaucoma (Iridencleisis Antiglaucomatosa), By VOLLERT.
11. An Aid to Sedimentation, By SACHS-MÜKE.
12. Theoretical and Practical Observations in Regard to Our Thread Material, By WEDERHAKE.
13. Georg Eduard v. Rindfleisch, By BORST.
14. J. Zabłudowski, By MAYER.

1. **Autan.**—Selter's experiments go to show that autan is an efficient preparation of formalin for disinfection.

2, 3, and 4. **Novocain.**—Henking, Dietze, and Steim report a number of cases in which operations were performed on the abdomen, anal and inguinal regions, and lower extremities under anæsthesia produced by the lumbar injection of novocain, combined in Dietze's cases with suprarenin. Although they all appear to be much pleased with the results obtained a consideration of the cases presented is sufficient to render the reader thoughtful. Henking states that he has not met with a single case of death as the result of the injection, or with the least influence on the respiratory center, but he records great paleness with a small and rapid pulse and palpitation of the heart, in each case transient and readily corrected by a glass of wine or of warm milk, one case of serious collapse, frequent nausea and sometimes vomiting. Steim says that complete anæsthesia was obtained in fifty-three of his cases, incomplete in four, and none in two. Nausea and vomiting occurred during the operation in three cases, after the operation in two. The average duration of the anæsthesia is three hours. Dietze deals with the technics of the production of anæsthesia by this means.

6. The Danger of Transmission of Infectious Material Through the Telephone, and How to Guard Against It.—Tomarkin investigated the public telephones and was able to obtain from them the microorganisms of a number of infectious diseases. He presents his findings in tabulated form, as well as his findings after the telephones had been disinfected with a certain preparation.

10. Operative Treatment of Glaucoma.—Vollert speaks very favorably of Holth's operation of iridencleisis for glaucoma, which he says he has performed for the past seven years. He seems to think that it is superior to iridectomy.

R. R. MAHONEY

December 8, 1906.

1. Researches on a New Combination of Salicylic Acid Intended for Internal Use, By PUBLIO CIUFFINI.
2. Two Cases of Sarcoma in Testicles Retained Within the Abdominal Cavity, By VINCENZO COZZA.
3. The Treatment of Heart Disease by Dechlorization, By R. MASSALONGO and G. ZANDELLI.
4. Clinical Contributions to the Study of Heart Sutures (Recovery), By GIACOMO BUFALINI.

2. Sarcoma in Retained Testicles.—Cocuzza reports two cases of sarcoma in ectopic testicles. In both of these the diagnosis was made, owing to the rapid increase in size of an abdominal tumor, the absence of the testes from its normal position, and the tendency of ectopic testes to become the seat of malignant growths. In both cases the tumors were removed, and the patients made good recoveries. It is said by some authors that the reason why ectopic testes are more prone to become the seat of sarcoma is that in the ectopic organ there is a tendency for an increased growth of interstitial tissue. The present author does not think that this is the case, so far as an examination of his two cases tends to show. If it were true that these malignant tumors originate in the interstitial tissue of the testes this tissue would show some changes of structure which would indicate the transformation of interstitial elements into tumor cells.

3. A Diet Poor in Chlorides in Heart Disease.—Masalongo and Zandelli conclude from a study of two cases of heart disease in which they watched carefully the effect of the exclusion of chlorides that the retention of chlorides is a constant phenomenon in patients with poorly compensated heart affections. Under these conditions, by simply diminishing the amount of chlorides ingested, we can restore the equilibrium destroyed by the cardiac trouble. The method of dechlorization is also a very good means of studying the functional condition of the heart for the purposes of diagnosis and prognosis. When this diet alone does not relieve the symptoms a diuretic should also be administered, or also a heart stimulant. The diet has also the effect of preventing attacks of cardiac failure. We should always examine the urine of cardiac patients for the amount of chlorides passed in twenty-four hours in order to determine the presence of retention of chlorides so as to discover indications for dechlorization.

ROUSSKY WATCH

November 25, 1906

1. Materials for a Study of Tuberculous Affections of the Esophagus and Stomach (Concluded), By SERGEI GROUSDIEFF.
2. The Influence of Various Proteids of Food Upon Glycosuria, and Acidosis in Diabetes Mellitus, By P. I. FILOSOFOFF.
3. The Duration of Life in Trypanosoma Rouget Under Artificial Conditions, By V. L. YAKIMOFF.
4. An Attempt to Study the Metabolism of Iron in Infants (Continued), By N. I. KRASNOROFSKI.

1. Tuberculosis of the Stomach.—Grousdieff concludes from his study of this subject that the rarity of tuberculous infection of the stomach is due partly to the structure of the organ, and partly to the action of

the acid contents. When lymphoid changes take place in the mucosa, or when the acidity of the contents is diminished, the chance for infection is offered. Infection through the blood is rare. Most cases of tuberculosis of the stomach run along with very few symptoms, save when there is an ulcer, or when there is tuberculosis of the omentum. The diagnosis, therefore, is difficult and cannot be made unless there is tuberculosis in other organs. The treatment is the same as that of tuberculosis elsewhere, and in the case of ulcers surgical methods have occasionally been adopted with

2. The Influence of Various Food Proteids in Diabetes.—Filosoff investigated the influence of various food proteids upon the glycosuria of diabetes, and inasmuch as the diet constitutes the chief means of treatment in diabetes and the proteids have much to do with the degree of acetonuria present this investigation has great practical interest. It is well known that different proteids have a different faculty of producing sugar. Filosoff found that casein and the proteids of milk are the most fruitful sources of sugar, while the whites of egg were the poorest producers of sugar. A middle position is occupied by the meat of horned cattle. Casein contains the largest amount of monoamine nitrogen, next to it in this respect comes the whites of egg. It seems that the proteids containing the largest amounts of amine acids produce the greatest amount of sugar. The experiments of Filosoff show that the amount of acetone in the urine was inversely as the amount of sugar or of the sugar forming groups in the proteids ingested. If these are the facts then theoretically it is impossible to treat diabetes by prescribing a diet which would exclude the formation of sugar, because even the simplest proteids such as the histon and the protamine contain traces of amine groups, which are the elements of proteids giving rise to the formation of glucose. An interesting observation made in the course of this study showed that when some small amount of carbohydrate (two apples) was added to the albuminofatty diet of a patient the amount of acetone diminished considerably, and after a few days the diacetic action disappeared entirely, while the sugar also diminished. This favorable effect of small amounts of carbohydrates is difficult to explain, but nevertheless is of considerable practical value.

ANNALS OF SURGERY.

December, 1906.

1. The Question of Early Operation in Cases of Intracranial Injury, By C. PHELPS.
2. Fracture of the Base of the Skull. Analyses of Five Hundred and Thirty Cases, with Particular Reference to Treatment and Prognosis, By L. G. R. CRANDON and L. T. WILSON.
3. On the Technique of Operations on the Head and Neck, By G. CRILE.
4. The Bone Metastases of Hypernephroma. A Report from the Massachusetts General Hospital Clinic, By C. I. SCUDDER.
5. Cancer of the Gallbladder and Ducts, By J. G. SHERRILL.
6. Tumors of the Mesentery; with Report of a Case of Fibroma, By L. G. BOWERS.
7. Why Gastroenterostomy is Not a Harmless Operation, By M. M. PORTIS.
8. Surgical Treatment of Perforating Gastric Ulcer, with Report of Three Cases, Two Being Acute and One Chronic, By R. G. LE COULE.
9. Acute General Peritonitis Without Demonstrable Lesion, By E. MARTIN.
10. Aneurysmal Varix, By J. C. STEWART.
11. CONRAD VON

1. Early Operation in Intracranial Injury.—Phelps summarizes his paper as follows: 1. Epidural hæmorrhage demands operation if the case does not obviously tend to spontaneous recovery, or if a fatal issue is so threatening as to leave no doubt in the matter. 2. Men-

ingeal contusion with symptoms cannot be differentiated from epidural hæmorrhage or from diffuse cerebral œdema with which it is always associated. Intracranial hæmorrhage associated with cerebral lesions usually originates from the pia mater, and indicates operation where the cerebral lesion is of minor importance. 3. Cerebral contusion, (a) if limited does not call for operation, (b) if diffuse, it has two varieties, one having vascular disturbance, not self limited, not involving the integrity of the cerebral cells, but tending to destroy their function. In the other variety there is progressive disintegration of cellular structure which the natural forces are unable to restrain. Operation is indicated in the first variety, while in the second relief of pressure will not prevent the organic changes. It is impossible to state definitely the best time to operate, in general. 4. The mixed cases include cerebral contusion combined with pial or epidural hæmorrhage. The estimated relative importance of the lesions will decide as to the question of operation. The correctness of this estimate will depend upon the ability of the surgeon.

2. **Fracture of the Base of the Skull.**—Crandon and Wilson urge as routine treatment in all cases of even suspected fracture of the base of the skull, rest in bed for at least three weeks. The patient should be in a small dimly lighted room, with little to attract his attention. He should have a small pillow, or none at all. He should see few visitors, take his nourishment in the dorsal position, and be free from excitement. His food should be easily digested, cathartics should be used freely, and straining at stool should be absolutely avoided. Headache should be controlled by appropriate sedatives, and it is advisable that the patient be kept more or less somnolent. It must be remembered that a fracture exists, even though the patient feels perfectly well, that a bone will not heal in three days, and that the treatment which keeps a patient in bed only until he feels like getting up is not a rational or careful treatment.

3. **Operations on the Head and Neck.**—Crile devotes his paper to consideration of the control of hæmorrhage in the various operations on the head and neck, and to a discussion of the plan and extent of dissection in cases of malignant tumor. He considers four distinct methods for controlling arterial hæmorrhage: (1) The head up posture, diminishing the blood pressure and the flow of arterial blood to the operative field; (2) permanent ligation of the external carotid artery, with its danger of cerebral embolism; (3) ligation, with artery forceps from point to point; (4) the temporary ligation of the common or external carotid in the head up inclined posture, the securing of each bleeding vessel, and the application of the pneumatic suit to prevent cerebral anæmia. For the control of the venous hæmorrhage he recommends the head up posture and the use of a rubber dam turban. The dangers in the head up position are air embolism and cerebral anæmia, and must not be overlooked. The control of the hæmorrhage and the proper management of the anæsthetic now permits one to treat cancer of the head and neck as a case of straight dissection, the object of which is to remove the primary focus of disease and the metastases or probable metastases.

7. **Gastroenterostomy Not Harmless.**—Portis gives the following conclusions: 1. The stomach may be regarded as an organ for the protection of the bowel. Gastroenterostomy is a dangerous operation. 2. Functional disorders following this operation may interfere with nutrition. Severe diarrhœa may occur from premature emptying of the stomach, and from failure of neutralization of its acid products by the bile and pancreatic juice. 3. The many recorded cases of ulcer of the jejunum following gastroenterostomy should prevent its performance, except as a final resort. 4. Neurasthenics with chronic dyspepsia are made worse by

this operation. The same is true of dyspepsia from imperfect mastication, of atonic dilatation of the stomach, and of gastropnoia. 5. No operation is indicated for acute ulcer, unless there is perforation or serious hæmorrhage. 6. Operation for chronic ulcer is not indicated, unless there are repeated hæmorrhages, grave adhesions, or other persistent bad symptoms. 7. The operation is always indicated if the natural evacuation of the stomach is impossible and pyloroplasty or gastroduodenostomy is not feasible. Closure of the pyloric opening should be included with the gastroenterostomy.

PÆDIATRICS.

December, 1906.

1. On Chronic Appendicitis and the Early Diagnosis and Treatment of Acute Appendicitis in Children, By BROCA.
2. Some Forms of Vomiting During Early Life, By H. ASHBY.
3. Acute Disease of the Bone in Children, By G. ROSE.
4. Food Fever in Children, By EUSTACE SMITH.

1. **On Chronic Appendicitis and the Early Diagnosis and Treatment of Acute Appendicitis in Children.**—Broca speaks of appendicitis as the localization of a preexisting enterocolitis, this process being usually a chronic one with acute episodes. Chronic and acute appendicitis should be carefully differentiated in the study of the diagnosis and treatment of this disease. In the chronic condition there are usually well marked symptoms of dyspepsia, with gastrointestinal flatulence, infectious phenomena being usually absent. In another series of cases the infectious elements predominate. In the acute episodes of this disease it is desirable to defer an operation unless it seems to be imperative as a life saving measure. Of course it is desirable, when possible, to operate within the first twenty-four hours of the attack if the case should come to the notice of the surgeon within that period. Error in diagnosis in this disease in children is quite possible in both the peritoneal and the septic varieties. As to the operative technique for the different varieties of the disease, the following are the author's rules: 1. If there is diffuse peritonitis, there should be a long incision in the right iliac fossa, the appendix being removed if possible. Frequently there must also be median and left iliac incisions with drainage by rubber tubes. 2. If there is encysted suppurating peritonitis it should be treated as a single abscess with a large incision. The appendix may be removed if it can be done without too much violence to the tissues contiguous to it. 3. In delayed or deferred operations the absolute indication is to remove the appendix, which is always possible, but not always easy.

2. **Vomiting During Early Life.**—Ashby states that vomiting may be the expression of an irritant or toxine acting upon some distant part, as well as one acting locally on the stomach. In infancy the vomiting reflex is always sensitive, like the crying reflex, the coughing reflex, and the heat reflex. With children of a neurotic type, those who are sick and those who are badly nourished, this sensitiveness is exaggerated. Nearly all the troublesome cases are in those babies who are artificially fed. If there is stenosis of the pylorus vomiting cannot be prevented, while if the infant is breast fed the mother's milk is, as a rule, too rich. In many of the cases there is gastric inertia, dilatation with gas from decomposing contents, and then rejection and intolerance. Washing out the stomach and then beginning again with small quantities of whey or diluted milk will often enable an infant to get a fresh start. Vomiting with fever may be the initial vomiting of scarlet fever, the severe and continuous vomiting early in pneumonia, the severe vomiting with high fever in influenza, persistent vomiting during diphtheria or convulsions, etc. Attacks of vomiting

in eruptive children may begin suddenly and continue for several days with diarrhoea, with action in the breath and in the urine. These attacks are very suggestive of meningitis, but may be due entirely to gastrointestinal intoxication. Vomiting with peritonitis and obstruction of the bowels points necessarily to urgent conditions within the abdominal cavity.

3. Acute Disease of the Bone in Children.—Rose sums up his paper in two propositions: 1. In the long bones of children acute diaphysitis is the primary disease, and acute septic arthritis, periostitis, osteomyelitis, epiphysitis, and necrosis are but results and manifestations of the original pathological condition. These different manifestations are due partly to causes not yet understood, and partly to such causes as the virulence and site of the attacking microorganism, the varying amount of ossification of both epiphysis and diaphysis and the relation of the epiphyseal cartilage to the capsule of the joint. 2. When we find great tenderness and pain on pressure at the end of a long bone in a child, together with severe constitutional symptoms, it is imperative to regard the case as one of acute septic diaphysitis, and operate immediately, even though there may be no visible swelling.

THE PRACTITIONER.

December, 1906.

1. Cancer of the Stomach, By W. H. WHITE.
2. The Diagnosis and Treatment of Cancer at the Angle of the Mouth, By G. L. CHEATLE.
3. The Treatment of Bronchiectasis, By A. CHAPLIN.
4. Urinary Excretion in Bright's Disease, By F. A. BAINBRIDGE.
5. Serum Therapy, By W. D'E. EMERY.
6. Intussusception in Infants, By C. H. FAGGE.
7. Physical Methods of Treating Heart Disease. Rest, Exercise, Electrical Applications, and Mountain Air, By A. G. BENNETT.
8. Recent Work on Typhoid Fever, By C. B. KER.
9. A Contribution to the Ætiology of Typhoid Fever, By J. T. C. NASH.
10. The Immediate Suture of Ruptured Perinæum, By S. SHEILL.
11. The Diagnosis and Treatment of Renal Colic, By H. UPCOTT.

1. Cancer of the Stomach.—White states that the stomach is the organ most frequently attacked with cancer. In ten years sixty patients at Guy's Hospital died from this disease. The diminution or absence of hydrochloric acid from the contents of the stomach is very important in the diagnosis of this disease. The gastric juice is also deficient in this respect when cancer is present in any other portion of the body, the deficiency being greater than in the presence of other diseases which may be characterized by a similar condition. It is suggested that cancerous growths may produce a secretion which inhibits the formation of hydrochloric acid by the gastric glands. Another observation of importance is that gastric ulcers or their scars may be followed by cancer. The all important point is early diagnosis, but this is well nigh impossible in some cases. If dyspepsia and pain are present a test meal should be given. The cancer patient soon loses strength, the dyspeptic though uncomfortable may do his work as usual. Late symptoms are tumor, nausea, vomiting, hæmatemesis, gastric dilatation, and enlargement of the left collateral glands.

2. Cancer at the Angle of the Mouth.—Cheatle desires to point out that cancer beginning at the angle of the mouth behaves in the same way as when it begins on the lower lip, spreading to the cheek and along the upper and lower lips. The positions of the muscles of this region form accurate guides as to the path by which cancer extends. Before an operation the mouth must be cleansed and defective teeth removed. If the growth is small the incision on the lower lip should begin near the median line, penetrate all the tissues to

the inferior maxilla, and pass along its lower margin almost to the masseter muscle. The incision in the upper lip also begins near the middle line, penetrates to the bone, curves along the base of the ala nasi, and then passes in a semicircular direction to the anterior border of the masseter. The two incisions are then joined, the convexity of the incision being backward. The attachments are then divided, and the growth removed. The submaxillary, submental, and anterior triangle of lymphatic glands are then removed *en bloc*, a suitable flap exposing all but the submental glands. The latter are exposed by incising the tissues under the chin and then drawing them aside with a retractor. The flap is then fitted over the gap from which the tissues have been removed, and accurately stitched, tubes being adjusted at either of the lower angles.

3. The Treatment of Bronchiectasis.—Chaplin considers a chronic and a more acute type, the former being the more common. The former results from chronic inflammation of the bronchi, pleura, or lungs, with consequent dilatation of the tubes and fibrosis. Its symptoms are turgid complexion, full pulse, dyspnoea, paroxysmal cough, profuse expectoration, and clubbing of fingers and toes. The acute type is distinguished from the chronic (1) by occurring in early middle life, (2) by originating from acute inflammation of the lung or pleura, (3) by prompt dilatation of the bronchi, (4) by grave symptoms, (5) by less pronounced contraction of the side of the chest, (6) by invasion of only a portion of lung, (7) by the small number of dilated bronchi, (8) by ulceration in the bronchial walls, (9) by metastatic phenomena. Fœtid expectoration with septic absorption is a common outcome of the disease. Treatment should be directed toward preventing this condition, the sputum in the tubes being removed by (1) the method of position, (2) the agency of drugs, (3) by surgical operation. To effect the first measure the head should be kept below the level of the remainder of the body. For the second emetics, stimulating expectorations, and prolonged inhalations of coal-tar creosote may be employed. Surgical operations are seldom indicated, and it is believed that they have frequently made conditions worse, or have proved fatal where other measures might have succeeded.

4. Urinary Excretion in Bright's Disease.—Bainbridge states that recent evidence tends to show that the kidney produces urine by a process of secretion. In Bright's disease the kidney may fail to respond to the normal chemical stimulus, the stimulus may be deficient in abnormal constituents—may be excreted by the blood. In acute nephritis the vascular engorgement lessens the blood flow through the kidneys, and thus diminishes the chemical stimulus to the renal epithelium, the urine being scanty. In the chronic forms the morbid changes are epithelial, and the urine is usually abundant. The secretory power of the kidneys for solids is defective and urea and salts are retained when the ingestion of nitrogenous food or sodium chloride is excessive. Retention of chlorides occurs when the intake is excessive or the secretory power of the kidneys is impaired. Retention of salt is determined by the kidneys rather than by the tissues in general. Abnormal metabolic processes are present in Bright's disease, resulting in aminoacids in excessive quantity, and showing an increase of ammonia with a decrease of urea.

6. Intussusception in Infants.—Fagge speaks of this as the commonest form of acute intestinal obstruction in infants. Prompt diagnosis and treatment will usually lead to a successful issue. It is probably most common in infancy on account of the great mobility of the cæcum and ilium, and the length of the mesentery during that period. Sudden abdominal pain, screaming, refusal of food, drawing up the limbs, and vomiting are its early symptoms. Blood and slime are passed if the case continues five to ten hours. The infant quickly

presents the phenomena of shock. A sausage shaped tumor may often be detected, especially in the ileocaecal region. In examination the author recommends anaesthesia, the right index finger in the rectum, while the left hand gently palpates the abdomen. The condition must be carefully differentiated from tuberculous peritonitis. The chances of recovery from an operation are best if the latter is performed within twenty-four hours of the occurrence of the lesion. Inflation of the intestine with air or fluid may be tried only when one is unable to have abdominal section performed. Reduction of the invaginated intestine in infants is preferable to resection, and reduction can be more easily accomplished if the intestine is first emptied of its contents by the aid of a trocar.

7. Physical Methods of Treating Heart Disease.—Bennett considers rest one of the most important factors in treating heart disease. In certain stages of the disease it must be rest in bed, though recumbency may be impossible. Conversation with friends is to be allowed, but not to the point of exhausting fatigue. Passive exercise is the next measure of treatment, massage being the best form. This must be used with great intelligence according as effleurage, friction, petrissage, or tapotement seems indicated. Electrical stimulation may be given over the præcordium and scapulæ with a moderately strong faradic current. When massage is employed the author prefers to begin with effleurage to the extremities, especially in the more serious cases. The electric bath is not esteemed very highly by the author, he thinks the same results can be produced by suggestion. Active exercise should next be undertaken with moderate movements of the arms and legs. Deep inspirations must be practised, but this must not be in high altitudes, at least during the early period of treatment. Rarefied air may be inhaled in cases in which there is high arterial tension, palpitation, cold extremities, tinnitus aurium, and headache.

ARCHIVES OF THE ROENTGEN RAY.

January, 1907.

1. The Röntgen Rays in the Treatment of Lupus.
By J. HALL-EDWARDS.
2. A Plea for Static Electricity, By MARGARET M. SHARPE.
3. The Treatment of Motor Insufficiency and Dilatation of the Stomach by Means of the Triphase Alternating Current.
By GEORGE HERSCHELL.
4. Methods of Applying High Frequency Currents.
By W. F. SOMERVILLE.
5. Fluorescence and Phosphorescence,
By EDWARD L. NICHOLS.
6. On the Influence of the Number of Electric Discharges on the Quantity of X Rays Emitted by an X Ray Tube,
By H. BORDIER.

1. The Roentgen Rays in the Treatment of Lupus.—Hall-Edwards says that when lupus attacks the face, it not infrequently happens that the mucous membrane of the nose is affected for some distance up the nostrils, and is exceedingly difficult to treat with an ordinary x ray tube. For this purpose he has adopted the expedient of applying the rays in small doses to the interior of the nose, mouth, ear, and other cavities, by means of highly exhausted electrodes used in conjunction with a high frequency apparatus. Formerly such electrodes were generally attached to one end of the small solenoid, the current being passed directly through them to the patient. Used in this way the electrodes are soon spoiled, either by the vacuum running up too high or by the passage of a spark through the glass. Again, the application of ordinary high vacuum electrodes to the cavity of the nose is apt to be painful, and the sparking from the tube to the free edge of the nostril is an inconvenience. The electrodes which he uses are highly exhausted tubes without any terminals. The mode of application is as

follows: The patient is placed on the high frequency couch, which is connected to the solenoid in the ordinary way. The operator then takes the electrode in his hand and brings it into contact with the affected part, and thus sets up a flow of current between the patient and himself along the tube. In order to avoid sparking round the nostril, the device of a short length of india rubber tubing slipped over the glass is efficacious. Tubes used this way last a long time.

2. A Plea for Static Electricity.—Margaret M. Sharpe observes that it would be impossible to enumerate the different conditions of ill health which may be successfully treated with static electricity. There are some, however, in which it exceeds in value any other known remedy. Among these may be mentioned, first and foremost, all those conditions of depressed vitality which come under the classification of "neurasthenia"—cases in which force has been given out beyond the recuperative power of the patient, whether as too much work, too much anxiety, or too much excitement. All these derive certain and speedy benefit from static electricity. The author has had many opportunities of proving this in the cure of patients who had tried all the other remedies—drugs, change of air, massage, water cure, and rest cure. In cases where there is great debility accompanying a specific disease, notably tuberculosis, the tonic effect of static electricity is a valuable adjunct to other treatment, particularly where there is loss of appetite and loss of sleep. Besides these there are to be mentioned diabetes, uric acid diathesis, rheumatoid arthritis, x ray dermatitis, alcoholism, drug habits, and others.

3. The Treatment of Motor Insufficiency and Dilatation of the Stomach by Means of the Triphase Alternating Current.—Herschell states that the prospects of cure in any particular case will depend upon: 1. The stage of the disease: he thinks that we may, under the most unfavorable circumstances, legitimately expect to bring the disease back a stage—that is to say, to convert cases of the third degree into the second, those of the second into the first. 2. The technics of the operator: the physician should either make the application with his own hands, or, if not, supply precise directions upon these points, checked day by day by a careful examination of the actual effects produced upon the patient. 3. The willingness of the patient to devote a sufficient time to the cure.

6. On the Influence of the Number of Electric Discharges on the Quantity of X Rays Emitted by an X Ray Tube.—Bordier writes that the number of impulses which must pass through a tube in order that it shall emit a given quantity of x rays of a certain quality is practically the same whatever the rate of rotation of the interrupter. This result might have been foreseen, for the action of the x rays on the barium platinocyanide is due to the addition of the small quantities emitted as each impulse traverses the tube; and, other things being equal, the quantity thus emitted at one impulse should be the same whatever the interval of time intervening between successive impulses. The practical conclusions to be drawn from this fact are the following: 1. The duration of a radiotherapeutic séance, or the time of exposure required for a radiogram, can be reduced by increasing the number of impulses which traverse the focus tube per second. 2. In noting the conditions under which an irradiation was given, it is necessary not only to know the intensity of the primary current, the quality of the rays, etc., but also the number of interruptions of the current. The absence of any data on this subject may account for the variations in the length of exposure recorded as necessary for a radiogram with a given focus tube—variations which have been brought forward as an objection to the use of radiography as the basis of a measurement of the quantity of x rays.

It is, therefore, desirable that all interrupters employed in radiology should be furnished with some means of determining the velocity with which the interruptions in the current are taking place, since this has a direct influence on the quantity of rays emitted by the tube.

Letters to the Editors.

A PROTEST.

256 WEST FIFTY-SEVENTH STREET,

NEW YORK CITY, January 5, 1907.

To the Editors: In the *Journal* of July 15, 1905, I described an x ray tube that I had designed with special reference to the safety of the operator. Briefly, it consisted of two bulbs of lead glass, in one of which the target was situated, and opposite to it there was a small window of soda glass. The form of the tube was as here shown (Fig. 1).

The thin soda glass window in front of the target permits the x rays to escape readily, while the lead glass surrounding it greatly obstructs their passage and

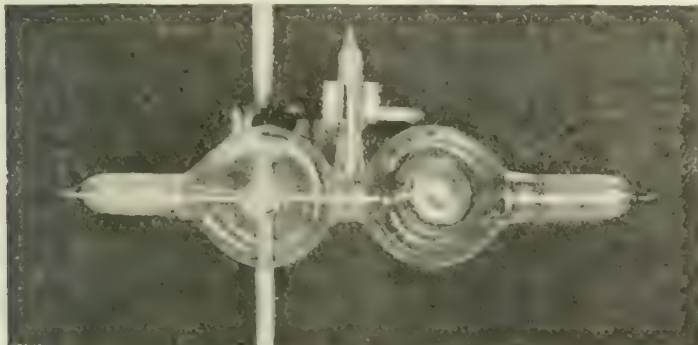


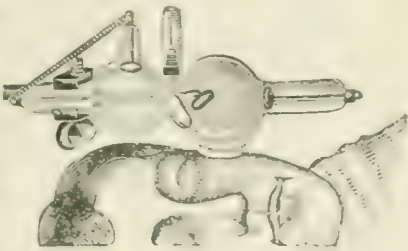
FIG. 1.—The author's X ray tube.

protects the surgeon from their ill effects.

In the recently issued catalogue of a manufacturer of surgical and other apparatus I find the following:

Piffard's Cancer Tube.

Also for Skin Diseases, for static machine or Coil. The lead glass front is so constructed as to make burning almost an impossibility.



In the description here quoted will be noticed the ridiculous statement that the window front is of lead glass. It will be further noticed that the illustration shows the active portion of the tube in direct contact with the skin. This is not in accordance with any recommendation that I have given, and is, I think, an exceedingly dangerous procedure. One serious burn has been reported to me following such an application; therefore I enter this protest against the incorrect description of the tube, and especially against its use in the manner shown in the illustration.

HENRY G. PIFFARD.

THE TEMPLE COLLEGE, OF PHILADELPHIA.

PHILADELPHIA, January 5, 1907.

To the Editors: Knowing the reputation of your excellent journal for accuracy of statement and fairness of treatment, I feel sure that you will gladly insert

this correction of the notice which you gave last week concerning the union of the Philadelphia Dental College with the Temple College, of Philadelphia, and that you will be glad to state from us that there is no intention of merging the Philadelphia Dental College in the Temple College, nor in any way of "absorbing" it. It is simply a federation of these institutions in which the identity of each will still be maintained while they work together for their common good. Neither the Temple College nor the Philadelphia Dental College is a sectarian or church institution in any way, both being as absolutely unsectarian as any educational institution in the land. The alliance between these corporations has been brought about for the purpose, on the part of the public spirited citizens of Philadelphia, of greatly increasing the prestige and facilities of both colleges.

RUSSELL H. CONWELL,

President of the Temple College.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting of November 19, 1906.

The President, Dr. T. E. SATTERTHWAITE, in the Chair.

Morphology a Necessary Factor in the Study of Pathogenic Protozoa.—Professor GARY N. CALKINS, of the Department of Zoology, Columbia University, made an address, illustrated with lantern demonstrations, on this subject. The title, he said, had been chosen for the reason that there seemed to be a growing tendency to drag protozoa research into the somewhat narrow lines of bacteriological technique, and so to limit the normal development of that knowledge. In regard to the cultivation of a protozoon on artificial media, Dr. Novy and his collaborators were to be congratulated on their results with the flagellate trypanosomata. Perhaps some of the intracellular parasites could eventually be similarly cultivated, but it was not necessary to wait for this time before studying them. There had really been little of importance added to our knowledge of the life history of trypanosomes by this particular method of study, while, on the other hand, on the old time basis of protozoa research, morphology, a vast bulk of knowledge had been accumulated. Form after form had been studied and identified, and life histories had been made out, confirmed and established. In the more or less complicated form changes which the protozoon passed through in its life history there was an essential difference from the more stable bacteria type of structure, and morphology in protozoa had an importance quite apart from the particular structure of any cell at any one time. The method to be adopted in studying protozoa, pathogenic as well as harmless, free living forms, was that which took into consideration the multiple form changes of the organism in its normal habitat. Thanks to the abundance of data which students of the group had brought together, we had certain well defined morphological criteria which lessened the difficulties in this method of research; and the practical eye could usually tell the difference between a protozoon and a degeneration product, secretion, or the like.

He took as an illustration the variations in vitality of the *Paramacium caudatum*, as observed in its normal culture habitat, hay infusion. By the use of artificial stimulus the vitality was renewed three times, so that the 742 generations, which are developed before the protozoon died out, represented four complete life

cycles. In any one of these cycles there could be traced well marked periods of vitality, and each period was characterized by certain peculiarities by which the stage of the organism in its life cycle could be determined. Thus, there was an initial stage of great reproductive energy, a stage in which cell division followed cell division in rapid succession and in which the structure of the cell conformed strictly to the type of paramœcium. This period was followed by a second in which vitality began to wane (as shown by the division rate), and with this condition there were certain physical and chemical changes in the protoplasmic make up of the organism. It became very plastic, its usually firm and consistent membrane became soft and miscible, and two organisms on coming in contact would fuse at the point of contact. There were also certain nuclear changes by which one could identify this stage in the life cycle. Finally, this stage led into the last period of the cycle, characterized by vacuolar degeneration and gradual breakdown of the cell parts and death from old age. These three periods thus simulated the periods of youth, adolescence, and old age in the higher animals, and the speaker said he therefore felt justified in the demand he had recently made that the entire cycle, and not the single cell, should be made the basis of species and genera, and that the whole congeries of cells should be regarded as the individual organism. All protozoa passed through similar cycles of vitality.

The most important period was that in which the organisms changed in physical and chemical make up preparatory to the sexual union whereby vitality was restored. In different groups of protozoa there were different characteristic changes at this period. In the forms of protozoa, for example, which were ordinarily amœboid there occurred characteristic nuclear changes, and these were practically of one pattern throughout the entire group of sarcodina. Thus this characteristic had been recognized in a great number of widely separated types of rhizopods. A good illustration was seen in *Amœba proteus*, which had a method of chromidium formation by nuclear fragmentation. Similar fragmentation was characteristic of the foraminifera and radiolaria. Another type of chromidium formation, however, was found in some of the shelled rhizopods, like *diffugia*, *centropyxis*, and *arcella*, and in general in the fresh water shelled forms. This second method of chromidium formation was by transfusion of chromatin substance through the wall of the nucleus and secondary accumulation in the cytoplasm as distributed chromatin granules. During the period of adolescence of such rhizopods this accumulation kept going on until the cytoplasm was practically filled with the distributed particles. As in the other forms, such chromatin distribution was the forerunner of sexual gametes, and indicated the period of sexual maturity.

In the pathogenic forms, Professor Calkins went on to say, it was this chromidium formation which enabled the investigation to distinguish protozoa from various intracellular structures in diseased tissues, such as degeneration products, secretions, and blood elements. It was a characteristic which distinguished protozoa from bacteria and from the various cellular structures in metazoa, and it was a morphological feature *par excellence* by which pathogenic protozoa might be recognized. Again, its function was the most important activity in the life cycle, since it involved sexual reproduction and continuance of the species. It was to be noted that the negri bodies, met with in rabies, and the organism of smallpox had distributed chromatin, which was formed as in *centropyxis*, *arcella*, etc., and it was probable that both these organisms belonged to the rhizopod type of protozoa.

Dr. JAMES EWING said that, while he could not altogether agree to some of the views of Professor Calkins,

he could not but acknowledge the importance of eliciting the labors of the zoologist in pathological research, and it seemed to him a matter for great encouragement and congratulation that all over the world men engaged in related fields of work were now collaborating with the medical profession in this department of science.

Is Food Containing Sulphites Injurious to Health?—

This was the title of a paper by Dr. E. E. SMITH. The attitude of the physician as such, he said, had in this connection to do only with the question of health. Our attitude in regard to the final question of expediency should not prevent an independent and correct answer to the immediate question of direct injury to the health of the consumer. In 1904, in the case of the Commonwealth of Pennsylvania *versus* Charles W. Spence, the defendant was found guilty of having sold meat which contained fourteen grains of sodium sulphite to the pound, and the scientific evidence introduced at this trial so summarized the present state of knowledge and opinions upon the subject that it might well serve as a basis for our considerations. All would agree, he thought, to the justice of the ruling of the Pennsylvania Supreme Court, that noninjurious quantities of substances essentially injurious were objectionable additions to food, and constituted food adulteration. Perhaps we were not so clear as to what constituted an essentially injurious property of a substance. It seemed to be well understood that under some conditions almost any substance (even those essential to bodily maintenance) might become unfavorable to the processes of the economy, and so, in a sense, be injurious. Such action, however, was not an essential quality of the substance, but a property arising from special circumstances, usually the quantitative relation.

Again, he believed we were agreed that where the presence of a given substance in food did not serve any beneficial purpose and might produce an injury to the body, its addition should not be tolerated. The question here to be considered, however, was as to whether sulphurous acid and sulphites, when present in food, constituted an essentially injurious ingredient. The speaker then proceeded to consider the action of these substances in the gastrointestinal tract and on the blood, the nutrition, and the kidneys. If their action in the stomach was essentially injurious it must be conceded that, so far as neutralizing the gastric juice was concerned, all antacids were equal offenders. The mere fact of any substance having the property of neutralizing the acid of this fluid did not constitute an injury until the quantitative relation reached a degree which called forth an excessive activity of gastric secretion, and in quantity capable of doing this any neutralizing substance was objectionable to the stomach. While it was as yet uncertain whether ferment action was accelerated or retarded by the presence of small amounts of sulphites, it might be said that unless the retardation was reasonably well marked, the action in this particular would probably be within the limits of physiological adaptability of the organism. It had been alleged that sulphites were irritating to the gastric mucous membrane, but this, again, was an action not due to an essentially injurious quality, but one dependent entirely upon the quantitative relation. The same property was possessed by all soluble, diffusible substances. The existence of such an action was an argument against the frequent ingestion of concentrated solutions of salines in general (not merely sulphites in particular), and no argument whatever against the ingestion of sulphites in dilute solutions. Another possibility of irritation was that by the sulphur dioxide liberated; but, while the fumes of the gas were irritating, the dilute aqueous solution was not known to be so, and there was no reason for believing that the sulphites in food were at all irritating by reason of the sulphur dioxide liberated. The whole matter of gastric

irritation was one susceptible of investigation in a very definite way, and as yet no competent evidence was at hand to show that sulphites in food had an irritating action here.

There was no evidence again that sulphites in food produced anæmia, and we could conclude with a reasonable degree of certainty that they did not. It was true that sulphites which gained entrance to the blood were oxidized into sulphates, and that they accordingly and to just that extent removed oxygen from the blood; but it had not been shown that this constituted an injury. The oxidizing of fifty grains of sulphite required about six grains of oxygen. A little calculation would show that we breathed somewhere about 30,000 times in the twenty-four hours, and that the body received upwards of 12,000 grains as a result, or about $\frac{3}{4}$ grain for each respiration. To supply the six grains of oxygen for oxidizing the fifty grains of sulphite would consequently require the oxygen supplied by only fifteen respirations. According to the testimony, the effects on nutrition were indicated by loss of weight and emaciation. If in these experiments the injury noted was due to the sulphites, it was the result of the quantity and not of any essentially injurious quality. We did not know that any such effect was produced in man, and it was reasonable to suppose that it was not. However, this, again, was a matter for experimental observation, so that there need be no doubt in regard to it. As to the effect on the kidneys of sulphite ingested with food, the experimental observations thus far made left it doubtful whether any injurious action was exerted, but the subject was one worthy of further and more carefully controlled experimental study.

Dr. WILLIS G. TUCKER, of Albany, presented a paper in which he said that the sulphites, in one form or another, had been used as preservatives for many years. He could not learn that there was any tendency to use these agents in increasing quantities, and while he did not think their excessive and indiscriminate use was to be favored, he did not believe that their employment called at the present time for special repressive measures. Such quantities as had recently been reported to have been found in canned vegetables and certain wines, ranging from 3 to 250 milligrammes to the kilogramme or litre, were not very alarming. All the older standard works on materia medica and therapeutics gave the medicinal dose of sodium sulphite and hyposulphite at from fifteen to sixty grains. Waring quoted Polli, of Milan, as having taken daily fifteen grammes (about 230 grains) of magnesium sulphite without ill effects and with apparent advantage, and said that "the great object in administering them curatively is to saturate the system with them, and for this purpose four to five drachms daily should be the minimum quantity for an adult." The *United States Pharmacopæia* of 1900 gave the dose of both sodium sulphite and thiosulphite (hyposulphite) as fifteen grains, but this was to be regarded rather as a minimum than as a maximum dose. The *United States Dispensatory*, in discussing the action of the sulphites, said: "The influence of these salts on the system in health is feeble. So far as observation has hitherto gone, they are quite destitute of poisonous properties." Dr. Tucker's present opinion was that their use might with possible advantage be regulated by law, but not forbidden, and he said he held this view because he thought no sufficient evidence had been produced to indicate that their employment was in any real sense a menace to the public health. Doubtless the general principle, that the employment of certain substances universally admitted to be objectionable in foods should be specifically prohibited by law was sound, and the prohibition of poisonous and deleterious articles was proper; but to forbid the use of all preservatives and foreign colors,

with the exception of a few of the older ones, was unwise. A great alarm would be given if it were possible to secure the proper labelling of food articles, so that compounded, artificially colored, and chemically preserved foods could be distinguished.

Dr. H. W. WILEY, chief of the Bureau of Chemistry of the Department of Agriculture, said that in the case of all the agents employed as preservatives or coloring matters the first thing which the manufacturers pleaded in support of their use was always the smallness of the dose. But these small doses, if continued for a considerable period, were often the source of decided injury to health. By permission of the head of the Agricultural Department, he was able to present in advance of their publication by the government, some of the deleterious effects of sulphites taken with food, as determined by an extended series of experiments on healthy young men conducted with every precaution to secure their scientific accuracy. It was manifestly impossible, in the limited time at his disposal, to give these experiments in detail, but he thought there could be no doubt as to the facts which they established. Among the effects observed were loss of appetite and a general feeling of ill health. Half of the subjects received sodium sulphite, and, in a great majority of instances, suffered from headache, sensations of dizziness, and occasional nausea, indigestion pains, and other symptoms. Among the other half, who received sulphurous acid, headache was very common, and while there was not so great a tendency to vertigo, there appeared to be more nausea, with a feeling of exhaustion. In general, headache was the most prominent and persistent symptom. Sulphites had a tendency to reduce the weight slowly, this tendency being continued for a considerable time after the withdrawal of the preservative. Under sulphurous acid in the uncombined form there was a slight increase in the weight, though in exceptional instances here also there was loss. Both the water and the dry matter in the feces were increased, showing to this extent an interference with digestion and the absorption of solid bodies during the passage of food through the intestine. This tendency to derange the metabolic process was more marked in the case of free sulphurous acid than in that of sulphites.

A diuretic effect was noted, and this also was more marked with the free acid. Both in the feces and in the urine the quantity of sulphur was somewhat increased, and there was a more complete reaction of the sulphur under the sulphites than under sulphurous acid, indicating that a larger portion of the acid in the free state escaped oxidation than when administered in the form of sulphite. The study of the sulphur metabolism showed the immense burden which the added sulphur placed upon the excretory organs, and it was easy to see that such a burden, if continued for a sufficient length of time, would result in serious kidney lesions. Free sulphurous acid appeared to be less injurious to the kidneys than sulphites. The data showed that a large proportion of the sulphur given as a sulphite was changed into sulphuric acid at the expenditure of much unnecessary energy, and it could scarcely be doubted that the conversion of the human body into a sulphuric acid plant must be distinctly injurious. Sulphurous acid had the effect of diminishing the percentage of nitrogen excreted as urea and of slightly increasing the percentage of nitrogen excreted in creatinin, and this was regarded as a harmful disturbance of metabolic activity. Whether sulphurous acid or a sulphite was administered, the effect was to diminish the number of both the red and the white corpuscles of the blood.

Dr. H. G. PIFFARD quoted extensively from a report of the experiments of Harrington on animals, showing injurious action on the kidneys by the sul-

phites. He then said it was quite possible to keep foods without the acid of preservatives if proper attention was given to the matter. This doubtless increased the expense somewhat, but, personally, he preferred to pay a little more for an unadulterated article than to employ one containing a preservative.

Dr. SMITH said that the points raised in the discussion were applicable to substances which were essentially injurious, but not applicable to those not essentially injurious. The report made by Dr. Wiley was certainly of great interest, but personally he did not feel that he could accept the conclusions reached without an accurate knowledge of all the data of the experiments.

Book Notices.

Jahresbericht über die Leistungen und Fortschritte auf dem Gebiete der Urologien des Urogenitalapparates. Redigiert von Geh.-Med.-Rat Professor Dr. MAX NITZE in Berlin, Dr. S. JACOBY in Berlin, nach Nitze's Tode unter Mitwirkung von Professor Dr. A. KOLLMANN in Leipzig. I. Jahrgang. Bericht über das Jahr 1905. Berlin: S. Karger, 1906. Pp. 342. (Price, 12 marks.)

This latest addition to the galaxy of "Jahresberichte" issued in Germany, is devoted to the current literature of urology. The rather cumbersome title will be abbreviated to *Jahresbericht für Urologie* in lettering the bindings and in bibliographical references. The idea of this publication originated with Dr. S. Jacoby, of Berlin, who persuaded Nitze to undertake the editorial supervision. The unfortunate death of the editor in chief when the volume was almost ready for the printer made necessary the substitution of Kollmann in his place. An excellent biography of Nitze and an appreciation of his great work in cystoscopy, by Kollmann, opens the volume, accompanied by a half tone portrait of the deceased.

The scope and the make up of this volume are similar to those already familiar in the *Jahresberichte* on other branches. The volume is subdivided into sections dealing with the anatomy, physiology, pathology, etc., of the urinary organs as reflected in the principal articles published during the year 1905. Each section is headed by a numbered list of articles which practically constitute the year's bibliography of the subject. Then follows a systematic and critical review of the most important of these articles.

Every important journal has been covered in this review, and this country has been given its due share of credit in the year's record, the abstracts of American papers being signed for the most part by Vogel and by Krotoszyner. For the next issue Hugh Young, of Baltimore, has undertaken the editorial supervision of the American reviews, the other editors besides Kollmann being Albarran, of Paris; Fenwick, of London; von Frisch, of Vienna; and Kümmell, of Hamburg.

The *Jahresbericht für Urologie* will be greeted with pleasure by every one who is interested in the progress of urology, especially by those who wish to keep in touch with the world's literature on this branch of surgery.

Die interna und chirurgische Behandlung der Gallensteinkrankheit. Vortrag auszugsweise gehalten zu Berlin am 20 April, 1906, im Kaiserin-Friedrich-Haus für das ärztliche Fortbildungswesen in Preussen. Von Professor Dr. HANS KEHR, Geh. Sanitätsrat. München: J. F. Lehmann, 1906. Pp. 176. (Price, 4 marks.)

We have here in small compass an excellent résumé of the most modern views concerning the treatment of gallstones, by one of the foremost living authorities. Professor Kehr's opinions are the deductions from his

large experience and the careful study of more than 1,100 operations. The futility of cholagogues and internal solvents is strongly emphasized, but many of the profession have yet to learn the fact. The only medical measures of benefit to the patient are local applications of warmth, rest, careful regulation of the bowels, and a properly selected diet. These may be tried for a time in the mild, catarrhal cases; wherever there is evidence of infection, however, or in severe or protracted cases, the definitive treatment is by surgery; and the indications for it are often as clear and urgent as for disease of the appendix.

Preservatives in Food and Food Examinations. By JOHN C. T. THRES, M. D. (Vic.), D. Sc. (Lond.), F. I. C., Lecturer on Public Health, London Hospital Medical College, etc., and ARTHUR E. PORTER, M. D., M. A. (Cantab.), Assistant Medical Officer of Health and Chief Sanitary Inspector, City of Leeds, etc. Philadelphia: P. Blakiston's Sons & Co., 1906. Pp. xv-484. (Price, \$4.50.)

The new pure food law that has just gone into force makes the present volume a timely one, though the authors are not convinced that there has been any great danger from the use of preservatives in food stuffs. It is true that preservatives have been used from time immemorial, and that it is likely that with the advance in scientific knowledge better preservatives will be discovered than those originally found by semicivilized man; but the buyer has a right to know whether his proposed purchase has been preserved by various chemical agents, and the State has the right to prohibit the use of certain agents deemed to be noxious to health.

In different chapters the use of the various chemical preservatives is considered, both from a physiological and from a toxicological standpoint. There are chapters on the various food stuffs and beverages and the preservatives employed to keep them for consumption. A section is devoted to coloring matters and to mineral poisons that may be used in food and drink. There is a section that gives the English law that relates to food inspection, which describes unsound meat, fish, milk products, fruits, and vegetables. Methods of chemical analysis are given, and certain legal cases, laws, and decisions are summarized. The book is well written, and is of interest to the physician as well as the sanitarian and chemist.

Clinical Bacteriology and Hematology, for Practitioners. By W. D'ESTE EMERY, M. D., B. Sc., Lond., Clinical Pathologist to King's College Hospital and Pathologist to the Children's Hospital, Paddington Green, etc. The Second Edition of *A Handbook of Bacteriological Diagnosis*. Philadelphia: P. Blakiston's Sons & Co., 1906. Pp. 240.

The author prepared this work as a simple guide for practitioners who are without training in pathology and who want a practical book to refer to, and a perusal of the book gives the impression that he has accomplished his purpose. He urges that the practitioner examine for himself whenever possible, rather than resort to the expert pathologist, because the latter can supply facts only, while the inferences that may be drawn therefrom will depend largely on the patient's clinical history and the method by which the material was obtained.

He describes the methods he has taught in his post-graduate classes, and has sought to make them simple and efficient. In the section on hæmatology, as in that on bacteriology, the conditions under which a certain examination is indicated are explained, the method employed is given in detail, and the deductions to be drawn from the results obtained, as well as the cautions necessary to interpret them, are described. The book is well illustrated and is a useful and practical work.

Miscellany.

Eclampsia. Fisch, of Berlin (*Archiv f. Geburtshilfe und Gynäkologie*, lxxi, 1), continues the gigantic statistics of eclampsia in Olshausen's Klinik, published by the director himself in 1892, and by Goedecke in 1901, adding 495 cases treated in the six years, 1900 to 1905. The mortality, even now that the treatment is much more active, and that rapid delivery has developed to a method, is very high. Rapid delivery is no panacea, though in 75 per cent. of the cases the fits ceased when the child was born. The different methods of treatment are reviewed, and can, from the enormous number of cases, be submitted to exact clinical tests.—*Through The British Medical Journal.*

First Aid Dogs in Manchuria.—The *Bulletin of the American National Red Cross* notes that after the battle of Cha-ho three dogs discovered twenty-three wounded who would have been abandoned and would otherwise have died. The Russian commander in reporting their work makes the curious observation that the dogs, accustomed to Europeans, had never discovered any Japanese wounded. These dogs, generally collies, were trained to become accustomed to firing, never received any food save from their masters, and were taught to go willingly into battle. When a dog finds a wounded man he is trained to bark until the litter bearer, guided by his barking, reaches the patient. The Russian report remarks, "what services may not be expected from this modest four footed creature, whom neither the obscurity of the night, the advance sentinels of the enemy, nor the roar of the cannon turns from his task!"—*Journal of the Association of Military Surgeons of the United States*, December, 1906.

Heinrich August Wrisberg, a celebrated anatomist, was born June 20, 1739, in St. Andreasberg, Harz, and died March 29, 1808. At the time of his death he was professor of anatomy and director of the Anatomical Institute at Göttingen. He was Röderer's successor at the university, and also taught obstetrics for several years. After completing his studies at Göttingen he took a postgraduate course in France and Holland. He received his professorship in 1763. Wrisberg was renowned for his profound and general knowledge and his remarkable skill in practical anatomy, but particularly for his large number of investigations of the nervous system. He was one of the first to describe the occasional presence of the supreme splanchnic nerve. The ganglion Wrisbergii magnum is named after him, as is also the lesser internal cutaneous nerve. He also minutely described the nerve plexuses of the female genital organs and the laryngeal cartilages called by his name. Wrisberg did an enormous amount of literary work. He published A. V. Haller's physiological works, Röderer's works on obstetrics, and Zinn's *Description oculi humani*, in two editions. He also published a large number of original papers in the *Göttinger Gesellschaft der Wissenschaft*.—Clement F. Theisen in *Albany Medical Annals*.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending January 1, 1907:

Place.	Date.	Cases.	Deaths.
California—San Francisco	Dec. 15-22	1	
France—Paris	Dec. 20-27	1	Imported
France—Clermont	Dec. 15-22	2	
Indiana—Indianapolis	Dec. 15-22	1	

Indiana—Indianapolis	Dec. 16-20	1	1
Indiana—South Bend	Dec. 16-20	6	
Indiana—Fort Wayne	Dec. 16-22	1	
Indiana—New Orleans	Dec. 22-23	1	
Indiana—Indianapolis	Dec. 23-24	2	
Michigan—Detroit	Dec. 16-20	11	
New York—New York	Dec. 16-20	6	
North Carolina—Wilmington	Dec. 16-20	2	
Ohio—Cleveland	Dec. 16-22	1	
Washington—Spokane	Dec. 16-22	4	
Wisconsin—Milwaukee	Dec. 16-22	1	
Wisconsin—La Crosse	Dec. 16-22	1	

Place.	Date.	Cases.	Deaths.
Brazil—Rio de Janeiro	Nov. 18-25	2	
Canada—New Brunswick—New Brunswick	Dec. 16-22	Present	
Canada—Nova Scotia—Halifax	Dec. 16-22	Present	
Canada—Nova Scotia—Halifax	Dec. 16-22	Present	
Chile—Santiago	Nov. 2-16	23	1
Chile—Iquique	Nov. 2-16	Present	
Colombia—Bogotá	Nov. 1-30	26	
France—Paris	Dec. 8-15	5	Imported
Great Britain—London	Dec. 9-15	1	
Great Britain—London	Dec. 15-21	1	
India—Calcutta	Nov. 10-24	1	
India—Madras	Nov. 10-30	1	
Persia—Hamadan	Oct. 1-31	Present	
Persia—Kermān	Oct. 1-31	Present	
Persia—Kermān	Oct. 1-31	Present	
Persia—Moskva	Oct. 1-31	Present	
Persia—Shiraz	Oct. 1-31	Present	
Persia—Tehran	Oct. 1-31	Present	
Persia—Yazd	Oct. 1-31	Present	
Russia—Moscow	Nov. 17-24	1	
Russia—Odessa	Dec. 8-15	2	
Spain—Barcelona	Dec. 10-20	5	

Place.	Date.	Cases.	Deaths.
Brazil—Rio de Janeiro	Nov. 18-25	1	
Cuba—Havana	Dec. 31	1	
Ecuador—Guayaquil	Nov. 1-30	14	

Place.	Date.	Cases.	Deaths.
India—Calcutta	Nov. 10-24	1	
India—Madras	Nov. 10-30	5	

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending January 2, 1907:

ANDERSON, J. E., Passed Assistant Surgeon. Directed to proceed to Reedy Island Quarantine for special temporary duty, upon completion of which to rejoin station.

BRINCKERHOFF, W. R., Director, Leprosy Hospital, Honolulu. Granted leave of absence for thirty days, from January 1, 1907.

BROWN, F. L., Pharmacist. Granted leave of absence for twenty days, from January 1, 1907.

FOX, CARROLL, Passed Assistant Surgeon. Relieved from duty in the Philippine Islands, and directed to proceed to San Francisco, Cal., reporting arrival by wire.

FOX, CARROLL, Passed Assistant Surgeon. Granted leave of absence for fourteen days, en route to United States.

FROST, W. H., Assistant Surgeon. Granted leave of absence for five days, from December 22, 1906.

GLOVER, M. W., Passed Assistant Surgeon. Granted leave of absence for one month, from January 1, 1907.

GOODMAN, F. S., Pharmacist. Granted leave of absence for one month, from December 25, 1906, under Paragraph 210 of the Service Regulations.

HALL, L. P., Pharmacist. Granted leave of absence December 11th and 19th, under Paragraph 210 of the Service Regulations.

- HUNTER, W. R., Acting Assistant Surgeon. Granted leave of absence for three days, from December 31, 1906.
- KING, W. W., Passed Assistant Surgeon. Granted leave of absence for ten days, from December 17, 1906, on account of sickness.
- LONG, J. D., Passed Assistant Surgeon. Directed to report to Medical Officer in Command, San Francisco, Cal., for temporary duty and assignment to quarters.
- McCORMAC, J. T., Acting Assistant Surgeon. Granted leave of absence for thirty days, from January 10, 1906.
- McKEON, F. H., Assistant Surgeon. Relieved from duty at San Francisco, Cal., and directed to proceed to Manila, P. I., reporting to Chief Quarantine Officer for duty.
- MILLER, CHARLES, Pharmacist. Granted leave of absence for seven days, from December 24, 1906, under Paragraph 210 of the Service Regulations.
- OAKLEY, J. H., Passed Assistant Surgeon. Leave of absence granted December 13, 1906, for three days, revoked.
- ROBINSON, D. E., Passed Assistant Surgeon. Relieved from duty on Revenue Cutter *Manning* and directed to proceed to San Francisco, Cal., reporting arrival by wire.
- RODMAN, J. C., Acting Assistant Surgeon. Granted seven days' leave, from December 28, 1906.
- ROYSTER, W. L., Acting Assistant Surgeon. Granted leave of absence for three days, from December 25, 1906, under Paragraph 210 of the Service Regulations.
- THOMAS, A. M., Pharmacist. Granted leave of absence for six days, from December 21, 1906, under Paragraph 210 of the Service Regulations.
- WICKES, H. W., Passed Assistant Surgeon. Granted leave of absence for two days, under Paragraph 191 of the Service Regulations.
- WILLIAMS, L. L., Surgeon. Directed to proceed to Baltimore local quarantine stations for special duty, upon completion of which to rejoin station.

Appointments

Dr. Arthur H. Wise, appointed an acting assistant surgeon, for duty at Port Huron, Mich.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending January 5, 1907:

- EKWURZEL, GEORGE M., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Keogh, Mont., and ordered to Fort Meade, S. D., for duty.
- HALL, JAMES F., First Lieutenant and Assistant Surgeon. Granted thirty days' leave of absence, to take effect about December 26th, 1906.
- HANSELL, H. S., First Lieutenant and Assistant Surgeon. Reports arrival in the United States on three months' leave of absence.
- HEARD, GEORGE P., Captain and Assistant Surgeon. Leave of absence extended one month.
- HUGGINS, JOHN B., First Lieutenant and Assistant Surgeon. Ordered to proceed from San Francisco, Cal., to Washington Barracks, D. C., and report to the commanding officer of the Army General Hospital at that post, for assignment to duty with Company C, Hospital Corps.
- LYSTER, THEODORE C., Captain and Assistant Surgeon. Left Ancon, Canal Zone, on special leave of absence.
- LYSTER, WILLIAM J., Captain and Assistant Surgeon. Leave of absence extended four days.
- MORRIS, SAMUEL J., First Lieutenant and Assistant Surgeon. Leave of absence extended to include January 15, 1907.
- RAYMOND, HENRY I., Major and Surgeon. Left Columbus Barracks, Ohio, with recruits, en route to Vancouver Barracks, Wash.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending January 5, 1907:

- FIELD, J. G., Surgeon. Detached from duty at the Naval Hospital, New Fort Lyon, Colo., and ordered to duty with the Marine Recruiting Party, Dallas, Texas.

- HART, G. G., Acting Assistant Surgeon. Detached from duty with Marine Recruiting Party, Dallas, Texas, and ordered to the Naval Training Station, San Francisco, Cal.
- MARSHALL, E. R., Assistant Surgeon. Detached from the Naval Station, Guantanamo, Cuba, and from duty on the *Monongahela*; resignation accepted, to take effect January 11, 1907.
- WRIGHT, B. L., Surgeon. When discharged from treatment at the Naval Hospital, New York, N. Y., ordered to treatment at the Naval Hospital, New Fort Lyon, Colo.

Births, Marriages, and Deaths.

- APPEL—HIPPLER.—In Philadelphia, on Saturday, December 29th, Dr. Albert A. Appel and Miss Caroline Hippler.
- DILLARD—RICHARDSON.—In Lincolnton, North Carolina, on Thursday, December 27th, Dr. Henry Kuhl Dillard, Jr., and Miss Julia Tabor Richardson.
- EDMISON—BANTON.—In Toronto, Canada, on Wednesday, December 26th, Dr. T. W. Bickerton Edmison and Miss Sarah Marguerite Banton.
- LANGSTROTH—PARKER.—In New York, on Monday, December 31st, Dr. Francis Ward Langstroth and Miss Frances Parker.
- PATTERSON—WING.—In Buffalo, N. Y., on Wednesday, December 26th, Dr. Archibald Bennett Patterson and Miss Jessie Leona Wing.
- SCHUYLER—VAN VALKENBURGH.—In Chatham, N. Y., on Thursday, December 27th, Dr. Arthur Hamilton Schuyler and Miss Clara Van Valkenburgh.
- TURLINGTON—TITTLE.—In Baltimore, on Monday, December 24th, Dr. Leonard J. Turlington and Miss Carrie V. Tittle.
- WHERRY—NAST.—In Cincinnati, on Saturday, December 29th, Dr. William B. Wherry and Dr. Marie Nast.

Died.

- CULPEPPER.—In Portsmouth, Virginia, on Friday, December 28th, Dr. Charles L. Culpepper.
- DINGEE.—In Philadelphia, on Monday, December 31st, Dr. William H. Dingee, aged thirty-two years.
- DUDLEY.—In Abington, Massachusetts, on Sunday, December 30th, Dr. Henry W. Dudley, aged seventy-five years.
- GLYNN.—In Flatbush, Brooklyn, on Sunday, December 30th, Dr. Joseph W. Glynn, aged thirty-six years.
- GRAHAM.—In Providence, Rhode Island, on Monday, December 31st, Dr. Simon P. Graham.
- KRUG.—In Buffalo, N. Y., on Monday, December 31st, Dr. J. F. Krug, aged fifty-six years.
- McCUNE.—In Binghamton, N. Y., on Friday, January 4th, Dr. Olive F. McCune, of Brooklyn, aged seventy-eight years.
- MORRIS.—In Astoria, Long Island, on Tuesday, January 1st, Dr. Theodore F. Morris, of Jersey City, aged seventy-five years.
- NEVILLE.—In Sutton, Surrey, England, on Monday, December 10th, Dr. Charles Neville.
- PAYNE.—In Montreal, Canada, on Sunday, December 30th, Dr. Gerard Arthur Lavington Payne, aged twenty-seven years.
- SMITH.—In Paducah, Kentucky, on Friday, December 28th, Dr. J. D. Smith, aged eighty years.
- STEIN.—In Chicago, on Sunday, December 23rd, Dr. Herman Stein, aged eighty years.
- THOMPSON.—In Chicago, on Thursday, December 27th, Dr. Mark Thompson, aged sixty-one years.
- WILLIAMS.—In Ovid, N. Y., on Wednesday, December 26th, Dr. Fred W. Williams, aged forty years.
- WILSON.—In Abosso, Africa, on Wednesday, December 26th, Dr. J. J. Wilson, of Montreal, Canada, aged twenty-nine years.
- YOUNGE.—In Fort Wayne, Indiana, on Monday, December 31st, Dr. J. W. Younge, aged fifty-eight years.
- ZEIGLER.—In Mount Joy, Pennsylvania, on Wednesday, December 26th, Dr. J. L. Zeigler, aged eighty-four years.

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Original Communications.

A DISCUSSION OF SOME IMMEDIATE AND SOME REMOTE CONSEQUENCES OF CRANIAL INJURIES, BASED ON THREE CLINICAL HISTORIES WHICH ILLUSTRATE THE EXTRADURAL, SUBCORTICAL, AND INTERMENINGEAL TYPES OF INTRACRANIAL HÆMORRHAGE.

BY HARVEY CUSHING, M. D.,
Baltimore,

Associate Professor of Surgery, the Johns Hopkins University

I plan to dwell in this lecture on some present day aspects of an old surgical subject. My chosen task may seem venturesome, for I shall possibly find little to say in regard to cranial injuries and their consequences which will seem strikingly new or original, particularly to a medical gathering in this city, familiar doubtless at first hand with the publications of Dana, Starr, Bailey, Meyer, McCosh, Phelps, Dennis, and Murray—to mention but a few of those who have dealt fully with many of the neurological or surgical matters which I shall perforce hurry over in this paper. My endeavor will be, nevertheless, to show in what way our present methods of observation have become modified through the influence of recent physiological investigations, and our methods of treatment through certain advances in surgical technique.

I can think of no better way of accomplishing this object than to hang my garment of discussion on the pegs of suggestion which will crop out during the recital of old hospital case reports. Indeed, any one case of cranial traumatism might serve, through proper digression, as a sufficient text for the discussion of the entire subject, for the primary and secondary symptoms produced by the varying grades of cerebral injury shade imperceptibly into one another: Nevertheless I have chosen to relate the histories of three clinical cases, since they present in one way or another the special opportunities of comment for which I am looking. It is destined, by the character of these cases, that I shall at least have to touch upon the various forms of intracranial hæmorrhage and operative measures directed toward their relief; on the physiological phenomena of compression; on the question of choked disc in traumatic cases; on the recent views of cortical localization and methods of eliciting cortical reaction; and on such late con-

sequences of cranial injury as pulsating exophthalmos, epilepsy, and the traumatic neuroses.

The first of the cases which have been selected from the records of more than three hundred instances of intracranial operations performed during the past few years, was utilized heretofore in a paper dealing particularly with the phenomena of compression, but inasmuch as subsequent complications of interest have occurred, I beg to employ it again for this different purpose. Nothing serves as an index of our progress more clearly than a critical review of old clinical histories, and when they demonstrate that we can observe symptoms and direct treatment more understandingly to-day than when the patients were originally seen, nothing is a greater source of encouragement.

CASE I.—History. *Meridional fracture of the skull; rupture of meningeal artery; extradural hæmorrhage; compression without preceding concussion; recovery after a misdirected operation; aphasia; pulsating exophthalmos; ineffectual ligation of internal carotid.*

W. B., a young man, a ship carpenter by trade, while directing (April 17, 1901) some workmen who were engaged in placing a massive piece of timber under a ship's hull, got his head caught between the side of the vessel and the heavy swinging beam. His head was heard by the bystanders to crack like a nut in a nut cracker. Though bleeding from ears, nose, and mouth as a result of the injury, he did not lose consciousness, but got to his feet and talked freely with his companions about the accident. An ambulance was summoned and he was carried to the hospital; on the way thither he began to complain of headache, grew restless, became dull and irresponsible, and before his arrival sank gradually into a stuporous condition.

On his admission about two hours after the injury, the following notes were made: "A well developed young man, unconscious and very restless; does not respond to questions. He reacts to painful stimuli and objects to being handled, so that even while taking his pulse his arm must be held lest he shake off the observer's hand; annoyed by the blood in his nose and ears, at which he is constantly picking. His pulse is 51 to the minute and regular. The systolic blood pressure averages 230 mm. of Hg. (a Riva-Rocci apparatus of the old type, with narrow band was used). Temperature 98.4° by rectum."

"General appearance: He has a bluish, dusky, cyanosed look, particularly apparent about his head, face, and neck. Several distended veins are visibly outlined under the scalp over the median and lateral frontal regions; the small venules of the eyelids are likewise much dilated. There is an apparent slight exophthalmos which is symmetrical. There is a bruise with slight ecchymosis of the scalp—though no open wound—over the left parietal eminence, and likewise, on the opposite side of the head, there is a contusion over the

* The Wesley M. Carpenter Lecture, delivered at the New York Academy of Medicine, October 18, 1906.

temporal region, and the pinna of the ear has been crushed. Bright blood in small amounts, and apparently unmingled with cerebrospinal fluid, comes from both nares and each ear. The pupils are small and unequal; the right contracted to a pin point, the left measuring four mm. There is a tendency at times towards a conjugate deviation of the eyes to the right, but for the most part the globes are rolled about with no parallelism in their axes. There is a slight ptosis of the left eyelid. Pressure over either temporal muscle causes the patient to wince, even more markedly than when his supraorbital nerves are compressed, and when he does so wince, it is apparent that the right side of the face moves less than the left. The deep reflexes at knee and ankle are equal, possibly slightly exaggerated. There is no plantar response."

During the succeeding two hours the patient's condition gradually changed for the worse. He became less restless, his stupor deepened, and he responded less promptly to painful stimuli. The left pupil became more and more dilated. There was some slight twitching at times of the muscles of the right side of the face. The blood pressure became higher, registering at one observation over 300 mm. of Hg., and there were occasional breaks, portentous of the failure of the vasomotor centre. The pulse became irregular and the breathing distinctly Cheyne-Stokes in character, with a rhythm in which deep, snoring respirations, lasting about half a minute, alternated with longer periods of quiet, noiseless breathing; there was no definite period of apnoea. It was noted that the blood pressure was higher during the period of active respiration.

Fearful lest the paralytic stage of compression was setting in, preparations were made for an immediate exploration.

Comment.—It has been well said that fractures of the skull are of clinical importance only in so far as they are associated with injuries to the brain, and an instance of fracture without some evidence first or last of cerebral disturbance must indeed be rare. An accident such as occurred to this patient might, however, have left him entirely free from any complications referable to the brain, for the fracture was the result, not of a blow, but of a lateral squeeze between flat surfaces, which led to a cranial deformation sufficient to overcome the elasticity of the skull and to rupture it, producing the bursting fracture of von Wahl in its purest form, with no associated concussion whatever. As we shall see, the bursting took place, as is usual, in such a way as to connect the poles of impact by a simple meridional fissure passing through the weakest part of the cranial base; as chance would have it, however, important meningeal vessels were injured by this fissure, and extravasation from them in the course of time led to the compression phenomena that have been described.

In every other case of bursting fracture of the skull that I have had an opportunity to study there has resulted a short period at least of primary unconsciousness, due to the jar or shock or concussion (*Erschütterung*) which the brain received at the time of the blow—a frequent sequel, indeed, of blows on the head not severe enough or directed in such a way as to produce a fracture. In this instance, however, owing to the nature of the injury, there was no preliminary stage of concussion, and the first indications of intracranial disturbance did not show themselves until an hour or two after the accident, after which

they progressed rapidly to unconsciousness, first with excitation and then with depression; and finally symptoms of compression advanced to a point which indicated a deficient circulation in the medulla. This progression of symptoms was exactly comparable to that which one sees in spontaneous intracranial hæmorrhages. In apoplexy, for example, an extravasation which at its onset may not have produced loss of consciousness, may increase until in the course of a few hours the successive phenomena of compression pass before one's eyes, even to their last phase, namely, to death from involvement of the medullary centres.

One important observation was neglected in this case, for not until the past year have I learned to appreciate, through close affiliation in my work with an expert ophthalmologist, that the routine examination of the eyegrounds is as valuable in acute traumatic cases as in those of chronic intracranial disease. The neurologist and ophthalmologist unfortunately do not, as a rule, see acute cases of cranial injury, and the surgeon is rarely sufficiently expert with the ophthalmoscope to recognize the slight changes in the eyegrounds which indicate the beginning degrees of choked disc.

As a result of some experimental work with Dr. James Bordley we have learned to appreciate how rapidly a retinal œdema may be made to appear in association with certain forms of increased intracranial tension, particularly when the compression is brought about by the introduction into the cranial chamber of fluid under tension: how rapidly also the œdema may disappear when relief from tension has been afforded. In operative cases the same thing is apparent, even when the compression is a local one. Thus, in operations on the Gasserian ganglion in which some elevation with compression of the temporal lobe is necessitated, a transient œdema of the disc and retina is not infrequently found.

The delicacy of the eyegrounds in evidencing states of acute intracranial tension cannot be too greatly emphasized, and in our more recent series of traumatic cases it has proved of the utmost aid to us, not only as an indication of circulatory disturbance, but also as an aid in determining the side upon which the primary focal compression is being exercised. This applies, of course, only to cases of local compression and not to those in which the tension in all parts of the intracranial space is raised in equal degree by a generalized form of compression. It does not suffice that one is able to recognize a choked disc when it is full blown, but it is necessary to be able to appreciate slight grades of venous stasis and an early œdema, the height of which cannot be measured in diopters and which is unaccompanied by extravasations. Cases of intracranial injury with increased tension seem to show a degree of choked disc proportionate in a measure to the severity and duration of the intracranial symptoms; and, furthermore, it is our impression that, when a slow recovery without a decompressive operation has occurred, in patients who presumably have had a choked disc lasting over a period of some weeks after the injury, per-

manent changes are left in the nerve which are recognizable by characteristic disturbances of the field for form and for color. We have come to believe implicitly in the mechanical as opposed to the toxic views in regard to the formation of choked disc, whether it be associated with intracranial hæmorrhage or tumor or the œdema of nephritis; but this is too great a digression to enter upon in this paper.

As noted in the examination of this patient, the

panies cephalic venous obstruction from any source, a constriction about the neck, for example. It is an intracranial stasis which leads primarily to the cyanosed appearance of the face so commonly seen in cases of serious cranial injury even before there is any respiratory difficulty.

From what knowledge we had at this time of the phenomena of compression, it was apparent that the patient was approaching its paralytic stage; in other words, that the vital centres in



FIG. 1, CASE I.—Sketch showing situation of misplaced osteoplastic resection; enlargement of the opening necessitated to expose low lying extradural clot.

external vascular conditions serve in some measure as an indication of what the ophthalmoscopic findings are likely to be. For the condition of intracranial congestion gives evidence of itself as a stasis in those extracranial vessels which normally empty their blood into the cranial sinuses, and this is particularly apparent as a dilatation of the vessels of the scalp, forehead, and eyelids, and as a slight protrusion of the eyes themselves, the stasis form of exophthalmos which accom-

panies cephalic venous obstruction from any source, a constriction about the neck, for example. It is an intracranial stasis which leads primarily to the cyanosed appearance of the face so commonly seen in cases of serious cranial injury even before there is any respiratory difficulty. From what knowledge we had at this time of the phenomena of compression, it was apparent that the patient was approaching its paralytic stage; in other words, that the vital centres in

longer or shorter time by a compensatory rise in general arterial tension. The brain, itself, is practically incompressible, and anything which encroaches on the space which it normally fills does so merely by crowding out the small amount of cerebrospinal fluid which the skull contains and by emptying cerebral bloodvessels. A slight degree of compression causes first a stasis of the venous blood, for the low tension in these vessels makes them, first of all, feel the effect of external pressure; a more pronounced degree of compression, one which equals the tension in the capillaries or smaller arterioles, causes a capillary or arterial anæmia, and if this anæmia is so far reaching as to compromise the circulation in the medulla, death will occur from respiratory failure unless a conservative rise in blood pressure serve to overcome the anæmia. It has been shown experimentally that this reaction hinges on the activity of the vasomotor centre, which, through constriction of the splanchnic field, increases blood pressure to the point at which arterial blood once more finds its way in sufficient amounts through the medullary vessels. Hence we find that in cases of acute compression the general arterial tension is a fair index of the degree of intracranial tension in the region of the medulla and so long as the systemic arterial tension is capable of holding at its increased level without wavering, and so long as the respiratory rhythm remains unaffected, just so long, and so long only, may we safely delay intervention.

For convenience of clinical observation Kocher¹ has divided the phenomena of compression into four stages, basing them on the symptoms which are produced by varying degrees of implication of the intracranial, and particularly of the bulbar circulation; it is very helpful in clinical work to bear them in mind. In the first stage symptoms are absent, owing to perfect circulatory compensation; in the second, objective signs of compression begin to appear; in the third, they reach their height; and in the fourth, they fail and death supervenes from bulbar anæmia. When the third stage—his *Höchstadium des manifesten Hirndruckes*—has been reached, when unconsciousness has deepened, and the patient is no longer irritable, when the slow vagus pulse begins to be replaced by one with occasional rapid periods, when the blood pressure becomes irregular and shows signs of failure by periodically falling from the height to which it has been raised in order to furnish the medulla with arterial blood, when the respiration becomes rhythmic, owing to these irregularities in the blood pressure level,² then it must be recognized that death is near at hand, owing to exhaustion primarily of the vasomotor centre.

Appreciating these things and realizing in this case that relief by decompression was urgently demanded—for, if postponed too long, the centres,

even though relieved of pressure, fail to regain their normal activity—there was some difficulty in determining which side of the head it was advisable to enter. The patient certainly was suffering from a basal fracture, as bleeding from his ears and nose indicated, and it was presumed that there was an accompanying diffuse basal hæmorrhage in the intermeningeal spaces spreading toward the bulb. At that time we had not learned that such a condition can be often recognized by a lumbar puncture, a procedure which to-day is carried out in almost all cases of suspected basal fracture; for, owing to the close attachment of the dura at the base of the skull, it is hardly possible for a basal fracture of any extent to occur without laceration of this membrane, so that blood from the fissured bone has direct access to the subdural space, and the presence of bloody subarachnoid fluid in the lumbar meninges furnishes circumstantial evidence of such a lesion, of a badly contused brain, or of both together. As we shall see, however, such a finding would not have helped us greatly in this particular case. And, furthermore, at the time this patient was under observation no definite plan of decompression for these cases of general diffuse basal hæmorrhage had been evolved.

In the endeavor to determine upon which side it is advisable to operate in these cases, we look for asymmetrical symptoms, and though in this case they were present, they proved to be puzzling rather than helpful. The weakness of the musculature on the right half of the face was naturally thought, at first glance, to be due to the extension of the line of fracture into the petrous portion of the temporal bone, leading to a lesion of the facial nerve—by far the commonest form of cerebral nerve palsy in fractures of the base. On the other hand, pressure by a clot on the opposite hemisphere might have produced the same symptoms. Furthermore, the relative dilatation of the left pupil might have been due to a central cause and thus have given lead to the site of chief compression disturbance, but the accompanying ptosis made it seem probable that here, too, we had to deal with symptoms of a peripheral palsy of the oculomotor nerve, rather than to a central lesion.

In the one case—namely, with a facial palsy of peripheral origin and compression symptoms due to a generalized basal hæmorrhage—there could have been no great choice between the two sides of the skull; on the other hand, it was possible that the symptoms were of central origin, and that a clot compressing the motor centres for the face might be found over the left hemisphere, and for this reason alone it was determined to open the left side of the cranium. We were further strengthened in this determination by the slight tendency of the eyes to deviate conjointly toward the right; also by the occasional irritative twitchings of the right side of the face, a symptom which is more likely to occur from a central than from a peripheral nerve injury. Further assurance that the decision was a wise one was given by the fact that when the patient was being anæsthetized—and this was found necessary, owing to his subconscious struggles after an exploration had been attempted without anæsthesia—he

¹Hocher, H. Chirurgische Eingriffe. *Archiv für Klinische Pathologie und* *Chirurgie*, 1901, 2, 1901.
²See also, A. J. Kocher, *Chirurgische Eingriffe*, 1901, 2, 1901.
³See also, A. J. Kocher, *Chirurgische Eingriffe*, 1901, 2, 1901.
⁴See also, A. J. Kocher, *Chirurgische Eingriffe*, 1901, 2, 1901.
⁵See also, A. J. Kocher, *Chirurgische Eingriffe*, 1901, 2, 1901.
⁶See also, A. J. Kocher, *Chirurgische Eingriffe*, 1901, 2, 1901.
⁷See also, A. J. Kocher, *Chirurgische Eingriffe*, 1901, 2, 1901.
⁸See also, A. J. Kocher, *Chirurgische Eingriffe*, 1901, 2, 1901.
⁹See also, A. J. Kocher, *Chirurgische Eingriffe*, 1901, 2, 1901.
¹⁰See also, A. J. Kocher, *Chirurgische Eingriffe*, 1901, 2, 1901.

moved his right arm with much less strength than the left.

CASE I (Continued). Operation. Exploratory craniotomy by Wagner bone flap; extradural hemorrhage, removal of clot after enlargement of cranial opening necessitated by misplaced exploration, iodoform gauze pack.

The venous stasis over the cranium had by this time become so marked that it seemed inadvisable to operate without a tourniquet. Furthermore, when the head had been shaved percussion over the bruised left parietal region elicited a peculiar "hollow cask" note, such as occurs in association with extensive meridional fractures or when the cranial sutures in young individuals have become separated through the intracranial tension of a new growth. The usual cranial band was applied, and a moderately large osteoplastic flap (Fig. 1) was turned down so as to expose in the centre of the field the lower part of the precentral gyrus on the left side.

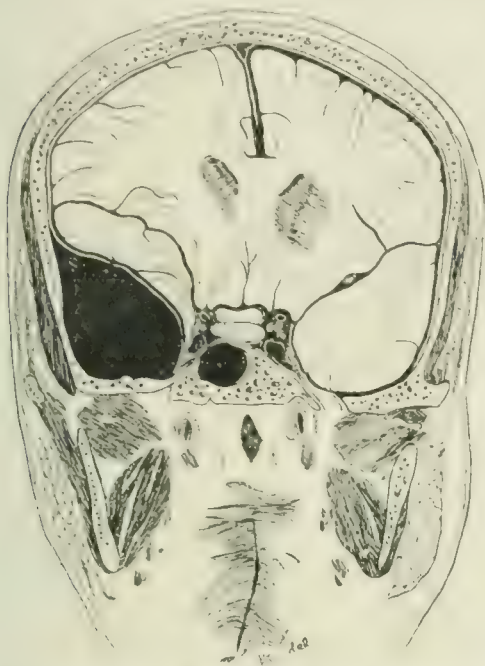


FIG. 2. Coronal section, viewed from behind, passing through the pituitary fossa. To show the situation of the extradural clot in Case I; also the relation of the carotid artery and cavernous sinus, anastomosed by the trauma of the fracture, and of the oculomotor nerves injured at the same time.

The base of the flap was made as low as possible, it being limited by the tourniquet, which encircled the head from the suboccipital to the supraorbital regions. On elevating the flap it was found that from the point of bruising mentioned before there was a fissure in the bone which ran downward from the parietal eminence toward the middle fossa. Several small extradural clots were seen and wiped away, but the large clot subsequently disclosed remained completely hidden. The dura, though tense, was pulsating. It was opened and a small amount of slightly blood stained cerebrospinal fluid was evacuated. The brain itself, though somewhat tense and bluish in color from an evident venous stasis, presented no abnormalities. It did not bulge greatly through the opening, and the dura was easily resutured in position.

On reexamining the extradural territory at the base of the flap, where some slight oozing had taken place during the preceding steps, it was found that the bone flap had been turned down in such a way as to miss bringing into view the upper margin of a large clot which was found to occupy practically the entire region of the left temporal lobe (Fig. 2). In order to

evacuate this clot and to expose the meningeal vessel from which the hemorrhage had taken place, it was necessary to remove the tourniquet. When this was done, active bleeding started up from both edges of the line of incision through the scalp, and many clamps were necessary to control it. The anterior limb of the curved incision was then carried down across the region of the temporal fossa and the thin plate of the squamous wing of the temporal bone was rongeuired away, as shown in Fig. 1. This brought into view the large clot, which was spooned away, and no sooner had it been loosened and removed than profuse bleeding started up from the base of the middle fossa. On sponging out the floor of the fossa, it was seen that the dura had been stripped back so as to expose the mandibular division of the fifth nerve, and the crack in the squamous portion of the temporal bone passed through the foramen spinosum, at which point, doubtless from an injury to the meningeal at its entry into the skull, hemorrhage was taking place. The point was inaccessible for ligation and the bleeding was controlled by tightly packing some strips of iodoform gauze down against it. They were led out of the wound at its anterior angle.

The blood pressure chart kept during the operation showed in a most graphic manner the effect upon the arterial tension produced by the relief from pressure against the brain. The systemic blood pressure fell from its level at 320 mm. of Hg. to a level of 160 or 180, and at the same time the vagus pulse and the respiratory disturbances disappeared (Fig. 3).

Comment. There were many mistakes in judgment in the conduct of this operation. One of them was due to the operator's failure to recognize the importance of the fact that the branches of the meningeal artery, which were exposed on first elevating the bone flap, were not pulsating and were empty of blood. Though this was noticed, it was supposed to be due to the pressure upon the dura and the artery by the base of the reflected bone flap. It was in reality due to an injury which the vessel had sustained at its point of entry into the skull. A still more serious error in judgment was the employment of the Wagner osteoplastic flap for exploration in a case of this kind; an error which I believe to be one not uncommonly made. We were, in the first place, not assured of the fact that a definite cortical lesion was to be found on the left side, and in case the exploration had revealed nothing, and it consequently had been necessary to do a bilateral operation to eliminate the presence of a focal lesion on the right side, a double osteoplastic operation would have been too serious a procedure. Furthermore, had we found a widely spread and generalized basal hemorrhage, necessitating decompression and subdural drainage, neither of these objects could have been satisfactorily accomplished through an opening made by the osteoplastic method.

The most important and most helpful operation for me in my work upon intracranial conditions whether for the relief of tension in cases of tumor or for simple exploratory purposes like the one given, is the procedure which has been termed an intermusculotemporal operation. This operation possesses many advantages. It is carried out in a region which is protected by muscles that can be closed over the opening in the skull. It consequently is not necessary to preserve and to replace the bone, for the defect is so well covered

that a loss of bone in this situation neither leaves a subsequent depression when normal intracranial tension has been restored, nor allows of a cerebral protrusion while it remains abnormally high. It furthermore is carried out over a part of the cranium where, owing to their thinness, the bones are easily entered and rongeured away. Further advantages lie in the fact that such an opening is made directly over the branching meningeal arteries so that an injury to these vessels leading to an extradural hæmorrhage is immediately encountered. In case no such extradural clot is found, the dura itself may be opened and the con-

derstanding of the best way to approach these cases. One of these failures, which shows the necessity at times of a bilateral operation, is illustrated by these photographs of the calvarium and skull from a fatal case of a year or two ago (Figs. 5 and 6.)

This patient, after a fall, was brought to the hospital in an advanced stage of compression, with threatened medullary paralysis. It was impossible to learn from his history in what way the symptoms had begun and how they had progressed. He had been unconscious from the moment of receiving the injury. There was evidently a fracture of the base as told by lumbar puncture, and the fact that there might be an extradural hæmorrhage at the same time was overlooked. An intermusculotemporal operation was carried out on one side alone. The dura was found tense and plumcolored. It was opened, some subdural clots were removed, and a considerable laceration of the temporal lobe was disclosed. A "protective" wick drain was left in the wound. Though the patient's conditions improved somewhat for a few hours, he ultimately succumbed. At the autopsy a large extradural clot was found associated with an injury of the meningeal artery on the opposite side of the head; pressure from this clot, which

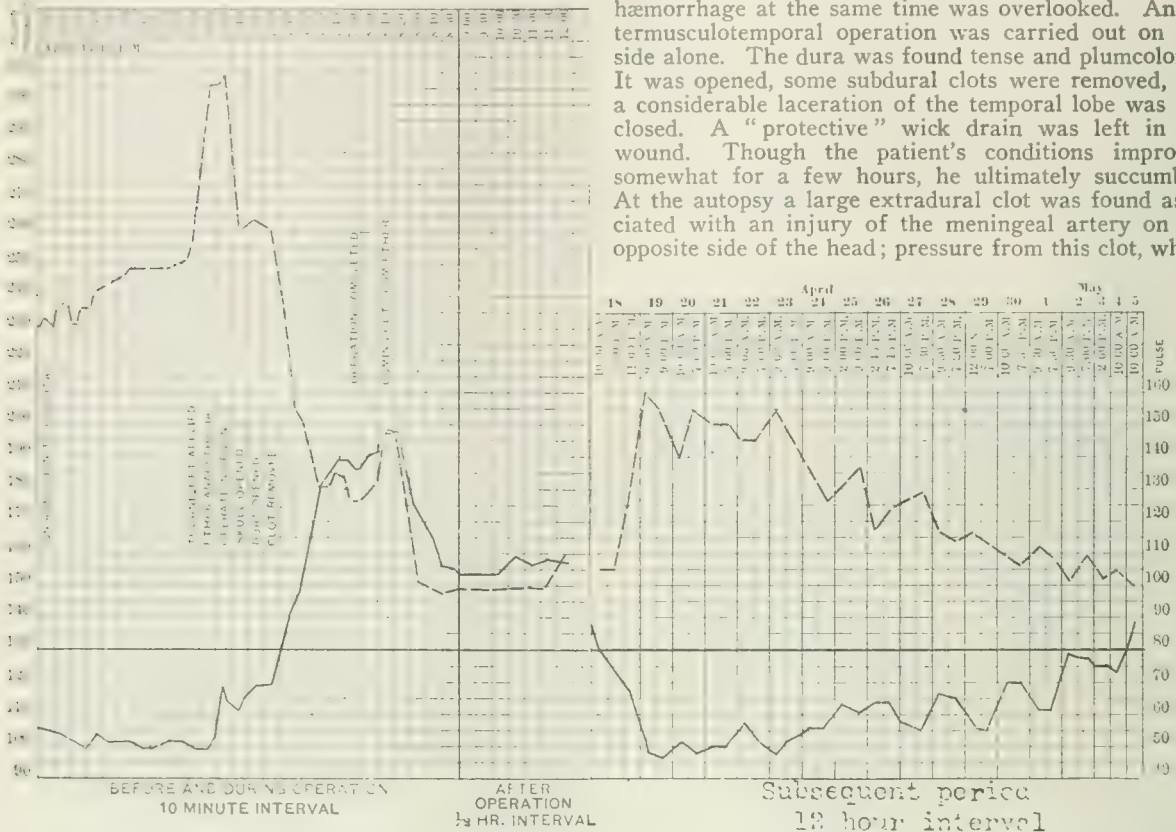


FIG. 3.—Chart of Case I, showing blood pressure and pulse rate; observation taken before and during operation, with a ten-minute interval; immediately after operation, a half-hour interval; subsequent two weeks, twice daily. Broken line represents blood pressure in mm. of Hg. Solid line represents pulse rate. Note the reaction due to secondary increase of intracranial tension on April 19th *cf seq.*

dition of the hemisphere determined. Indeed, it is often unnecessary—and in this case it was unnecessary—to open the dura for this purpose, inasmuch as a subdural hæmorrhage can usually be appreciated by the bluish, plumcolored appearance through the semitransparent membrane. Lastly, the cranial openings are so low that in case it is desirable to help out the decompression by drainage, should a diffuse and persistent hæmorrhage from a basal fracture be met with, protective drains may be easily introduced through the split muscle on each side, leading to the subdural space under each temporal lobe.

Only by the experience of many failures, and all of those who have operated extensively upon cases of intracranial hæmorrhage resulting from basal fractures can appreciate how forlorn have been our best results—only by failures, I say, have we finally come to something like a definite un-

certainly would have been found and evacuated had a double intermusculotemporal operation been carried out, was probably the cause of death.

In this patient, as in the one I have commented upon in detail, there was a meridional fracture, the linear fissures running from the vertex, where the impact had been received, across the parietals and squamous portions of the temporal bones on each side, and thence into the middle fossa, ending up in the sella turcica (Fig. 7).

The bleeding from the incision, which followed the removal of the tourniquet during this operation, is an evidence of what a tourniquet does in the way of hæmostasis in osteoplastic work on the cranial vault, and although it was an error of judgment, as has been said, to turn down a bone flap in this case, and although a tourniquet is unnecessary in the intermusculotemporal operation, it may not be an inopportune moment to speak of

the use of the cranial tourniquet in general. It is my personal view that a tourniquet in major cranial operations is far more essential than one for a

pression with an almost immediate upsetting of respiratory activity, which was not recovered from until the blood pressure was once more raised by stimulants to its former height.

For some years I made use of an inflatable form of tourniquet, which I have had to abandon, owing to the difficulty of obtaining from the manufacturers tubes sufficiently reliable to endure repeated boiling. At present we employ a constricting band which is even superior to these pneumatic tourniquets. It is a simple device, made of a rubber tube in which is inserted a sort of buckle, so that it can be made into a ring of any size which encircles the head from glabella to below the occipital protuberance, a median longitudinal tape of proper length for each case being used to prevent the band from rolling over the eyes. It is infinitely more accurate and serviceable than the old method of applying a band to the head in the same way that a tourniquet is ordinarily applied to an extremity. It can be applied, loosened, or removed, without any slip in operative technique.

Another need, for those who propose to take all possible precautions against accident during operations in cranial cases which are in the high

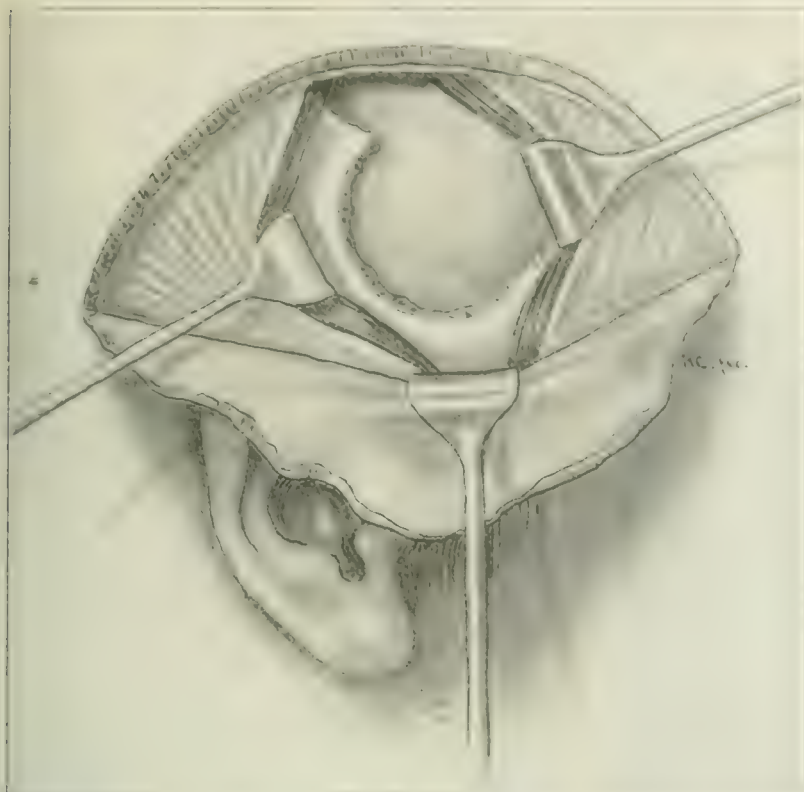


FIG. 4.—Sketch of the internal phototemporal field of operation: showing exposure with bone defect partly made.

major amputation, for on the extremities a bloodless amputation may be done without shock by the use of slow dissection methods, whereas on the head it is almost impossible, without considerable loss of time and of blood, to secure all the bleeding points in the scalp. This is especially the case when arterial tension is greatly raised and when passive congestion is pronounced, as in the case of the patient under discussion. It is my common practice to close the skin incision after making an osteoplastic flap, even after a hemicraniotomy, before the tourniquet is removed, and by a special method of closure no ligatures whatsoever are needed, and only in exceptional cases is it necessary, during the operation, to place clamps on a few bleeding points—usually veins with intracranial anastomoses, which may bleed from the concave side of the incision, despite the tourniquet. It greatly shortens the operation and saves loss of blood, particularly in these traumatic cases, at a time when such loss, with a consequent fall of blood pressure, may be disastrous. It has been a common belief that blood letting was a proper therapeutical measure in conditions of increased intracranial tension, like apoplexy, for example, a view based on the impression that it was desirable to lower the high tension pulse in order to lessen the intracranial bleeding. If, however, the rise in pressure is a conservative phenomenon, as it seems to be, a lowering of pressure is an undesirable, and even a dangerous thing. I have seen cases of apoplexy bled in the high stage of com-



FIG. 5.—Internal view of skull after removal with tentorium intact. The patient was in the high stage of apoplexy. The tentorium was not removed, and the patient died. While the patient was profoundly unconscious the right side was removed, the opposite side alone, which proved to be the wrong one.

stage of compression, is an artificial respiration apparatus which, indeed, should be an adjunct to every operating room. A fall of blood pressure, due to some loss of blood before decompression

has been effected, together with the slight burden of the anaesthetic, may serve in these borderline cases to throw the respiratory centres out of action, and the usual arm to arm method of artificial respiration is not only unsatisfactory when it must



FIG. 6.—From same patient as Fig. 5. Photograph of brain which had been hardened *in situ* by carotid injections of formalin. To show situation of depression made by extradural clot resulting from high lesion of meningeal artery.

be continued for a considerable time, but it also seriously interferes with a further continuance of the operation. On another occasion I have recorded the notes of a patient in whom artificial respiration was continued for twenty-four hours, spontaneous breathing having ceased during a cranial exploration for a cerebral abscess. The patient finally succumbed, without regaining any spontaneous respiratory activity. During the past year the same thing occurred in a patient in whom a temporal decompressive operation was being done to relieve the pressure symptoms of an inaccessible brain tumor. Soon after the administration of the anæsthetic the patient ceased breathing, but normal respiration was resumed after a few moments of artificial respiration. Just as the operation was begun he ceased breathing again and this time the usual artificial measures of reexciting the centre failed, although persistent efforts were continued for over half an hour. Finally a tracheotomy was done, a trachial cannula inserted and tied in position, and artificial respiration with bellows was kept up until the bone defect was made and the dura opened. No sooner was the tense membrane divided than spontaneous efforts at respiration began. The operation was completed; the trachial wound was closed; the patient's recovery was uneventful, and he still lives.

CASE I (Continued).—Postoperative Notes. *Complications.* Analyses simulating those of original hemorrhage; aphasia; rapid subsidence of all intracranial symptoms on removal of pack.

On recovering from his anæsthetic the patient became very noisy and restless, making such violent efforts to get out of bed that he had to be restrained during the

next twenty-four hours. The symptoms of local compression, shown as a palsy of the right side of his face and now due to the pack, were even more marked than before the operation, and there were frequent irritative twitchings of the right arm and shoulder; the ptosis of the left eyelid also persisted. On the other hand, all of the major symptoms of general compression, sufficiently far reaching to seriously affect the medullary centres, had disappeared, although during the following ten days there occurred, what has been heretofore commented upon, a sort of recrudescence or relapse of compression symptoms, a phenomenon which occurs in almost all cases of severe cranial traumatism. (Fig. 3.)

Not until the pack was removed at the end of the second day was there any decided improvement in the patient's mental condition. Soon after its withdrawal, however, he fell into a natural sleep, and on awakening in the course of a few hours, he, for the first time, recognized his father who was present, and after vain efforts to communicate, with the result of simply rerepeating inarticulate and unintelligible syllables, he gave up the attempt and contented himself by indicating his wants by gestures. Not only was his motor speech centre affected, but his auditory centres in the temporal lobe were for the time being likewise thrown out of function by the long compression they had undergone. He was incapable of understanding spoken language; for example, would not protrude his tongue on request, but would immediately imitate the act when it was shown to him. When he did so, it protruded far to the right and the jaw likewise deflected to the right when the mouth was opened. Thus, the primary motor centres of the lower

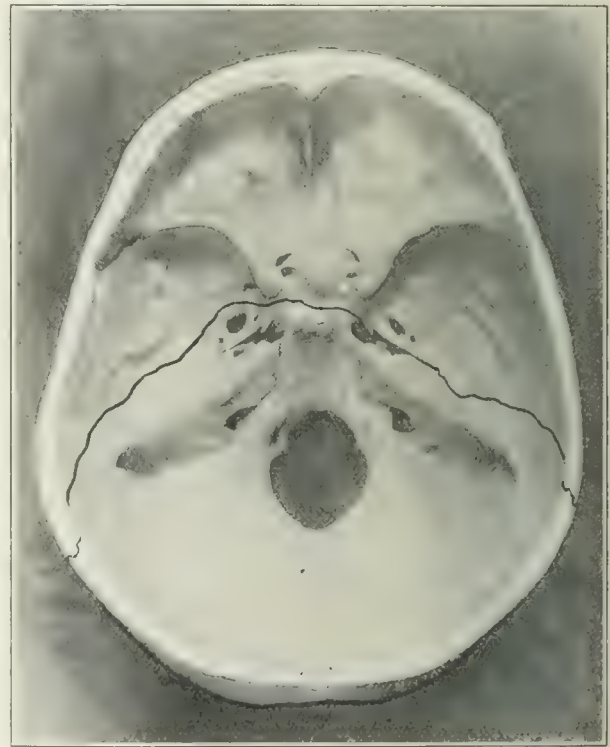


FIG. 7.—Photograph of base of skull, showing line of bursting fracture, committal for Case I; demonstrated at autopsy of patient mentioned in text.

end of the precentral convolution, presiding over movements in the right side of the face, tongue, and jaw, were affected as well as the adjoining speech centres.

In association with the patient's word deafness (auditory aphasia) and his motor (vocal) aphasia, were other evidences of disturbance with the complex speech mechanism, though none which could not be attributed

to implication of the "fundamental speech centres." He could apparently understand written language, knew perfectly well the uses of objects, tried frequently to communicate by writing, and though the letters he made were perfectly formed and rapidly executed, they were combined meaninglessly and showed a tendency to copy the written questions. For example, question: Can you read? Answer, written without hesitation: Carminilmey yeour rear ricon. During the process of recovery his ability to make figures came back first of all, and he could do quite complex sums on paper before he was able to combine letters into words. The power to express himself in writing, however, returned rapidly, though I do not believe that he was able spontaneously to write words until he had again learned to recognize the sound of them: For example, when shown a bunch of keys, although he recognized the objects and their use, he could not name them, either in speech or writing, but said that he had twelve of them himself, and went through the motion of unlocking a door. The moment "key" was mentioned he wrote it down quickly, even adding the plural.

It is apparent, without going further into the details of the voluminous notes which were made during the study of his neurological symptoms, that the local pressure efforts of the clot, itself, and of the gauze pack which took its place (but which did not lead to the same general increase of intracranial tension, owing to the decompressive result of the cranial opening) were felt over the temporal lobe, involving at the same time, above the fissure of Sylvius, the foot of the inferior frontal (Broca's) convolution and the precentral convolution high enough to paralyze the centres for movement of the tongue (hypoglossus), jaw (trigeminus), and expressional musculature (facialis), and to cause irritative movements from stimulation of centres as high as those presiding over shoulder and arm movements. Without entering further into the details of these symptoms, it must suffice to say that these focal disturbances of cortical origin rapidly disappeared.

The cerebral nerve palsies of peripheral origin, however, persisted, a residual of symptoms which further indicated the direction taken by the lines of fracture, and which presaged the final complication shown by this patient. For there was a total ophthalmoplegia externa of the left eye and paralysis of the abducens on the right. The absence at the same time of subconjunctival ecchymoses in either eye showed presumably that there had been no intraorbital hæmorrhage from involvement of the orbital plates of the frontal bone in the fracture.

By a week after the operation his word deafness had largely gone and he began to utter intelligible words and to put them together, his memory for substantives being the last to return. The paralysis of the motor oculi of the left eye had by this time largely disappeared, leaving him with a double convergent squint. It was first noticed (April 30th) that he was unable to appreciate sensations of taste, a fact to which the patient himself directed our attention. He could not discriminate between any of the cardinal taste qualities: A strong solution of quinine made his "tongue feel funny," but conveyed no gustatory impression.

His improvement in all respects, however, was rapid, and he left the hospital (May 11th) about four weeks after the injury, still having some slight diplopia and still with a trace of motor aphasia, but otherwise well. It is noteworthy that he retained a vivid picture of the incidents following his injury: Standing with the blood running from his nose and ears, being offered a drink of whiskey and water, and being helped into the ambulance.

Comment.—The chief suggestion for comment arising from these notes upon the patient's convalescence concern the questions of the temporary

slight return of compression phenomena, which on the plotted chart remind one of the temperature record of a typhoid case showing remission or relapse of fever. This phenomenon is one which I have considered due to an œdema from disturbances in osmotic pressure such as Cannon has described; and the reaction shown in a secondary slowing of pulse and rise in blood pressure (Fig. 3) has been very commonly observed in our long series of traumatic injuries of the head, and the explanation therefore has been given in an earlier paper.³ This cerebral œdema may of itself in an unopened skull lead at times to very serious consequences, even death.

Beyond this, the points of chief interest in the



FIG. 8. Pulsating exophthalmos (arteriovenous aneurysm), a complication of fracture of the base, showing distended (and pulsating) vessels near inner canthus of eye and in supraorbital region; also lack of parallelism in the globes (patient looking to his right). (Case I.)

case are referable to cortical localization and to the nature of the peripheral nerve lesion. The voluminous notes made upon the study of this patient's aphasia are too extensive to be utilized here, although the temptation to digress from my main subject for this purpose is a great one. Those who are interested in the question of aphasia will note that from the first the patient understood and executed pantomime perfectly; that, although the fundamental speech centres—the auditory and vocal centres (Wyllie's "primary couple")—were affected, the visual and graphic speech centres having escaped, he was able to read characters, though unable to understand them, and was able and eager to write, but unable to write anything which was intelligible. Furthermore, on his recovery he remembered all of the incidents connected with these efforts and appreciated his incapacity to express his thoughts, which, he says, were perfectly lucid.

CASE I.—*Sequel. Return after three years with pulsating exophthalmos from arteriovenous aneurysm;*

The Blood Pressure Reaction of Acute Cerebral Compresses, illustrated by Cases of Intracranial Hemorrhage. LANCET, Journal of the Medical Sciences, June, 1905.

freedom from usual posttraumatic symptoms ("neuroses") of unoperated cases; ligation of internal carotid without great improvement of exophthalmos.

Soon after the patient's departure from the hospital (May, 1901) he returned to work, but it was not many weeks before he began to be troubled by a buzzing sound in his head, and, according to his story, there was a protrusion of the left eye similar to that which now affects the right eye, but which finally disappeared. A few weeks ago (April, 1905) he received a slight blow on the back of the head, and since that time the subjective noises have become much worse, and the protrusion of the right eye, which had taken the place of the similar condition that had disappeared from the left, has become more and more marked, and finally compelled him to stop work. Any muscular exertion or sudden jar greatly increased the noise in his head. There was no pain in the eye and his vision was quite normal. While



FIG. 9.—Pulsating exophthalmos (arteriovenous aneurysm), a complication of fracture of the base, showing dislocation of the pulsating globe on slight pressure against the upper lid. (Case I.)

resting or recumbent the disturbance from the protrusion and from the intracranial noise was much less.

An examination showed an extreme degree of exophthalmos of the right eye (Fig. 8.) The eyeball was dislocated downward and outward, and there was some diplopia both in vertical and horizontal planes; although the patient had in large measure learned to disregard this. His vision was apparently perfectly normal, and an ophthalmoscopic examination showed no change in the fundus beyond a great dilatation particularly of the arteries, which seemed unusually large in proportion to the veins, and to our great surprise it was found that there was no pulsation whatever of either arteries or veins. (Possibly had we compressed the eyeball at the time of the ophthalmoscopic examination, pulsation might have been brought out.) The conjunctiva was much injected, owing to a network of large dilated vessels which were especially well seen when the lids were retracted. The eyeball was almost entirely out of the socket and the finger could be easily inserted behind it at the outer margin (Fig. 9.) It would have been an easy matter to dislocate the globe outside of the lids, were undue pressure exerted.

The subcutaneous veins at both the outer and inner canthus were enormously distended, and the supra-

orbital vein, which was as large as the index finger, seemed to have caused a pressure erosion of the underlying bone, for these was a deep gutter where it underlay this large vessel. The eyeball was visibly pulsating, as were likewise these enormous vessels. The left eye seemed normal in all respects. The pupils were equal and reacted to light. The patient had a very dusky appearance with a suggestion of cyanosis about his face. He was greatly troubled by occasional epistaxis and by catarrh.

On auscultation of the cranium there was heard a loud, continuous underlying hum, which was surmounted by a harsh, systolic bruit of extraordinary intensity. This was heard over the entire head, being distinctly audible at the chin as well as over the occipital region. It was particularly intense when the eyeball, covered only by the lid, was itself auscultated, and palpation of the eyeball thus covered, transmitted to the fingers a definite thrill. The eyeball could easily be pushed back into the socket and when held in this position pulsated forcibly with each cardiac systole. Pressure, sufficient to obliterate the pulse, exerted over the carotid tubercle in the neck lead to a dropping back of the eyeball and to an immediate cessation of the patient's subjective noise, and during the compression the bruit could no longer be heard with the stethoscope. The patient was greatly distressed by this continuous aneurysmal noise, as it made him quite deaf to external sounds. He said it was like having a sawmill in operation in his head.

May 15th, 1905.—Operation. *Cocaine anesthesia; ligation of right internal carotid artery.* Under local anesthesia the vessel was isolated and two silk ligatures were placed about it near its point of origin. Dr. Bordley meanwhile kept watch of the fundus of the eye and no change occurred until the moment the carotid was occluded, when the retinal arteries immediately became invisible. At the same moment the pupil dilated widely and the aneurysmal bruit was lost, both to the patient himself and to an observer with a stethoscope. Within a few moments after the ligatures were tied and the vessel divided between them, the transparent structures of the eye became so cloudy that the retina could no longer be seen and the patient said that his vision has entirely disappeared from the eye. This condition lasted for about twenty minutes while the operation was completed. After this period, the fogging of the vitreous began to disappear, the patient's power of vision began to return, a view of the retina was again possible, and the arteries soon came into view as small, visibly pulsating, fine threads. As soon as the pulsation began to reappear in the retinal vessels, the patient's subjective noise once more returned and increased *pari passu* with the improvement in the retinal circulation.

Nothing further was accomplished by this carotid ligation than some change in the character of the intracranial bruit. The patient said that the noise was now "like a bell just done ringing," that the note was of a higher pitch than before, but that the old roar had disappeared. There was apparently some subsidence of the exophthalmos, and a considerable diminution in the size of the large subcutaneous vessels. The diplopia, too, was less than before, so that the patient could define objects more clearly than he had previously been able to do. To the stethoscope the bruit was less intense than before the ligation, but the gain in the condition did not seem to be particularly marked. He has, however, been able to return to work, and considers himself somewhat improved.

Comment.—The appearance of this double pulsating exophthalmos adds further evidence to the direction taken by the lines of radiation of the meridional fracture; for they must have passed through the middle fossa on each side and have crossed the grooves occupied by the cavernous sinuses and internal carotid arteries, ending up,

in all probability, in the pituitary fossa.⁴ Also, as described in the earlier notes upon the patient's condition, the lines of fracture in crossing the inner edge of the middle fossa had been the cause of injuring the oculomotor nerves. This sequel of fracture of the skull with injury of cavernous sinus and internal carotid artery leading, from their close juxtaposition, to an aneurysm by anastomosis, seems not to be such an uncommon one as has been supposed; for during the past few years several instances of the sort have been reported in medical literature.⁵ It is possible that better treatment of cases with fracture of the base extensive enough to lead to such an injury, means more recoveries and greater likelihood of seeing the slow forming exophthalmos. However this may be, it is remarkable that Bramann, who studiously went over the literature of arteriovenous aneurysms in 1885, recorded no cases of this sort. Owing to its inaccessible position and to the free collateral circulation, no form of arteriovenous aneurysm presents difficulties so insurmountable to surgical measures. In all probability, had the ligation of the internal carotid succeeded in completely relieving the process, and had the circulation not returned to the retina as Dr. Bordley saw it return, the patient would have lost vision in his right eye, and we might possibly, too, have been confronted with evidences of frontal lobe disturbance as well. In an elaborate monograph, Dr. August Segrist⁶ has made a careful study of the dangers to the eye which result from ligation of the carotid artery, dangers which are particularly apt to occur in elderly people, or where there is any degree of arteriosclerosis. There seems to be an especial risk in carrying out this operation under chloroform anæsthesia, or other forms of general narcosis. In almost all of Segrist's cases the clinical notes tell of a temporary loss or dimming of vision, although in none of them, so far as I can learn, was an ophthalmoscopic examination made during the time of ligation.

There is one point which I wish to make before leaving the discussion of this case and which will be emphasized by the histories to follow, and that is that this patient, in spite of his critical injury and its complications, has remained free from all of these troublesome symptoms, which, after Oppenheim, we are inclined to group under the term "posttraumatic neuroses," and which are so common a sequel of cranial injuries associated with hæmorrhage, provided the skull has not been opened and the greater part of the clot removed. It has been our experience, in accord with Spiller⁷ to find that the patients successfully operated upon remain comparatively free from these troublesome and often long enduring symptoms; whereas those who recover without operation frequently suffer from them.

(To be continued.)

⁴ From a recent study of fifty cases (post mortem) of basal fractures, Walton has pointed out, in agreement with Rawling, that the pituitary fossa, being the weakest point in the base, is apt to be traversed by a linear fracture from bursting. *Annals of Surgery*, 1904.

⁵ Ranschoff (*Surgery, Gynecology, and Obstetrics*, iii, p. 193, 1906) has collected from the literature of the past seven years twenty-one cases in which the common carotid was tied; fourteen cases were reported as cured, and but one died.

⁶ *Die Gefahren der Ligation der grossen Halsschlagadern für das menschliche Auge*, Leipzig, 1900.

⁷ Traumatic Lesions of the Brain in Their Relation to Operation. *International Clinics*, iv, 12th series, p. 102, 1903.

A NEUROLOGICAL CRITIQUE OF RECENT SURGICAL TREATMENT OF CEREBRAL BIRTH PALSIES.*

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Infantile cerebral palsy has always been a subject of great interest clinically and pathologically, while its treatment has remained more or less hopeless and always unsatisfactory. The brain injury itself, from the time of its inception and from whatever source, has been looked upon as beyond surgical aid, and the resulting clinical manifestations are certainly medically incurable. Some patients recover, it is true, but few escape without some defect lasting throughout life. Hemiplegia or diplegia, epilepsy, athetosis, mental deficiency and retarded development are the more common clinical manifestations which result from the initial brain lesion, while blindness, hemianopsia, and deafness are occasional sequelæ, and contractures and deformities occur in the later stages of the disease. The clinical types depend, of course, on the location, degree, and extent of brain involvement. The permanency of the condition depends upon the degree of injury of the brain parenchyma, *i. e.*, especially of the cell elements, rather than upon the extent of involvement of the adventitious elements, such as the neuroglia, bloodvessels, and membranes. Were this not so we could at once in cerebral birth palsies, from meningeal hæmorrhage, assume for immediate surgical intervention (a proceeding recently suggested) very hopeful results, because the pressure symptoms, especially when the motor area is affected, would make an early diagnosis of the condition comparatively easy. Again, the ætiological factor in these cases, such, for example, as prolonged or difficult labor, the use of forceps, etc., would further help us in diagnosis; and the amount of the immediate damage sustained by the brain could be gauged by a determination of the duration, the amount of force brought to bear on the head in the delivery of the child, and by the general symptoms presented. Assuming these things to be true, it would, therefore, only remain for the surgeon to demonstrate to us the practicability of opening the skull and removing the clots. As a matter of fact never prior to 1905 have such operations in infants been recorded, and this youthfulness of the subject led me to try and direct more general attention to it.

Craniectomy for meningeal hæmorrhage due to trauma has been successfully done in children in a number of recorded cases. Chipault cites cases by Bird, Schloffer, and others, and Kirchmayr reports a case. These were children of eight, six, and fifteen years, respectively. McCarthy, of Philadelphia, states that he has trephined in one case of infantile intracranial hæmorrhage unsuccessfully. He states that few such cases present themselves, and that a careful diagnosis is necessary; that intervention is justifiable, however, because of the hopeless outlook as to sequelæ.

Gowers speaks of the possibility of surgical intervention in meningeal hæmorrhage in infants, but considers it to be too severe and requiring a degree

* Read at the one hundred and seventy-fourth meeting of the Society of Alumni of Bellevue Hospital, December 5, 1906.

of diagnostic certainty which, he thinks, is possible only after the brain injury has developed to such an extent as really to be ineradicable, thus rendering the operation impracticable.

Again, other neurologists and all obstetricians have contended that the new born infant would be unable to survive the shock of craniectomy; and it has been further asserted (by a pædiatrist) that coagulation of the blood in the new born is so slow that a fatal hæmorrhage would result as a sequel to the operation. Further, an orthopædist writing of Little's disease says that while hæmorrhage may occur and give rise to a picture of that disease, we often find on the contrary a long series of the severest cases of labor, due to narrow pelvis, etc., with forceps delivery, without the development of a single case; and this authority lays considerable stress on "psychic trauma," *i. e.*, heredity as to alcohol, syphilis, etc., rather than on physical trauma in the ætiology of this form of infantile cerebral palsy.

Finally, as good an authority as Kernisson states that it is an easy and natural thing to do to open the cranium in these cases, but that no one knows what would be found or whether the cases were truly operable.

It can be seen, therefore, that it was in the face of much negative testimony that Cushing, of Baltimore, began operating in these cases of meningeal hæmorrhage in 1904, and his results in four cases, published in 1905, should be of great interest, as they are apparently the only ones at present recorded. Cushing's work is doubtless familiar to many, but its importance may be magnified if we ascertain that the relative frequency of hæmorrhage as a cause of infantile cerebral palsy is greater than generally acknowledged. It is generally admitted that this symptom complex has invariably a vascular origin. Further, there is no doubt that the disease is very often not recognized until weeks or months have elapsed from the time of the initial lesion; sometimes even until the age at which the child should stand or walk is reached. Starr, in his personal experience found forty-five per cent. of all cases of infantile cerebral palsy dated from birth; and an analysis of the 341 recorded cases which I have studied at the Vanderbilt Clinic shows twenty-seven per cent. dating from birth, and these patients all gave a history either of difficult or premature or protracted labor, of malposition requiring manual or instrumental delivery or of being a twin; and most of these children were born asphyxiated. These asphyxiated birth cases were all doubtless of traumatic vascular origin, and they presented at the clinic similar clinical pictures to those cases arising from lesions before or after birth, *viz.*, hemiplegias, diplegias, fits, mental defects, athetosis, etc.

Spencer, an English obstetrician, in 130 autopsies of still born children found that most of the brains which showed meningeal hæmorrhage were also congested. Oedema of the meninges was found by him in twelve cases; hæmorrhage into the brain substance in one case. The greater part of the hæmorrhages was beneath the membranes, but occasionally also between the dura and the skull, and sometimes into the tentorium and the falx. Hæmorrhage into the pia or arachnoid occurred in 40.7 per cent., *i. e.*, in fifty-three cases. The location of the hæmorrhage was over the convexity in 30 per cent.,

twenty-nine cases out of forty-nine being bilateral, and the other twenty cases unilateral. Hæmorrhage at the base was found in 27 per cent.; intraventricular hæmorrhage in 5.4 per cent.; and between the dura and the skull a few times, the clot being usually slight in extent and thickness. Spencer had the histories of all of his patients and states that all of the forceps cases, *viz.*, twelve, had cerebral hæmorrhage, eleven of them being meningeal and one intracerebral. Few cases were of natural head delivery; and he found hæmorrhage in rapid labors, in very small and in very large children, and in both primiparæ and multiparæ, the former predominating. Softness of the skull bones and their increased mobility from laxity of the sutures was also noted.

No one seems to have given proper attention to the character of the brain injury which occurs simultaneously with the surface hæmorrhage; but autopsies have shown that subsequent to hæmorrhage we may have either a meningoencephalitis combined with lobar sclerosis; or a pseudocyst, a pseudoporencephaly, or cerebral atrophy; areas of softening, cicatrices, thinning of the cortex, or intense hydrocephalus. Both the psychic and the motor zones of the brain, as well as sensory areas, may be involved. Microscopically we find a genesis of centres and pyramidal tracts; usually a diminution in size and number of the cortical and pyramidal cells, and a shortening of the dendrites, the pyramidal tracts showing small axis cylinders and little myeline sheath, and the tracts taking but little stain.

From the apparently hopeless outlook for the cure of the fully developed disease infantile cerebral palsy (as shown by its pathology), let us turn to the discussion of preventive treatment at its inception, when due to hæmorrhage, by means of immediately conducted craniectomy for the removal of the clots in the new born.

Cushing, in publishing last year his four cases, quotes no previous authority, nor does he claim priority. He does not cite any cases inspired by his own example, although he began to operate in 1903. He admits that the leading contemporaneous writers on obstetrics and paralyses do not authorize intervention; but the successful issue in fifty per cent. of his four published cases and in fifty per cent. also of four later ones, as yet unpublished, but concerning which he has recently written me, controverts much adverse theoretical criticism, and an analysis of his work may encourage some of us to attempt similar treatment in appropriate cases. His four little patients all stood the shock of craniectomy exceedingly well, though one had taken no nourishment in the three days of its existence; one was operated upon after seven days and one after eight of insufficient nourishment, and all were further exhausted by convulsive seizures. In addition, three were asphyxiated, labor having been prolonged and difficult. One was a twin. The fourth case was a precipitous delivery and developed a hæmatoma after birth. All had localizing symptoms; all were cases of severity; all had slowing of the pulse, tense and bulging fontanelle, and inequalities of the pupils.

Those who have followed Cushing's work will recall that two of his cases had a favorable termination. One of these was the case not operated on until the eighth day after birth. The convulsions in this case were mostly left sided, with deviation of

the eyes to the left. Free blood and small clots were found on the right lateral convexity and removed; the child had no more fits, and at the end of a year it could take a few steps and say a word or two.

The other recovery happened in an infant who was operated upon on the seventh day in an apparently hopeless condition. There were Cheyne-Stokes breathing with periods of apnea, rigidity of the legs, convulsive movements of the arms and legs, cedema of the right eyelids with proptosis, etc. Both sides of the skull were opened in this case at one operation. Clots were found and removed; the base was not explored. This child, except for a blind eye, recovered and is developing normally.

Dr. Cushing's experience teaches us, in the first place, that the condition of meningeal hæmorrhage in the new born is capable of diagnosis and localization, although localizing symptoms do not appear sometimes until several days have elapsed. Second, that the operation is well borne. Third, that a hopeful result is obtainable sometimes in apparently hopeless conditions.

As to symptoms in these cases, these do not seem to point to secondary increase in the hæmorrhage. The diagnostic symptoms produced may be divided into those which are general and more or less transient; and those which are localizing and tend to be permanent. The bulging fontanelle which in many cases does not pulsate, the asphyxia and the slowing of the pulse we would speak of as general symptoms; the convulsions are often localizing, as they are frequently unilateral. There is often stupidity in nursing or difficulty in swallowing. Localizing symptoms in the shape of muscular twitchings, rigidity or paralysis may be present; or conjugate deviation of head and eyes to the side opposite the lesion. An affected arm or leg may not be moved. Both legs may be rigid and exhibit convulsive movements, showing a double sided lesion of the leg centres. Jackson's hemiplegic sign should be looked for in unilateral hæmorrhage, and may prove to be a valuable sign. In the quiescent breathing of the infant the chest expansion in these cases should be found greater on the paralyzed side.

The x ray might be tried in mild cases of suspected cerebral hæmorrhage. It has been found clinically and experimentally that hæmorrhage, softening and abscess in the adult can be diagnosed by this means. (Pfhaler.)

Symptoms of basilar hæmorrhage, though inoperable, should be recognized, as they may perhaps sometimes be improved by a decompression operation over the convexity, as shown in one of Cushing's cases. Hæmorrhage in such cases is usually into the posterior fossa, and affects the pons, medulla, and cerebellum, and is of course usually quickly fatal.

To distinguish hæmorrhage at birth from prenatal causes in a given case, lumbar puncture has been suggested, red blood corpuscles being found in the cerebrospinal fluid if the case is hæmorrhagic. Again, in prenatal cases before the seventh month the limbs are not rigid or incoordinated on account of total nondevelopment of the pyramidal system; and the birth is often easy in these cases.

The history of the labor must be taken into account, as difficult and prolonged labor, etc., are the most frequent causes of meningeal hæmorrhage.

Hæmorrhage occurs most frequently over the motor areas. If unilateral we have but the opposite side affected; if bilateral both legs are affected mostly and one or both arms to some extent, and the trunk centres, lying near, may be involved; and sometimes when there is difficulty in supporting the head we may know (if there are no basilar symptoms) that the centre for the head muscles in the lower central and precentral convolutions is affected.

If an operation for removal of the hæmorrhage is not performed the patient dies; or, the blood is slowly absorbed. In the latter event the initial brain damage is augmented and becomes permanent before really a general improvement may take place; and the child shows more and more plainly some of the well known symptoms of infantile cerebral palsy.

Occasionally a case with severe symptoms of cerebral hæmorrhage may escape noticeable damage. Brothers reports such a case in which there were persistent convulsions repeated for days, after a most difficult instrumental delivery, and yet the child made apparently a perfect recovery. Usually, however, the brain has to compensate for a certain amount of damage, and a reeducation in some parts must take place when the child begins to walk and otherwise coordinate. This we are called upon to assist by motor exercises.

We have previously alluded to the fact that the brain structure must be more or less injured in the same process which causes the meningeal hæmorrhage in these cases, and we maintain that the permanency of the condition and of the symptoms depends upon the degree of involvement of the brain parenchyma induced by the trauma and the asphyxia, as before stated, and not upon the extent of involvement of the adventitious elements. The hæmorrhage itself by pressure produces secondary effects through anæmia, according to its extent and location.

The fact that convulsions supervene early points to early damage of the cortical motor cells. The same is partly true of the early flaccid rigidity or paralysis which may occur.

Treatment of the later manifestations of infantile cerebral hæmorrhage by surgical intervention has occupied orthopædists and general surgeons for a long period. With reference to retention apparatus, it was formerly thought that directly such apparatus is removed the spasm returns. Latterly, however, it is found that when used carefully for a long period it tends eventually to overcome spasm. Care must be exercised to prevent atrophies and contractures.

Electricity has little effect; but this and massage and systematic mental education, as by the Allan-Latshaw method, we are not concerned with in this paper; though it occurs to me that all might be required sometimes, even after craniectomy, later on, to aid in the proper development, compensation, and reeducation of centres. In a few cases the obturator nerve has been resected to overcome adductor spasm. Its practicability is doubtful.

Many tendon and muscle transplantation operations and tenotomies of such tendons as are rebellious to active and passive movement seem to be useful in overcoming spasticity, contractures, and deformities, and are thought by some to prevent a tendency to posthemiplegic chorea. They certainly weaken the peripheral neuron, and thus tend to

equalize innervation. Measures which tend to heighten the energy of the upper or corticomotor neuron may be better obtained perhaps by neuroplastic operations.

Rédard in a monograph speaks of neurotomy for cerebral palsies. Peripheral nerve anastomosis has been employed by Frazier and Spiller, Clark and Taylor, and others in the surgical treatment of peripheral palsies and also of anterior poliomyelitis where the palsy is not too extensive; such operative procedures have been followed often by very great benefit and numerous cases are now on record, though these operations are really suggestions of the twentieth century.

Very recently analogous operations have been suggested and tried in the treatment of infantile cerebral palsy. The peripheral conditions found in that disease imitate to some extent the conditions found in poliomyelitis, though their source is of course not the same. Anastomosis in adult paralytics has been attempted with doubtful results. Kennedy reports good results in nerve anastomosis of antagonists in poliomyelitis, and it has been thought that a similar operation in hemiplegias might be valid.

It has been found that when the peripheral end of a healthy nerve is inserted into a longitudinal cut in another healthy nerve the inserted nerve regains its function. Further, that a partially diseased nerve when inserted into a healthy one seems apparently to take on a numerical increase in its fibres, and also to show some restoration of function; but if the nerve is greatly diseased improvement need not be looked for without the aid of a healthy nerve obtained elsewhere.

There are several operations which have been suggested for the relief of symptoms of infantile cerebral palsy, but they have not as yet reached a practical solution. One that might be mentioned is dividing the pyramidal tract at some point for the relief of epilepsy in these cases. This suggestion is based on experiments and upon the fact that fits in hemiplegics cease after complete or nearly complete degeneration of the pyramidal system which follows a second attack of the hemiplegia. Spiller suggests the treatment of athetosis by nerve division and transplantation.

In conclusion, it seems reasonable to say that immediate surgical intervention in intracranial hæmorrhages of the new born is justifiable in properly selected cases, as offering hope where no immediate hope seems otherwise to exist, and also from the standpoint of mitigating distressing sequelæ. Further, as diagnosis becomes more and more accurate, with experience and careful observation, it may be that meningeal hæmorrhage will be more frequently discovered than at present, and we will thus be able to operate early and obviate with certainty the secondary effects on the cortex arising from pressure. Early operation is found to be well borne. The blood is found coagulated as in similar conditions in the adult, and even when the hæmorrhage was basilar in a case a decompression operation was useful. After all operated cases it is advisable to assist the brain in its compensation and reeducation of centres by a careful and thorough physical and mental training of the child. On the whole, however, we are obliged to say that as yet our prognosis must be tentative, on account of the participation of the brain

cortex in a possibly destructive process from the trauma and asphyxiation.

Quoting from a personal letter from Dr. Cushing: "Success depends upon two things: First, the early and prompt recognition of the condition by the obstetrician; and second, the delicacy of manipulation and painstaking methods of the operator. We will probably have to wait a few years before the combination of an interested obstetrician and a surgeon whose work lies chiefly in neurological fields becomes a very common one. Not until then may we expect a large number of successes in the hands of general surgeons."

As regards surgical orthopædic treatment, nerve transplantation would seem to conform most nearly to the indications, as the lesion is primarily one of the nervous system. Its object is to equalize innervation and thus relieve spasticity, spasm, etc., and to prevent contractures and deformities. Here again it is advisable to operate in early childhood, before atrophy, contractures, and joint changes have produced a deformity too exaggerated for easy correction. A careful differential diagnosis of the disease is of course absolutely necessary. Oppenheim emphasized this in calling attention to cases of muscular atrophy which had been operated on by orthopædists under the belief that anterior poliomyelitis was present, and of course no improvement had taken place. Again, after the diagnosis is made, the exact amount of individual muscle power must be ascertained by electrical tests, whatever operative procedures are decided on, in order that they may be successful, and it is advisable to begin experimentation in a given case in the lower extremity, as requiring less intricate muscle coordination than is required in the upper extremity.

At present, tenotomies, tenoplasties, and muscle transplantation are common operations, and are generally useful when skilfully performed.

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3 EAST FIFTY-THIRD STREET.

ENDOTHELIOMA OF THE OVARY.*

By H. A. BERNSTEIN, M. D.,
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The specimen which I present was removed from the abdomen of a girl, seventeen years of age, and interesting not only on account of the nature of the growth, but also because of the youth of the patient. These tumors no doubt appear at any time of life, but the earliest up to the present was at eighteen, reported by Braetz.

* Presented at the Gynecological and Obstetrical Section, New York Academy of Medicine, May, 1906.

The origin of endothelioma is still too obscure to invite comment, simulating carcinoma in microscopical appearance and resembling sarcoma in growth history, the question arises, "To which family or group is it most nearly related?"

Malignant new formations of the ovary arising from the endothelium of blood vessels were first

ly nourished and looked like a woman six months' pregnant. She was about five feet one inch in height, and much below the normal weight. Examination showed a somewhat irregularly enlarged abdomen, mainly below the umbilicus, with the left side larger and extending higher than the right.

Upon external palpation a large irregularly rounded body could be felt, seemingly made up of two parts. The right side harder and more resisting to the touch than the left, and the latter the larger of the two, gave a sensation of fluctuation to the examining fingers, which in connection with its rapid growth, etc., led to a diagnosis of cystic sarcoma, probably of the ovary. Percussion and auscultation gave very little satisfaction, and change from the prone to the erect posture did not alter the position of the tumor, nor the appearance of the patient. The fundus of the uterus could easily be felt through the rectum, the uterus itself being free and mobile. No vaginal examination



Fibrous tissue with muscle cells.

observed by Marchand and Leopold, and they were later shown to arise also from lymph vessels.

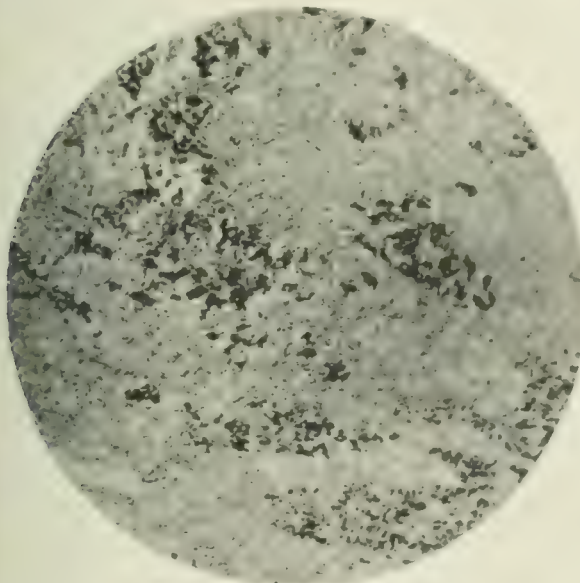
The patient in question was seventeen years of age, born in Austria, eight years in the United States. Her family history was negative, and no history of former illness. She first menstruated at four-



Tumor containing ovary.

teen. and since then always regular. Seven months ago she began to have pains in the abdomen and noticed an enlargement in that region. She consulted Dr. Louis Fischer under whose care she had been since childhood, and who made the discovery of the tumor described below.

The girl when I first saw her was anæmic and poorly nourished. The mass was quite immovable and its exact attachment was not easily outlined. Upon opening the abdomen the tumor was found impacted, lying mostly to the right, and forcing the uterus backward and downward. It was hard to displace, but when slightly elevated, and air permitted to enter underneath the body, it shot out of the wound and practically lay outside of the abdomen. It proved to be attached to the broad ligament of the right side by a wide pedicle. The right ovary was absent and was probably contained in the growth, helping by its enlargement to make up part of the tumor. There was practically no ascites, but there was free fluid in the abdomen. A number of openings made in the tumor for the purpose of evacuating its supposed fluid contents, failed to confirm the diagnosis of cyst or cysts. The tumor was large, rounded, and white in color, seven by five by five and one half inches in size, and weighed three and one half pounds. The capsule was thickened and slightly injected, and on one side was a nodular and elongated structure, probably the ovary. The interior was white, irregularly lamellated and rather soft in consistency. Microscopically the tumor consisted chiefly of fibrous tissue intermingled with muscle cells. The vessels were not abundant, and showed



Fibrous tissue with muscle cells.

The girl when I first saw her was anæmic and poor-

neither congestion nor thickening of the walls. The lymph spaces were dilated, and contained nuclei and nucleoli and scant cell body. There was no direct connection between the cells and fibrous tissue. The growth of the cells never extended beyond the lymph channels, so that the cell strands all had an elongated appearance.

The wound, about six inches in length, healed by primary intention, and the patient made an uneventful recovery. Thus far she has suffered no after effects from the operation. It is however too soon since the removal of the tumor (about three months) to predict as to future metastases, and reports of such ovarian neoplasms are still too few to permit one to draw any positive conclusions regarding the return of the disease.

The writer desires to gratefully acknowledge the advice and assistance of Dr. Arnold Sturmorf.

77 WEST ONE HUNDRED AND EIGHTEENTH STREET.

A STUDY OF THE URINARY ANALYSIS OF OPERATIVE CASES AND THE TREAT- MENT OF COMPLICATIONS ARISING FROM KIDNEY INSUFFICIENCY.*

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The surgeon who desires to give his patients every chance to make a good recovery must consider several factors besides the operation itself, and among the many, the condition of the kidneys both prior to and immediately following operation, which condition in my opinion has not been fully appreciated nor fully studied. With this thought in mind, I have studied the urinary analysis of two hundred and twenty-eight cases operated on, which have come under my observation, and have also reviewed the literature in order to demonstrate the importance of this subject and to encourage others to give the matter the attention it demands.

The urine of each patient was examined for two, three, or more consecutive days prior to and on the day following the operation, when, if evidence of kidney irritation were present, it was examined daily until the findings were negative, and then at intervals of a few days during the time the patient remained at the hospital. In this study the patients were divided into two classes: 1. Those on whom a coeliotomy was performed; and 2, those on whom a plastic operation only was performed. Many patients had both a coeliotomy and a plastic operation performed upon them at the same time, and they were classified as coeliotomy cases.

In every report not only a chemical but also a microscopical examination was made. A chemical examination of the urine alone, especially in gynecological practice, is of little value in determining the condition of the kidneys. The mere finding of albumin in the urine does not indicate that the patient has nephritis, because the reaction may be due to a leucorrhœal discharge, a menstrual fluid, an urethritis, a cystitis, a pyelitis, or to a hæmorrhage

along the urinary tract. In other cases all the symptoms of an advanced nephritis may be present and no albumin can be detected in the urine. This form of nephritis was written upon extensively by the late Dr. Stewart. With the aid of the microscope only are we able to determine the source of the albumin and the presence of casts. Even by a careful microscopical examination of the urine we may fail to find casts when only one or two specimens are examined. It has been known for many years that in chronic interstitial nephritis casts occur and recur intermittently. This has been mentioned by several observers and more recently by Defendorf, who states: "It is a well known fact that in chronic interstitial nephritis casts occur and recur intermittently, sometimes sparsely and again as if in showers." In a few cases in this series casts were not detected until several specimens had been examined and then they were found in numbers for several days. In one case the urinary reports were negative for three days. On the morning of the day appointed for operation many granular and hyaline casts were found and persisted for several days, when they disappeared, only to return after a short interval. Many observers, among them Noble, Shattuck, Barrie, Elliott, Cabot, Funk, and others, have noted that nephritis may be present while the examinations of the urine are negative. Cabot states, "The attempt to estimate the anatomical condition of the kidneys by the measurement of albumin and the search for casts is fallacious in the extreme." Cabot states that albumin and casts in the urine do not always mean that a true pathological nephritis is present, and, on the other hand, that a true pathological nephritis may be present when albumin and casts are not found in the urine. Funk, from the study of a large number of cases, corroborates the findings of Cabot. Noble reports two deaths from uræmia, following operation, in which repeated examinations of the urine prior to operation were negative; at autopsy small, contracted kidneys were found.

In order to determine the condition of the kidneys, sufficient for practical purposes, it is necessary to have an accurate record of the amount of urine passed in each twenty-four hours, and then to have a careful chemical and microscopical examination made of specimens taken from the mixed quantity for several consecutive days. Following operations it is of the utmost importance that the urine should be measured and recorded in order to determine to what extent the kidneys are functioning, and, in operations upon the female pelvis where it is frequently necessary to place ligatures about the region of the ureters, by considering the amount of urine passed we are frequently put upon our guard to consider the possibility of a ureter having been ligated.

As the patients were admitted to the hospital it was found that thirty-four, or fifteen per cent. of them, had hyaline, granular, or hyaline and granular casts in the urine. Many specimens contained both albumin and casts, and in several specimens casts were found but no albumin could be detected. Kelly in two hundred cases of abdominal operations found albumin in the urine before operation in forty-six, or twenty-three per cent., and casts in ten, or five per cent. Noble found albumin in the urine before

* Read before the Philadelphia County Medical Society, November 28, 1906.

operation in about ten per cent. of his cases. Barrie in the study of the urine from fifty patients, of varying ages, who were apparently normal, found traces of albumin in forty per cent. and in twenty-six per cent. casts of the hyaline and granular variety. Shattuck from the study of the urine of a large number of patients draws the conclusion that renal albuminuria, as proved by the presence of albumin and casts, is much more common in adults quite apart from Bright's disease or any obvious cause of renal irritation than is generally supposed. From the study of a large number of urinary examinations Fussell found that approximately twenty per cent. of the urines examined showed something abnormal, and about twelve per cent. of the patients whose urine was examined showed something abnormal in the urine. All patients, in this series, with casts in the urine were kept in bed, given liquid diet with a glass of milk every two hours, and six or eight glasses of water each twenty-four hours. Many were given Basham's mixture. Operation in every case was deferred until the casts disappeared.

The importance of examining the urine for several consecutive days prior to and immediately after operation was first impressed upon me when a highly neurotic patient, suffering from a fibroid tumor, died of kidney insufficiency following operation. This woman was prepared for operation at home and was in the hospital but a few hours before going to the operating table. The one examination of the urine showed no evidence of kidney change. After the operation the patient passed but little urine, which contained considerable albumin and numerous epithelial, blood, granular, and hyaline casts. The patient died three days later with symptoms of a general peritonitis. At autopsy no evidence of a peritonitis was found. The kidneys were removed, and microscopical sections showed the uniferous tubules to be stripped nearly everywhere of their epithelial lining, and evidence of a former subacute parenchymatous nephritis.

Of one hundred and five patients upon whom only a plastic operation was performed, twenty-nine, or twenty-seven per cent. of them, had casts in the urine following operation. In 123 patients upon whom a coeliotomy was performed, where a much larger quantity of anæsthetic was used, forty-six, or thirty-seven per cent. of the number, casts were found. Of the 228 patients who were given a general anæsthetic (ether almost without exception being the anæsthetic used) seventy-five, or thirty-three per cent. of them, suffered from some change in the kidneys, as was evidenced by the presence of albumin, or epithelial, bloody, granular, and hyaline casts. Seven patients, three upon whom abdominal and four upon whom only a plastic operation was performed, had casts in the urine prior to, but not after operation. Kelly in two hundred cases following abdominal operation found casts in thirty, or fifteen per cent. Kelly calls attention to the fact that chronic nephritis is frequently associated with malignant disease. In twenty-two cases of malignant disease, chronic nephritis was found in forty-five per cent. This is probably one factor which accounts for the high, primary mortality in operations for malignant disease in the female pelvis.

The postoperative treatment of a patient who had casts in the urine prior to operation was as follows:

The patient was placed in bed between warmed blankets; the normal temperature was maintained by many hot water bags placed about the body; one thousand cubic centimetres of physiological salt solution was given beneath the skin, from two hundred and fifty to five hundred cubic centimetres of salt solution by the bowel every six hours; liquids by the mouth as soon as the stomach was retentive, and hot water bags were kept to the region of the kidneys until the casts disappeared from the urine. The same treatment was followed in every case as soon as casts were found in the urine following operation. When a patient passed but little urine and casts were numerous, besides giving salt solution by the bowel, hypodermoclysis was repeated as often as was necessary to maintain the quantity of urine equal to that passed by the average ether patient, from five hundred to one thousand cubic centimeters in twenty-four hours. In all such cases the bowels were opened as soon as possible. By following this line of treatment the casts disappeared from the urine in from one to thirty-seven days, the average being about six days.

Several patients who passed a small amount of urine in which casts were numerous developed symptoms of peritonitis, but when the kidneys began to act normally such symptoms disappeared promptly. As a rule, after the bowels had been moved freely the cast disappeared. In other cases considerable difficulty was experienced in securing free bowel movements.

Occasionally a patient will collapse from unrecognized kidney insufficiency during the performance of, or immediately after an operation, in which the amount of blood lost was so small, the manipulations so trivial, and the time of the operation so short, that they could not be considered as factors. Surgeons speak frequently of secondary shock. Such a statement is erroneous, as there is no such a thing; the condition so described is always due to a complication and in the majority of cases can be discovered if diligent search be made. In many cases the condition, described as secondary shock, is due to chronic disease of the kidneys and to the constitutional disturbances which accompany the organ lesion.

While the microscopical examination of the urine is of the utmost importance, nevertheless a complete chemical examination should be made in every case, and the quantity passed in each twenty-four hours should be determined when a patient is about to undergo an operation. By this method only are we able to make a functional diagnosis, and to detect certain cases of diabetes mellitus. When making the test for glucose with the ordinary solutions of copper care must be taken to distinguish between the reaction caused by the absorption of coal tar products and also from impure water used to dilute the solution of copper.

In this series the urine from one patient, who had acute, suppurative appendicitis, showed 0.55 per cent. of glucose and a specific gravity of 1.024. After the patient had been ill four days her condition became rapidly worse, and it was decided to operate. The day following the operation the specific gravity of the urine was 1.034 and showed 1.66 per cent. of glucose. Two days later the urine contained a trace of albumin, a few red blood cells, and many bloody,

granular, and hyaline casts; this condition cleared up in six days. The quantity of glucose gradually became less and finally disappeared eleven days after the operation. (This case was reported by Dr. Charles P. Noble, Personal Experience In Operations Upon Diabetic Patients, *American Medicine*, vi., No. 13, pp. 511-515, September 26, 1903.)

In February of this year, when in a distant city, I saw a patient die of diabetic coma sixty hours after a simple operation. In this case the condition was not suspected, the urine was not examined prior to, nor after the operation until the coma was well marked. Might this death have been avoided had a careful examination of the urine been made?

From the study of this series we may draw the following conclusions:

1. That of the patients who come to the hospital for operations from fifteen to twenty per cent. suffer from some change in the kidneys, as is indicated from a careful study of the urine.
2. That the urine should be measured and examined for several consecutive days before a patient is given a general anæsthetic.
3. That a chemical examination of the urine alone is not sufficient, and that in every urinalysis a careful microscopical examination should be made.
4. That the urine should be measured and examined from every patient after a general anæsthetic has been administered.

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1429 SPRUCE STREET.

THE CLINICAL VALUE OF THE DIFFERENTIAL BLOOD COUNT IN OPERATIVE OTOTOLOGY.*

By JAMES F. McKERNON, M. D.,
New York.

In many departments of surgery there is a certain percentage of cases where definite symptoms

are absent, which, were they present, would enable us to make a positive diagnosis. Some of these cases are left in doubt from a few hours to several days. Will a differential blood count help us, in these doubtful cases to more accurately make a diagnosis? I think it will, and this opinion is based upon the differential leucocyte count in one hundred and sixty-six operative cases, one hundred and eight of which were adults, the remaining fifty-eight being children, ranging in age from six months to twelve years.

In all of these one hundred and sixty-six cases a differential leucocyte count was taken, as an aid in diagnosing mastoid disease, and the sequellæ resulting from it. Of the one hundred and eight adult cases, a positive diagnosis of mastoid involvement was made in eighty-four without recourse to the blood count, which was made only for confirmatory evidence. Of this number of cases, the lowest polymorphonuclear proportion was 73.2 per cent., the highest 97.6 per cent. In the twenty-four remaining cases, many of the typical symptoms of the disease were absent, and it was here that the differential leucocyte count proved of the utmost value. Of these twenty-four cases, eighteen did not present the usual clinical signs of mastoid disease, and it was only after a differential leucocyte count had been made that an operation was decided upon. Of these eighteen cases, the lowest polynuclear proportion was 73.2 per cent., the highest 86.4 per cent., and all of them contained pus in the mastoid process. Twelve of this number exhibited an extensive empyæma of the process, while in the other six cases, the pus was limited to the antrum, tip, and various portions of the zygomatic process.

The remaining six cases were complicated with a phlebitis of the sigmoid sinus, and in these cases the polynuclear proportion prior to operation on the mastoid was high, the highest being 96.6 per cent. and the lowest 86.8 per cent. Of these six cases, none progressed favorably after the mastoid had been opened, and each day, for three days following the operation, a differential leucocyte count was taken, showing that the polynuclear proportion had not been perceptibly lowered even by the evacuation of the pus from the mastoid bone. On the third day after the mastoid operation, the polynuclear proportion progressing steadily in four cases, and remaining practically stationary in the other two, the sinus was opened, and an infective clot removed in all six cases.

In all the cases of the adult series, daily examinations were made for ten days subsequent to operation, to determine the differential leucocyte count, which was found to steadily decrease after the second day, and in many of the cases reached the normal limits by the fifth or sixth day. Those cases where the decrease in the polynuclear proportion was not so rapid, were characterized by an excess of pus absorption prior to operation.

Of the fifty-eight cases in children, a positive diagnosis of mastoid involvement was made in forty-seven, prior to the differential count being taken, it being taken as in the adult cases, for confirmatory evidence only. In this series of cases, the lowest polynuclear proportion was 68.6 per cent., the highest 82.8 per cent. Of the eleven remaining cases, none exhibited the usual symptoms of the disease,

and here again the differential leucocyte count proved of value in eight cases. Of those eight cases, the lowest polynuclear proportion was 72.2 per cent., and the highest 83.4 per cent., and pus was found in abundance in the mastoid process. In the three remaining cases there was nothing to explain a high temperature and marked prostration, except the presence of a discharge from the patient's ear. There were no other symptoms or physical signs present. The ages of these patients were respectively six months, fourteen months, and two years. They were all badly nourished and markedly below par. In this series of three cases, the lowest polynuclear proportion was 42.4 per cent., and the highest 56.8 per cent., and from this the natural deduction would be absence of sepsis, but in relation to this low polynuclear proportion was a marked decrease in the number of white cells usually found. The white cells as found were respectively 7,000, 9,000, and 11,000, in round numbers. For three successive days the differential count was taken in these cases, and each day the resistance of the little patients was less, as shown by the leucocyte count, while the polynuclear percentage remained practically unchanged. In talking with Dr. Sondern about the lack of confirmatory evidence as shown by the differential blood count, he advised operation, saying that when the resistance of the patient was steadily decreasing, as shown by the small number of white cells, it was just as important to operate, if not more so, than when the polynuclear percentage was high. Following his advice, I operated, and found an abundance of pus in the mastoid process in each of these cases. For several days following these operations, a differential count was made, the result being a rather rapid increase in the white cells, showing an increased resistance of the patient, but no material change in the polynuclear percentage took place until after the fourth day, when there was a drop of several points below what is usually estimated as the normal standard. Particularly was this noticeable in one case where the polynuclear proportion prior to operation was 42.4 per cent. In this case five days after the operation, a differential count showed a polynuclear proportion of 36.6 per cent. The age of this patient was fourteen months. Why such a discrepancy existed in these last cases of the series, I am unable to explain, unless it be that owing to their low body resistance, the usual rapid absorption of pus did not take place. Neither did wound repair progress at all rapidly in these cases.

Bacteriological examination of the discharge from the ears was made in all the one hundred and sixty-six cases prior to operation. Of this number, one hundred and seventeen cases showed the streptococcus predominating in the discharge; in eight cases the staphylococcus was present alone; in two cases the diplococcus intercellularis meningitis was the only infection found; the remaining thirty-nine cases exhibited a mixed infection.

Conclusions. The conclusions arrived at by a study of these cases are that in septic cases, and particularly when distinct symptoms and physical signs are absent, the differential blood count is of practical value in enabling us to complete a diagnosis, and in cases of sepsis, when the physical signs and symptoms are distinct and definite, it is then only confirmatory of what is already present, and

gives us an added link to complete the chain of evidence.

In doubtful cases, when a differential count is taken and found to be negative, other daily counts should be taken, in order to verify or disprove that which has formerly been taken. Another fact of importance brought out in this series of cases is that when cellular bone structures, like the mastoid bone, are involved in a septic inflammation, without involvement of the adjacent blood currents, we find that in the majority of cases the differential count shows a relatively lower polynuclear percentage than when a septic process is present in the soft tissues of the body. This can be explained on the theory that an absorption of toxins is less rapid when such a process takes place in a bone cavity, than when the soft tissues of the body are involved, for in a number of the cases operated in, an abundance of pus was found, when the count showed a polynuclear percentage of between 72 and 80.

A point mentioned by Sondern (*New York Medical Journal*, June 16, 1906), and corroborated by a study of my cases, shows that when there is a pronounced polynuclear increase, associated with a pronounced leucocytosis, it is indicative of a severe infection with good systemic resistance, and that a pronounced polynuclear increase with little or no leucocytosis shows a severe grade of infection, with but little body resistance, and also that an increased polynuclear percentage, with stationary or decreasing leucocytosis, shows an increasing degree of infection, with decrease of the body resistance. We expect an improvement in the patient's condition to take place when there is a decrease in both the polynuclear percentage and the leucocytosis. This was not so in the three cases of infants reported, for with a low polynuclear count and a low leucocytosis there was a severe and increasing grade of infection, as shown when these patients were operated upon. A possible explanation of this may be that the specimens of blood examined did not represent the true condition of the circulating fluid. If this be the explanation, we must then turn to the laboratory worker and ask for still further research to enlighten us as to these discrepancies and others which may arise.

62 WEST FIFTY-SECOND STREET.

THE AMERICAN GIRL *VERSUS* HIGHER EDUCATION, CONSIDERED FROM A MEDICAL POINT OF VIEW.

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The American woman is preeminent above the women of all other nations for her zeal for higher education. Her intelligence, quickness of thought and action, coupled with the aptitude to acquire the knowledge she has set herself to obtain, causes her to become a competitor with man for academic honors, or for distinction in the realms of literature and science that is worthy of approbation. And yet, admirable as these qualities of mind may be, the belief is becoming to be more and more strongly held by those who are in a position to speak authoritatively on the subject, that

parents and educators in general are setting up wrong ideals for our girls, and instead of endeavoring to develop the girl into a womanly woman, they are forming her into a type of woman whose chief function in life appears to be to vie with man in the struggle to attain the high educational standards which are at present required by our high schools and other institutions of learning.

And what do we see as the result of fostering this system of higher education for women? We see large numbers of our young girls who are blossoming into womanhood and who, in the course of time, will become the wives and mothers of the American people, suffering from more or less impairment of the general health. These girls instead of being strong and robust as they should be at this period of their lives are often threatened with a physical breakdown. They frequently suffer from anæmia and digestive disorders and may develop symptoms of nervous disorders and even mental disease. The nervous system has been developed at the expense of other bodily organs and structures. The delicate organism and sensitive and highly developed nervous system of our girls was never intended by the Creator to undergo the stress and strain of the modern system of higher education, and the baneful results are becoming more and more apparent as the years go by.

Numerous writers in recent years have called the attention of educators and parents to the untoward effects upon the health of school children resulting from the educational methods now in vogue. Noteworthy among these writers is Professor John M. Tyler, of Amherst College, who, in a course of lectures delivered before the Twentieth Century Club of Boston, made an eloquent and earnest plea for a more careful and systematic study of the fundamental laws of physical growth and development in their bearing upon the problems of education. He lays special emphasis upon the value of physical exercise for the growing child and points out the importance of play, games, and gymnastics, in the proper and healthful development of the body. He deprecates the fact that parents, at times, warn their daughters who are in the grammar grades that active play is unbecoming to a young lady. This fact, together with long hours of study in school and at home, deprives the growing girl of the opportunity of taking a sufficient amount of physical exercise in the fresh air and sunshine, of which she is so much in need. As time goes on the already overtaxed girl is expected to take up the study of some accomplishment, such as painting or music, and as the result of the constant effort to keep up with her studies at school and at home, the young girl is obliged to sit up late at night pouring over her books, and is thus deprived of the proper amount of sleep. Soon the appetite is impaired, and she becomes listless and fretful, while it is not uncommon for her to develop symptoms of anæmia.

The foregoing delineation of the manner in which the general health of school girls in the grammar and high school grades is gradually and insidiously undermined is not a pleasant one to

contemplate. As the result of confinement in overcrowded, overheated, and often ill ventilated schoolrooms, and with several hours of close application to study at home, the young girl is ill prepared physically to enter the wider field of usefulness and responsibility soon to open before her.

Another authority on this subject, Dr. F. W. Van Dyke, of Oregon, in an address entitled *Higher Education as a Cause of Physical Decay in Women*, makes the following significant remarks: "Imagine if you can a novelist writing in this vein: 'She was pale, thin, and plain looking, with a peevish temper caused by ill health, but Armond loved her devotedly, passionately, although lacking youth, beauty, and of a cold nature, for great was her knowledge of theosophy, the lore of the ancients, and of the differential and integral calculus.' Why even Marie Corelli or Mary Johnson would not think of a man falling in love with such a heroine." Dr. Van Dyke goes on to say: "What earthly use to the ordinary woman is a smattering of Latin, Greek, the higher mathematics, music, and all such branches of learning? If a woman is to be a teacher, or is very talented, well and good. . . . But Nature has ordained that the vast majority of women shall become wives and mothers, and if they are exhausted mentally as well as physically, how is it possible to keep the race strong and healthy?"

It will not be out of place here to call attention to the accompanying table, for the purpose of showing the course of study required in the average high school of to-day:

I also introduce here a list of subjects taken from the curriculum of a well known girl's college: "Latin, Greek, French, German, English, mathematics, physics, chemistry, astronomy, history, sociology, economics, logic, psychology, philosophy, literature, fine arts, biology, physical training, physiology." (See page 117.)

Still another authority, Dr. A. S. Smith, of Montreal, writing in the *Popular Science Monthly*, points out the fact that in the overeducated woman the nervous system is developed at the expense of the other systems, digestive, muscular, etc., and he believes this to be the cause of general poor health so frequently observed in women. He further says that the very fact that these women have cultivated their intellects to a high degree causes them to raise their standard of requirements. As a result they are prone to become discontented with their lot, introspective, selfish, critical, and fault finding. He advocates the importance of early marriages as being the only true source of a happy home life, of contentment in the wife, and of faithfulness in the husband.

Now what are some of the evil results of this forcing system of education, for as is well known, Nature is an inexorable mother when her laws are violated? Young girls attending the grammar and high schools are not only subject to impairment of the general health, to which allusion has already been made, but they not infrequently become victims of headache, dyspepsia, chorea, hysteria, neurasthenia, and insanity.

EAST SIDE HIGH SCHOOL, ROCHESTER, N. Y.

COURSE OF STUDY OUTLINED.

	CLASSICAL	LATIN-GERMAN	LATIN-SCIENTIFIC	GERMAN-SCIENTIFIC
"D" or FIRST YEAR	Latin..... Algebra..... English..... Physiology..... English History or Elem. Drawing.....	5 Latin..... 5 Algebra..... 5 English..... 5 Physiology..... 5 English History or 5 Elem. Drawing.....	5 Latin..... 5 Algebra..... 5 English..... 5 Physiology..... 5 English History or 5 Elem. Drawing.....	5 German..... 5 Algebra..... 5 English..... 5 Physiology..... 5 English History or 5 Elem. Drawing.....
"C" or SECOND YEAR	Greek..... Cicero..... Geometry..... English..... Elocution..... Adv. Drawing (optional).....	5 German (or French)..... 5 Cicero..... 5 Geometry..... 4 English..... 1 Elocution..... 3 Adv. Drawing (optional).....	5 Zoology or Botany..... 5 Cicero..... 5 Geometry..... 4 English..... 1 Elocution..... 3 Adv. Drawing (optional).....	4 Zoology or Botany..... 5 German..... 5 Geometry..... 4 English..... 1 Elocution..... 3 Adv. Drawing (optional).....
"B" or THIRD YEAR	Greek..... Cicero..... English..... Ancient and Greek History, 1st sem..... Roman History, 2d sem..... Elocution.....	5 German (or French)..... 5 Cicero..... 4 English..... 1 Elocution..... 5 Ancient and Greek History, 1st sem..... 1 Roman History, 2d sem..... or French.....	5 Chemistry..... 5 Cicero..... 4 English..... 1 Elocution..... And one of the following: 5 Ancient and Greek History, 1st sem..... 5 Roman History, 2d sem..... or French..... or German.....	5 Chemistry..... 5 German..... 4 English..... 1 Elocution..... 5 Ancient and Greek History, 1st sem..... 5 Roman History, 2d sem..... or French.....
"A" or FOURTH YEAR	Greek..... Virgil..... English..... Elocution..... And one of the following: Algebra, review, 1st sem..... Geometry, review, 2d sem..... Advanced Mathematics..... Physics..... French..... German..... Adv. U. S. History, 1st sem..... Civics, 2d sem..... Arith. review, 1st sem..... Vocal Music, 2d sem.....	5 German (or French)..... 5 Virgil..... 4 English..... 1 Elocution..... And one of the following: 5 Algebra, review, 1st sem..... 5 Geometry, review, 2d sem..... 5 Advanced Mathematics..... 5 Physics..... 5 French..... 5 Adv. U. S. History, 1st sem..... 5 Civics, 2d sem..... Arith. review, 1st sem..... Vocal Music, 2d sem.....	5 Physics..... 5 Virgil..... 4 English..... 1 Elocution..... And one of the following: 5 Algebra, review, 1st sem..... 5 Geometry, review, 2d sem..... 5 Advanced Mathematics..... 5 French..... 5 German..... 5 Adv. U. S. History, 1st sem..... 5 Civics, 2d sem..... Arith. review, 1st sem..... Vocal Music, 2d sem.....	5 Physics..... 5 German..... 4 English..... 1 Elocution..... And one of the following: 5 Algebra, review, 1st sem..... 5 Geometry, review, 2d sem..... 5 Advanced Mathematics..... 5 French..... 5 Adv. U. S. History, 1st sem..... 5 Civics, 2d sem..... Arith. review, 1st sem..... Vocal Music, 2d sem.....

The annual report of the New York State Commission in Lunacy for the year 1902 shows that of the 35,006 women admitted to the State hospitals for the insane during the preceding eight years, 15,059, or forty-two per cent., of the whole number had been well educated; while of the 36,422 men who were admitted during the same period, 6,912, or only sixteen per cent., were reported as well educated. The foregoing statistics would tend to show that women, who have undergone the strain of the modern system of education, are much more liable to become victims of insanity than men of the same class.

The question then arises: Does the higher education of women pay when it is taken into consideration that the health of prospective wives and mothers is thus seriously endangered? Certainly not.

There is another phase of the subject concerning which a few words should be said. Psychologists have called our attention to a phenomenon known as the evolution of sex in mind. By this is meant the development of certain mental attributes characteristic of either sex. Limitations of space preclude a scientific exposition of the theory. Suffice it to say that at about fourteen or fifteen years of age physiological changes take place as the result of which the growth and development of the body become more active, and the mental qualities peculiar to the sex become more manifest. The girl continues to develop

physically and mentally for several years, until finally we see before us the woman, with her grace of form and charming and lovable qualities of mind.

But this is only the case when, under proper guidance, the womanly nature is permitted to develop naturally and symmetrically. Allow girls to strive for the honors of the school and college, and very often masculine traits of mind are developed at the expense of the gentler feminine mental traits. As time goes on these girls become indifferent to, and even develop a distaste for, the duties pertaining to the home life. They are prone to be egotistical, to assume a certain independence of speech and manner, and are not disposed to be guided by the advice of their parents.

It is also worthy of note that many young women who are the product of higher education neglect to pay sufficient attention to the proper cultivation of that refinement of speech and charm of manner which we are accustomed to think of as being the attributes of a lady. Instead of striving to attain these estimable qualities of mind and heart which cause them to be recognized as ladies, these young women endeavor to imitate, to a greater or less extent, the speech and manner of the stronger sex. In some the voice becomes loud and coarse, they laugh boisterously. Others use slang and the vulgar expressions of the day, and they may even resort

to profanity. They do not exhibit that modesty of demeanor which we have been taught to believe is one of the most admirable traits of the feminine character. Only recently some college girls gave a public performance of *The Critic* before a mixed audience. These young women not only appeared in knee breeches, but added "spiciness" to the performance by the use of such emphatic expressions as "devilish," "damned," and "damned devilish," without apparently the slightest appreciation of the impropriety or indecency involved in the use of such language. "It is not every day," says the *New York Herald*, "that admirers of women pursuing higher education have the opportunity of hearing them give expression to such forcible epithets; and since men were admitted to the first two performances there is little doubt that half the audience will be masculine this afternoon and evening."

It is hardly necessary to say that men as a class do not look up to these women as being their ideals of what a woman should be. They have, it is true, a certain regard for them and treat them as *bonnes camarades*; but, most men do not experience for them the deep sentiment of love and devotion which they feel for members of the sex who manifest those lovable feminine traits of character with which God intended they should be endowed. In order for a woman to win and retain the love of a worthy man she must be the object of his sincere respect, confidence, and esteem; otherwise, sooner or later, she will awaken to the sad consciousness that her dreams of happiness have failed of realization.

There is another point that is worthy of mention. Many women who have been in pursuit of higher education are looked upon as being "queer," not only by those with whom they come in contact in a business, or social way, but particularly by the members of their own sex. Some show poor taste in the matter of dress, others have noticeable peculiarities of manner—in short, they are eccentric. Again, in others the modes of thought and action are markedly different from those commonly observed in other women. They have a tendency to be egotistical, they are often irritable, and are very emphatic when giving expression to their opinions. As a rule these women are not particularly agreeable companions to associate with either at home or abroad.

The question now naturally arises: "Does the present system of higher education tend to fit young women for wifehood and motherhood; functions which the Creator evidently intended they should fulfil? I think there is but little doubt that this question should be answered in the negative. As a result of the stress of work and incessant goading now in vogue in our public schools and in many of our private schools, the young girl's time is almost wholly occupied with her classroom work, or with studies at home. In the high school grades it may require as much as three and a half to four hours of study at home in order that the pupil may feel herself properly prepared for the recitations of the morrow. Usually the school work for the ensuing day is prepared in the evening, and it is late before the

weary student is able to retire for the rest and sleep of which she is so much in need. After taking a sufficient amount of exercise and recreation in the open air, and possibly a music lesson, or painting lesson, it will be readily admitted that the young girl has very little time left at her disposal in which to devote herself, even if she were so inclined, to becoming acquainted with the mysteries of housekeeping, or to acquire a general knowledge of plain sewing and cookery. And yet the parents of this girl fondly hope that some day she will be happily married. Can it be reasonably expected that such a girl would be capable of creating a happy home, or of becoming a help mate in the truest sense of the term? It must be admitted that the probabilities are not at all favorable to such an assumption. It is possible that such a marriage might prove to be a happy one, but only after the characters of both husband and wife had been sorely tested by sad and disheartening experiences.

It will hardly be maintained that the high school or college graduates of to-day, standing as they do on the threshold of womanhood, are superior, or even equal, to the women of the eighteenth or early part of the nineteenth centuries as regards their broad and practical training for usefulness in the home. Any one who has made a close study of the home life as it existed in colonial and revolutionary days, either in New England or New York, will readily admit that the women of the periods mentioned were model housewives and ideal helpmates. Not only so, but our ancestors saw to it that their daughters were so trained in the home that they were admirably prepared to assume the duties and responsibilities of a home of their own at the time of their marriage. It is true that most of these women had very limited educational advantages, but their practical knowledge of the affairs of every day life and their good common sense rendered them capable of making the home all that it should be to husband and children, the dearest place on earth, where love, happiness, peace, and contentment reign.

It is truly deplorable to contemplate the number of young women who are yearly ushered, by their mothers, into the marriage state, with very little or no practical knowledge of the duties to devolve upon them in the building of a home. This is particularly the case with young women from the middle and upper classes of society. While our young men receive more or less thorough training in the various professions and occupations to fit them for the struggle of life, our young women are permitted by their mothers to enter into the marriage tie, with very little or no training for the vocation of wifehood.

What, then, can be done to bring about reforms in the present system of educating the young?

1. The public must be thoroughly aroused to the dangers threatening the physical and mental health of school children under the educational system as now conducted, particularly in our public schools. Parents should be awakened to their responsibility in regard to the welfare of their children. No radical reforms will be made until parents, being convinced of the existing evils,

unite in making vigorous protests against existing conditions, and demand that a thorough investigation of present methods be made with a view to correcting the defects which have gradually crept into our educational system, and thus to materially diminish the dangers to the health of school children. State and local boards of education should be asked to hold conferences to discuss the ways and means of remedying the existing evils. The advice of eminent physicians should be sought, and their opinion in regard to safeguarding the mental and physical health of school children should be carefully considered.

2. Parents should be urged to permit their girls to develop according to Nature's laws. By encouraging young girls to take sufficient exercise in the open air and sunshine, a marked improvement will be noted in the general health.

3. Light calisthenics and outdoor games and sports are of great value in improving and maintaining the bodily health. On the other hand, certain kinds of gymnastic work, such as jumping, vaulting, lifting, etc., should be carefully avoided. Girls should not engage in sports or games which involve severe and prolonged muscular strain.

4. A thorough training should be given in the elementary branches of knowledge, such as reading, writing, spelling, arithmetic, geography, history, etc., cutting out all nonessentials and such branches of study as could be of little or no practical use to the average woman. Of what use can the study of Latin, Greek, civics, political economy, the higher mathematics, etc., etc., be to the average young woman, who in a short time after leaving school, marries and assumes the duties of housekeeping. Rather allow our girls to grow up strong and robust, and to develop into womanly women. Avoid as far as possible any studying after school hours, and devote some time each day to the training of the young girl in the duties pertaining to the life in the home.

5. Girls should not be allowed to enter school as early as is the custom at present, the school hours should be shorter (8.30 a. m. to 2 p. m.), with longer recreation periods. Only those children who show a marked talent for music or art should be allowed to take instruction in these branches during the school year, and then only once a week.

6. If proper instruction in the domestic economies cannot be obtained at home, such instruction should be provided in the public school. A certain number of lessons each year should be given to our girls by competent teachers, in plain sewing, plain cooking, and the sanitary methods to be used in the care of the home.

In the foregoing suggestions I have outlined in general terms the methods which should be adopted in order that the mental and physical health of the present generation of school girls should be properly safeguarded. It remains for the educators to institute and carry out the proper reforms.

GASTROPTOSIS A CAUSATIVE FACTOR OF TACHYCARDIA.

By HARRIS WEINSTEIN, M. D.,
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The causes of paroxysmal tachycardia are many and varied, and while they are well known and easily discovered in many cases, there still remains a large number of cases where no assignable cause for the attack can be found. Bearing in mind the function of the vagus nerves in relation to the heart's action, many cases of tachycardia, the causation of which has hitherto eluded our detection, can, it appears to me, be easily explained. Before entering upon a consideration of the influence exerted by the vagi on the heart, it may not be amiss to review the symptomatology of tachycardia.

The attack comes on suddenly; it may last anywhere from a few minutes to several months, and disappears as suddenly as it has appeared. The pulse is, as a rule, regular throughout, but it is sometimes irregular at the onset and termination of an attack. Arterial pressure always sinks, the pulse becomes small and soft, and at times it can hardly be felt at the wrist. The cardiac sounds are not altered. The patient may feel perfectly comfortable and well enough to go about his business, without being in the least disturbed by the accelerated heart's action. Others, again, become extremely weak, and especially in prolonged cases show signs of congestion of the internal organs. Dyspnoea, a sense of constriction of the chest, vertigo, headache, nausea and vomiting, profuse sweating, and diminution in the quantity of urine, are among the most frequent symptoms of severe paroxysmal tachycardia. It is evident that I refer to tachycardia not dependent upon paralysis of the vagus nerves, or upon affection of their centres in the medulla, or upon that caused by compression of one or both nerves in their course, for accelerated heart's action is always present in these conditions, and is easily diagnosed.

The attack may appear in a perfectly healthy individual without giving the least clue to its causation. The most frequent sufferers, however, are nervous individuals, or those suffering from various diseased conditions of the heart and vascular system. Nephroptosis, intestinal intoxications, acidæmia, especially in the terminal stage of diabetes melitus, and afebrile pulmonary tuberculosis, are among the maladies in which paroxysmal tachycardia is frequently present.

It is in the uncomplicated cases of tachycardia, where the attacks appear in apparently healthy individuals, that the greatest difficulty to detect their causation is met with. There is no doubt but that many of these obscure cases are brought about reflexly through interference with the proper functioning of the vagi. Bearing this in mind the ætiology of many cases of idiopathic tachycardia can, by carefully searching for remote pathological conditions, be brought to light. It is well known that the vagi exert a tonic, regulatory and inhibitory influence on the heart. Irritation of one or both vagi will cause slackening of the heart's action; by strong irritation of both

vagi the heart's action becomes entirely suspended in diastole. It is evident, therefore, that absence of this inhibitory influence of the vagi will cause acceleration of the heart's action. It is also easily seen that diseased conditions of any organ which directly or indirectly (reflexly) interfere with the function of the vagi will cause tachycardia. The following case, which has recently come under my observation, will serve as an illustration of these statements:

CASE.—Mrs. S., twenty-six years of age, emaciated and anæmic, consulted me for cardiac palpitation of eight months' standing. While the palpitation was constant, it would become aggravated on exertion or after a meal. The family history was negative. She had given birth to two children and had aborted once. Her menstrual periods were regular, free from pain and not particularly profuse. She had suffered from back-ache for years, but she paid no attention to it, as it caused her very little annoyance. Her appetite was not as good as she would have wished it to be, and she was afraid to eat because, after a meal, her heart would beat faster, and she would become dizzy and weak, necessitating her lying down. Her bowels were irregular and rather costive. Otherwise she had no pains or aches, and she felt that, if not for heart beating, she would be a perfectly healthy woman.

On physical examination I found, as stated before, that she was extremely emaciated, the conjunctivæ and the mucous membrane of the gums almost bloodless. There was nothing abnormal in the lungs. The præcordia presented nothing abnormal on inspection save the rapid impulse of the apex of the heart. No increase of relative cardiac dullness on percussion. On auscultation a very soft, hardly audible systolic murmur was heard at the apex. The abdomen presented on inspection a considerable depression in the epigastric region; the lower abdomen bulging forward and rounded; the abdominal walls soft and flabby. The greater curvature of the stomach was found to occupy a position about midway between the umbilicus and the symphysis pubis; the lesser curvature somewhat above the umbilicus. A splashing sound was easily elicited, the stomach containing considerable gas and fluid. There was no visible peristalsis of the stomach as is sometimes observed in severe gastropnoia. The liver was palpable somewhat below the costal margin, and the right kidney was freely movable. The deep reflexes were only slightly exaggerated. The pulse was small and rapid (120 per minute) and easily compressible. The urine presented no abnormalities. She had been under treatment since the beginning of her illness, having consulted more than a dozen physicians without getting any relief from her tachycardia. She was warned against undue exertion, as her heart, she was told, was in a very bad state. She had been fed on digitalis since the beginning of her illness without the least improvement.

As there was no hypertrophy or dilatation of her heart notwithstanding the duration of her illness, I did not take the murmur seriously, believing it to be hæmic in character. This subsequently proved to be erroneous. Convinced that there was nothing in the heart to cause tachycardia, I looked to the prolapsed stomach as a possible cause for it.

Accordingly I advised her to lose no time in securing an abdominal supporter and recommended her a diet, consisting mainly of solid food, small and frequent meals, and a very limited quantity of liquids. She did not leave the office without an improvised bandage which I applied, and she immediately expressed satisfaction at the relief the bandage afforded her. She could breathe more freely and felt much better generally. After a few minutes her pulse dropped to 90.

A week later, arrayed in a new bandage and a happy smile, she called at my office. Her pulse was perfectly normal and the murmur had entirely disappeared. It could not, then, have been a hæmic murmur, as it is hardly conceivable that the condition of her blood should have changed to such a degree in so short a time. The murmur was evidently dynamic in character caused by the rapid heart's action.

It is now six months since I first saw her, and she has not had another attack of tachycardia. She gained quite some in weight, and her general condition is excellent. The happy result in this case certainly justifies me in ascribing the tachycardia to the prolapsed stomach. It also appears reasonable to assume that the prolapsed stomach, dragging upon the vagi, interfered with their proper functioning, thus causing tachycardia.

841 LEXINGTON AVENUE.

SOME REMARKS ON TRAUMA OF THE ABDOMEN, WITH REPORT OF A CASE OF RUPTURE OF THE LIVER.*

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The favorable outcome of a case of rupture of the liver surgically treated seems sufficient occasion to warrant a brief consideration of some of the points in connection with trauma of the abdomen, and more particularly some of the features accompanying fracture of the liver. The treatment of subparietal injuries of the abdominal viscera, the diagnosis once made, is fairly well established, but the diagnosis is, however, often of difficult conclusion, and the indications for operative interference are by no means clear. The writer has had the privilege of observing a considerable number of cases of abdominal trauma, and has been struck with the vagaries in the symptomatology and with what logically follows, namely, difficulty in certain or exact diagnosis. With no symptoms or train of symptoms to guide to anything positive, it is fair to admit that exploratory laparotomy has been a frequent procedure in this class of cases under discussion.

The ætiology in these cases is varied, and involves on the part of the patient different states of rest or activity, and on the part of the vulnerating agent differences as to source and motility. On the part of the individual is to be considered the condition of the abdominal parietes, as to whether or not he be developed as to muscles, and whether or not the abdominal wall be padded with adipose tissue. It is important to consider whether the hollow viscera be full or empty, and whether the solid organs be congested or otherwise. Again whether the agent of trauma had been met with expectancy as evidenced by a voluntary contraction of the abdominal muscles. On the part of the vulnerating agent it is important to consider whether it be of slow moving energy or rapid; whether it be of the nature of crushing, as in the slow passage of a wheel over the abdomen, or whether it be a blow quickly delivered, as in the case of a kick by an animal. An abdominal wall which is muscular or padded with fat will, to a great degree, dissipate the force

* Read before the Hospital Graduates' Club of New York City October 25, 1906.

of the vulnerating agent with the result that the maximum of damage is done to the abdominal wall alone. However, with an agent of great weight and velocity this physical status of the individual is overwhelmed and cannot and does not serve to fully protect the contained viscera. While it must be admitted that some of these mechanical considerations may have but a theoretical basis and cannot always be applied at the bedside, still in doubtful cases with no definite symptomatology in evidence, they will serve as the only evidence for appropriate treatment. In children in whom the resisting powers are negative as far as the before mentioned physical condition of the abdominal wall is concerned, it will be found that a consideration of these mechanical principles forms the most important and sometimes the only suggestion towards surgical interference.

That the recognition of the true lesions after abdominal injury is a most difficult problem has already been indicated. The resulting symptoms may be at once so meagre or varied that no symptoms or group of symptoms are of avail in establishing a diagnosis in the majority of cases. Shock, in the usual conception of the term, may be present in various degrees of depth. It may on the other hand, be entirely absent. Shock is an elastic term and expresses nothing definite, since the individual susceptibility and resistance enter as important factors, making the measure of shock even, when present, an almost impossible working entity. In this connection is meant the initial shock of trauma. Closely allied to shock is the condition of internal hæmorrhage, the symptoms of which are difficult to distinguish from shock. In fact, the two conditions are one and the same thing, as far as the clinical picture is concerned, though different in ætiology; shock *per se* being brought about by a disturbance primarily of the nervous system, and hæmorrhage by a damage to some portion of the circulatory apparatus. In the case of shock, through paralysis of the vasomotor centres, the blood pressure is reduced, whereby the abdominal vessels are highly congested, together with a dilatation of the right heart, and in the case of hæmorrhage, it is reduced by an actual escape of the blood volume from the usual channels. The differentiation of the two conditions then may present no little difficulty. The degree of shock is not always commensurate with the injury inflicted. The following case illustrates an exhibition of but little shock from a combination of several injuries:

CASE I.—Y. G., age thirty-five, was admitted to the hospital on August 17, 1904. While lighting a fire with kerosine, her clothing caught fire, and in the excitement occasioned by the event she leaped from the fourth story of the tenement in which she lived. Examination of the patient after admission to the hospital revealed extensive burns of the back and upper extremities; there were also presumably internal injuries. The patient exhibited no shock and was comfortable, except for indefinite pains in the left hypochondrium. This pain was deeply situated and intensified with respirations and deep pressure. Taking into consideration the history of the injury and the presence of deep pain, laparotomy was decided upon, and there was disclosed a rupture of the spleen, together with a rent

about four inches in the diaphragm. There was a considerable amount of free blood in the peritoneal cavity.

The usual statement that severe shock follows injury to the diaphragm, especially in the cardiac region, was not corroborated in this case nor in the other cases of the same lesion that have been observed. In general it would seem from personal observation, that shock *per se* is not a constant feature in these cases of trauma of the abdomen. As a result of severe and progressive hæmorrhage a condition of shock may supervene, to which condition the term collapse is applied. In such cases, shock and internal hæmorrhage become synonymous. Examples of severe shock following trivial injuries are familiar occurrences and need not have special mention.

The symptoms of internal hæmorrhage exhibited by the rapid, small, soft pulse, increased sighing respirations, air hunger, anæmia, thirst, etc., present a very suggestive picture, and will suffice to warrant surgical action without the development of other signs. However, with hæmorrhage occurring slowly, the patient may show but little evidence of the same, until eventually when a quantity of blood has been lost with subsequent lowering of arterial tension, the more serious symptoms appear. A case recently coming under observation illustrates a slowly occurring hæmorrhage with no severe early symptoms of either shock or hæmorrhage. In addition it emphasizes the necessity of close observation in all cases in which there is definite history of severe trauma.

CASE II.—A boy, twelve years of age, was run over across the abdomen by a public carriage on September 5th of this year. He was taken to a hospital near the place of accident, but was refused admission, since his condition was not deemed of sufficient moment for observation or treatment. Twenty-four hours later when seen by a private physician his condition was such that his removal to the hospital was advised. On admission the boy showed so called moderate shock, with all the signs of internal hæmorrhage. His temperature was 101°, and the pulse ranged from 124 to 130. There was subjective pain just above the umbilicus. The abdomen was somewhat tympanitic, there was no rigidity or tenderness. The abdomen was opened in the middle line and the peritoneal cavity was found filled with blood, which was washed out with saline solution. Behind the peritonæum on the left side was marked hæmorrhage. Examination of the spleen showed it to be severely ruptured and its removal was decided upon. Further examination, however, revealed the remarkable fact that it was lying entirely severed from its vessels with no active hæmorrhage taking place. Clotting in the splenic vessels had evidently prevented further bleeding. The spleen was easily removed and gauze packing placed at its former position. It was impossible to recognize and ligate the splenic vessels. The boy never rallied and died the same evening. Had he been more closely observed following the accident, the necessity of intervention could have been appreciated earlier, with a good basis for favorable prognosis.

The symptoms of pain, tenderness, and muscular rigidity usually given as characteristic symptoms of these conditions are not absolute. The constant presence and association of these symptoms, as far as my own experience is concerned, is the exception rather than the rule, although on theoretical grounds they ought per-

haps to be present. Pain of a deep boring nature which radiates to the back, must, when present, be taken as a sign of some weight. Again, pain may be absent in cases presenting the most severe lesions, and its absence cannot be entirely explained by the association of shock which dulls the sensibilities. Pain when present may not offer assistance in the localization of the lesion, since it may be quite remote from it. As, for example, in a case of rupture of the bladder the pain, unaccompanied by rigidity, was located at and above the umbilicus. This remote pain was also observed in the case of rupture of the spleen cited in the previous case. Brewer states that in the absence of spontaneous pain, localized tenderness with rigidity are strongly suggestive of visceral injury. Pain, moreover, may be present in injuries limited to the abdominal wall; muscular rigidity and tenderness, likewise are not reliable, since they may be present in abdominal contusion alone. Progressive and increasing rigidity, if we have delayed too long for its development, is of moment. One symptom which has been of value is that of dullness which shifts with changes in position of the patient. With this symptom alone, laparotomy was done in one of my patients, other signs being lacking or indefinite. This sign, however, is not infallible, since the intestine, paralyzed by a severe crushing injury, will give a tympanic note even in the presence of hæmorrhage. Hiccoughing which might be expected in connection with ruptures of the diaphragm has not been present in any of the three patients observed. Other symptoms usually given as belonging to injuries of this kind are not early symptoms, but symptoms of peritonitis. If, therefore, we wait for a complete symptomatology we have waited too long. The symptomatology is, then, as I have briefly indicated, without definiteness, and the diagnosis is so often certain only by means of laparotomy which combines with its performance a certain means of recognition of the true lesion, and at the same time, an opportunity for appropriate and immediate treatment. Without further comment on the some time mooted question of exploratory laparotomy, the author would emphasize the statement that, laparotomy for exploration is as justifiable and scientific a procedure for the purpose of diagnosis as is the blood count or the employment of the aspirating needle. The trite mandate "when in doubt operate," has a most sound application in these cases, and the writer would therefore urge early laparotomy as a routine procedure in all cases of severe abdominal trauma where there exists any element of uncertainty.

The following case of rupture of the liver serves as an illustration of some of the foregoing points:

CASE III.—George M., age seven, was admitted to Gouverneur Hospital late in the afternoon of July 20, 1904, having been injured by the passage of a truck over his abdomen. At the time it was stated that the truck had passed over his abdomen from right to left in a direction from below upwards, from the right inguinal region to the epigastrium. On admission his temperature was 99° and his pulse from 124 to 130, small and weak. The respirations were shallow and increased. The skin was cold, moist, and pale; the features were pinched and anxious. The boy complained

of thirst, was restless and suffered from air hunger. Examination of urine and stools were negative. The abdomen was everywhere rigid, but there was no localized tenderness. There was shifting dullness in the flanks. The diagnosis of internal hæmorrhage presented no special difficulty, but what viscus had been injured was difficult to say. The boy was seen about two hours after the injury and after a hasty preparation, under chloroform anæsthesia, an incision was made in the median line. Profuse hæmorrhage had filled the abdominal cavity and incision of the peritonæum liberated large quantities of fluid blood and clots. The abdomen was flushed with large quantities of saline solution and a marked improvement of the pulse was noted. Further exploration revealed a tear in the visceral surface of the right lobe of the liver, nearly bisecting it. The gap was rapidly and tightly packed with strip gauze and the peritoneal cavity cleansed of the remaining blood and clots. The abdominal wound was closed with tier sutures, except for a small interval above, which allowed protrusion of the gauze. The boy was removed from the operating room in fair condition and with appropriate medication by the next day was progressing favorably. Improvement continued, and on the fourth day the temperature was normal. The pulse was still somewhat rapid, but of good quality. By a misunderstanding of orders the packing under chloroform anæsthesia was removed at the end of the fourth day. Following this procedure the child became restless and extremities were cold. Pulse was small and weak. Patient responded somewhat to external heat, though restless all night. Temperature on fifth day was 102°, and on the sixth 104°. Then by gradual decline at the end of sixteen days it was normal. On the fifteenth day repair was made of the abdominal wound, which had partially opened. For several weeks there issued from a small sinus at the upper angle of the wound a liberal amount of fluid which for the most part had the characteristics of bile. The subsequent history was uneventful. The boy made a slow but satisfactory recovery.

A few words concerning rupture of the liver may not be out of place at this time. Not many years ago, wounds of the liver were considered uniformly fatal and were left to an uncertain fate with the expectation that something might happen. The early statistics of Edler confront us with a mortality of eighty-five per cent. in complicated cases and of seventy-eight per cent. in uncomplicated cases. The more recent statistics of Douglas, of New York, who has collected forty-nine cases with a recovery of 47.8 per cent. in complicated and of 58.6 per cent. in uncomplicated cases bespeak a more hopeful attitude. The remarkable increase in recoveries has but one explanation, and that is that operations are now undertaken earlier, and that laparotomy is not done as a last resort, but as a first step in the treatment, or what amounts to the same thing, as a means to diagnosis when that diagnosis is uncertain.

The treatment of rupture of the liver in the main resolves itself into the treatment of the hæmorrhage itself. Three methods for the control of liver hæmorrhage invite our attention—the cautery, suture, and packing. The cautery is perhaps of some service when the smaller vessels are injured; in other words, where the convex surface is damaged and the wound is of easy access. The objection to the cautery is that by its use, more or less tissue is destroyed and this must separate before healing can take place. This

necrosed tissue, besides, is a favorable nidus for the development of septic infection. Again, the cautery is unsafe, for when the necrotic mass separates there is great danger of secondary hæmorrhage.

Suture can be employed in superficial lacerations, but in deep wounds where close approximation is essential for repair, it would seem that it is of less value. The further objection that can be urged against its employment is that deep suture is difficult to accomplish besides consuming much time. In children the liver is particularly friable, and suture in all events can be of but little service.

Packing ought to be the method of choice if for no other reason than that it is most easily and readily applied. Tamponade properly applied leaves no fear of secondary hæmorrhage. The only objection to packing that can be raised is the observation that with the withdrawal of the gauze, there is apt to be bleeding. This is no valid objection to the tamponade *per se*, since hæmorrhage will only result when the gauze is removed too early. In any case where packing is employed, Nature immediately throws out ramifications of tissue in the meshes of the gauze and ensnares it more or less tightly. If, when the process is at its height the gauze be forcibly removed, then hæmorrhage certainly will result from the fact that the new formation has been forcibly torn asunder. However, if the gauze be left until the further process of liquefaction takes place, that is, when Nature has no further use for its services, the gauze will easily come away without unfavorable signs.

The following conclusions are based on my remarks:

1. The diagnosis of traumatic lesions of the abdomen is most difficult.
2. The signs and symptoms are variable in their exhibition and admit of no classification.
3. When there is an element of doubt in diagnosis laparotomy is indicated.
4. History and nature of injury may be the only indications for operation.
5. Early laparotomy will improve the percentage of recoveries.
6. Laparotomy as a means of diagnosis is without danger.
7. Tamponade is the best treatment for hæmorrhage in ruptures of the liver.

To Dr. Erdmann, Dr. Kelly, and Dr. Ladinski of the visiting staff, I desire to express my thanks and appreciation for the privilege of operating on these cases and presenting them for publication.

104 EAST THIRTY-FIRST STREET.

THE OCULAR COMPLICATIONS OF MUMPS.

By J. H. WOODWARD, B. S., M. D.,
New York.

A case of unilateral (left) optic neuroretinitis due to infectious arthritis in a girl, eleven years of age, resulting in blindness of the affected eye. Enucleation of the eyeball three and one half years later for proptosis caused by anterior staphyloma. [Report on the pathological condition of the specimen by Dr. F. E. Sondern.]

In the *New York Medical Journal* of January 2, 1904, the reader will find a detailed account of this case from its onset in February, 1902, until July 16, 1903. The completed history of it continues as follows:

On July 13, 1904, Dr. Eddy, in a personal interview, stated that the patient was in good condition.

On July 7, 1905, I saw the patient for the first time in two years. She had had only two attacks of pain in her diseased eye in the two years, which were preceded by a feeling of a "lump in her stomach." In March, 1905, she had had a toothache, and her left eye became red and painful for a day or two. At the present time she has no pain in her eyes or head. During the past week she has had some vertigo, when she holds her head forward. The left eye becomes suffused sometimes, but not as it previously did. Divergence of the left eye was marked. There was a marked anterior staphyloma, causing the eyeball to protrude between the eyelids in a disfiguring manner. The pigmentation of the uveal tract was visible through the stretched sclera in a number of places in the circumcorneal region beneath the upper eyelid. Nevertheless, the eyelids closed readily over the enlarged globe. There was neither congestion, nor tenderness, nor pain about the diseased eye, nor had there been during the preceding two years, excepting as noted.

I advised enucleation and possibly evisceration of the orbit. It was not possible to state positively that malignant degeneration had not begun within the eyeball. The probabilities, however, were strongly against that supposition, for there was no history of prolonged pain, the intraocular tension, although greater than normal, was not high, the proptosis was evidently not due to an increase in the contents of the orbit behind the eyeball, the development of the anterior staphyloma had been very slow (one year), and the general health of the patient was and had been, with the exception only of acute illnesses, excellent. There was some swelling of the right optic disc at the upper and lower borders. The vessels of the right fundus were tortuous, but the function of the eye was not affected; vision was normal.

Owing to other engagements, I could not continue the treatment of this patient, and the eye was enucleated by another surgeon in August, 1905. I am much indebted to Dr. M. H. Eddy for the privilege of securing a pathological examination of the specimen—the only one ever reported in a case of this nature.

Report of the Pathological Examination by Dr. F. E. Sondern, May 21, 1906.

"Cornea: In fairly good condition. The epithelium is intact.

"Bowman's Membrane: Is intact and well marked.

"Descemet's Membrane: Is intact and well marked.

"Cornea Propria: Has the appearance of having presented slight opacities.

"Iris: Presents quite a large amount of pigment, and is atrophied. There is an anterior synechia, with fusion a distance one and one half millimetres from the angle.

"Fontana's Spaces: Obliterated.

"Schlemm's Canal: Obliterated.

"Posterior Chamber: Greatly deepened, the anterior segment of the globe having been pushed forward.

"Lens: Is in a condition of cortical cataract.

"Ciliary Body and Processes: Atrophied.

"Retina: The inner layers appear to have taken on a connective tissue proliferation, and in some portions this tissue takes on a hyaloid form, especially in the neighborhood of what appears to have been vessels which it appears to have obliterated. The remainder of the retina is completely disorganized. The external limiting membrane can be seen, but the rods and cones have entirely disappeared.

"Chorioid: Has in some places apparently fused with the sclera where it has disorganized. In other places it is apparently free and engorged with blood.

"Sclera: Appears to be normal.

"Optic Nerve: Section of the optic nerve shows complete atrophy of the nerve fibres, which have been replaced by a very dense hyaline connective tissue. There is an extensive obliteration of the small vessels in the sheath of the nerve. The obliterated vessels appear as hyaline islands. There is considerable pigment, light brown, and black, scattered through the tissue replacing the nerve, near its entrance to the sclera."

Although carefully searched for, no evidence whatever of malignant disease was found. The case was one of proliferating neuroretinitis due to mumps. The proptosis was a consequence of the increased intraocular tension from secondary glaucoma produced by obliteration of Fontana's spaces and Schlemm's canal.

58 WEST FORTIETH STREET.

Therapeutical Notes.

A Contribution to the Therapy of Lichen Ruber Planus.—In lichen planus verrucosus of the legs when associated with varices, Seifurt recommends the following treatment: First wash the leg, then paint on zinci oxidi, gelatine aa 25 parts, glycerin, aq. destil. aa 50 parts. Over this lay a thin sheet of cotton, bandage with a broad, moist gauze bandage, paint a second time, and then do the whole up in a dry bandage. The patient can then dress and go about. In one case the dressing was allowed to remain for two weeks, when it was removed and another applied which was not disturbed for six weeks. The patients also received asiatic pills in increasing doses. Seifurt claims good results from this method, which he attributes to the protection afforded from mechanical injury and to the diminution of the circulatory disturbances. He also used the zinc gelatine paste with good results on the body to protect the part from the rubbing of the clothing and from scratching.—*Archiv für Dermatologie und Syphilis*, through *The Journal of Cutaneous Disease*.

Treatment of Hyperacidity of the Stomach by Alkalies. Bardet (*Bulletin général de thérapeutique*, December 15, 1906) calls attention to the effects of increased hydrochloric acid secretion in the stomach, and to the rational treatment of this condition by alkalies to the point of saturation. Under ordinary conditions, the acidity of the gastric juice is exactly saturated by the albumins in order to form acid albumins which subsequently form syntonins, albumoses, etc. If the function should become perverted, as the result of some irritation of the nervous system, the quantity of free hydrochloric acid will be greatly increased, say from three to ten times the normal proportion (0.50 to 0.75 gramme per litre). As a result, the albuminoids of the food are unable to saturate this quantity, and the alimentary mass remains acid. In consequence of this increased acid reaction, there is great irritation of the gastric mucosa, which provokes renewed secretion up to exhaustion of the glands. But in addition to this,

there are exaggerated contractions of the musculature; notably of the fibres of the pyloric sphincter, which remains closed. As the food is retained unduly in the stomach it undergoes acetic fermentation, and the acids of fermentation (lactic, butyric, etc.) go to increase the total acidity. Bardet directs attention to the important fact that if the alimentary mass preserves its acid reaction after entering the duodenum, it may give rise not only to enterocolitis, but also to appendicitis. He asserts that the origin of the latter disease is almost always gastric and dyspeptic. On this account, it is important that this condition of hyperacidity and fermentation of food should not be neglected. It is a noteworthy fact that one of the symptoms of hyperchlorhydria is constant hunger, or an uneasy sensation in the stomach, which is temporarily relieved by food. This, however, should be regulated by the physician, and the patient should be told to limit his food to the actual needs of his system, as excess increases the difficulty, and will bring on attacks of pain. Relief can be given by the use of alkalies to the point of saturation. The powders of Robin are effective for this purpose, they are of two kinds, one to be taken at once after a meal, the other several hours later, as occasion may arise:

I.

R Sodii bicarbonatis, 4 grammes;
Magnesiæ (hydratis), 4 grammes;
Calcii carbonatis (præcipitat), 6 grammes;
Sacchari lactis, 6 grammes.

M. Ft. chartæ in No. 10.

Take one powder immediately after each meal with a little water. The dose may be increased, or diminished, according to the case.

II.

R Magnesiæ hydratis, 1.60 grammes;
Calcii carbonatis præcipitat, 0.80 gramme;
Bismuthi subnitratis, 0.80 gramme;
Sodii bicarbonatis, 1 gramme;
Sacchari lactis, 2 grammes;
Codeinæ, 0.005 gramme.

M. Ft. charta No. 1.

Take in a little water at the time of the attack of pain, several hours after a meal.

Prompt Relief to Pruritus and Chronic Icterus, Following Incomplete Laparotomy.—Le Gendre (*Le Bulletin médicale*, December 8, 1906) reported an interesting case of alcoholic cirrhosis, the patient having been operated upon three years previously by omentopery (Talma's operation), but without any apparent benefit or effect upon the disease. The patient had chronic icterus, with atrocious pruritus, due to polycholia, which had been found to be unrelieved and rebellious to all medical treatment. An operation was considered justifiable, having for its object a permanent drainage of the gallbladder to overcome the hypercholelæmia. Upon attempting the operation an immense network of enlarged vessels was encountered in the wall of the abdomen, which produced so much hæmorrhage that the operation was abandoned and the wound closed. The patient was much depressed for several days and required several injections of artificial serum, but at length began to improve in the course of two weeks. It was observed, however, to the surprise of all that the pruritus had entirely vanished, and

from this time on the jaundice progressively diminished, until it had disappeared entirely at the end of five months. The reporter rejected the idea that this jaundice of three years' standing had disappeared simply as a coincidence, or even as the psychical effect of the operation. He thought that it might be explained by the decided loss of blood, which energetically modified the circulatory conditions within the liver, so as to reduce the pressure on the biliary canaliculi. Whether the relief will be permanent or not the future must decide, but the present relief is undeniable.

Treatment of Malignant Pustule.—Aubry (*Gazette médicale de Nantes*, December 8, 1906) reports the successful treatment of a man, twenty-one years of age, suffering with a large malignant pustule upon his forehead. He was a drover, and also handled the skins of dead oxen. He could give no definite history of infection by abrasion, or bite of a fly, but considered the former theory possible. The treatment adopted was destruction of the central patch by the galvanocautery, and in the zone of œdema all around the pustule a double line of injections were given of tincture of iodine (one per cent.). The injections were made very close together, as recommended by Verneuil, so as to sterilize the liquid, which infiltrated the skin and subcutaneous cellular tissue. The kind of dressing used is not stated. The following afternoon the patient went out of the hospital, with the œdema and redness slightly reduced. Gradually all the symptoms disappeared, and a month later he was able to go back to his work. A light, depressed cicatrix marked the location of the former pustule. In concluding the clinical report a reference was made to serum therapy. The discoveries of Pasteur and Chamberland of an anticharbon vaccine, and later of Marchoux, who prepared a serum, have thus far only been utilized for the lower animals. But in Italy for several years a preventive and curative serum has been in use, both in the lower animals and in man. It was discovered by Professor Scavo, and is obtained by injecting cultures of attenuated bacteria into an ass, so as to produce immunity, and using his blood as a source of the serum. In a report published in 1904, Scavo mentioned 164 cases of charbon treated in this way in the human subject, with only ten deaths (or 6 per cent.). This compares favorably with the usual mortality from malignant carbuncle in Italy (which is 24.1 per cent.). Sobernheim, in Germany, has also discovered an anticharbon serum obtained by a mixed method, in which the injection of serum (coming from a sheep) is associated with the inoculation of attenuated cultures of bacteria. Cases of this kind are very rare in France (in the general hospital during the last ten years only three cases had been received), so that sufficient opportunities for testing this serum treatment are lacking.

Radiotherapy for Prostatic Hypertrophy.—Tausard and Fleig (*Annales des maladies des organes génitourinaires*, December 15, 1906) discuss the surgical treatment of hypertrophy of the prostate, and report two cases in which irradiation

was resorted to by them in order to induce atrophy. In one case, a good result was obtained, and this has continued for a year while under observation; in the other, the patient had only received four irradiations, but the amelioration was incontestable. Carabelli and Luraschi (*Gazetta degli ospedali*, No. 73, 1905) were the first to apply the Röntgen rays in this disease (in May, 1904), and they succeeded in obtaining permanent good results. The perineal method was adopted by the introducers, but Moskowicz, in 1905, modified in technics by using a rectal speculum. He likewise reported that the x rays caused softening of the prostatic growth, followed by reduction in volume with the progressive reestablishment of control over micturition. The method pursued by Tausard and Fleig in the two cases reported was the perineal. The apparatus was quite simple. It consisted of an ordinary table covered with a mattress, upon which the patient was directed to lie upon his side, with his legs and thighs strongly flexed. The tube was enclosed in a localizer, in which was inserted a cylinder of lead glass (which is impermeable to the Röntgen rays), so that the action would be limited to a spot about five centimetres in diameter. The extremity of the cylinder was directed against the middle portion of the perinæum. The rays employed were rather penetrating, and marked 7 on Benoist's radiochromometer. The exposures were made at intervals of one or two weeks, commencing with two Holzknicht units, and gradually increasing to four or five. One application of six units was followed by radiodermatitis, which, however, promptly yielded to compresses of alum (1 per cent.) and cessation of treatment, which was subsequently resumed two months later. The entire duration of treatment extended from November 8, 1905, to July 18, 1906, and consisted of thirteen séances. At this period the prostate by rectal examination was found to be only slightly prominent, and there was no residual urine left after micturition. The condition of the patient when seen three months later continued to be very satisfactory. The authors submit the following conclusions drawn from their experience: Hypertrophy of the prostate is very clearly ameliorated by radiotherapy, by atrophy of the gland. The perineal route, which is preferred, being rather sensitive, the x rays should be very carefully applied. They should not go beyond five units of Holzknicht, the rays marking 7 on Benoist's radiochromometer. The treatment should be somewhat protracted, rejecting massive doses at short intervals in favor of irradiations of median intensity at intervals of fifteen or twenty days. These are to be continued until there is a complete disappearance of physical and functional disorders. Radiotherapy appears to be particularly indicated (1) in those prostatists who have not yet arrived at the period of retention; (2) in young subjects; (3) in those who have retention, and can only urinate through the catheter and who, owing to the social position, are not obliged to obtain a rapid cure; (4) in cases in which the bladder is infected; (5) in very old subjects; and (6) in cases complicated with renal disease.

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THE NEW MEAT INSPECTION LAW.

The new Federal meat inspection law is spoken of as "drastic" even by persons who are in some way concerned in its execution, but its essential justice cannot be questioned. It is highly satisfactory to be able to say that its enforcement is rigid and that the cooperation of the great packing concerns is earnest and sincere, as we are assured by Mr. George P. McCabe, solicitor for the Department of Agriculture, in an address delivered on December 18th before the New York State Breeders' Association and published as *Circular No. 101* of the Bureau of Animal Industry. In no other way, so far as we know, can the citizen inform himself of the general purport of the law, of the character of its administration, and of its manifest salutary effects so readily as by studying Mr. McCabe's printed address.

Such a law strictly applies, of course, only to such meat products as are destined for markets outside the States in which they are prepared. But, though it cannot be enforced directly in the case of products to be consumed in the State in which they are turned out, its indirect effect must be great even on the preparation of meat products for home consumption. In so far as this presumed indirect effect may prove to be insufficient, it will have to be supplemented by State laws and by incessant activity on the part of local boards of health. Such laws and such activity, we believe, will be forthcoming in States in which they may not now exist.

The Federal law is doubly a measure of self protection; it tends to preserve the health of our own people, and it will in all probability soon revive the enormous foreign demand for our manufactured meat products that existed prior to the revelations which led to its enactment. It is practically that demand alone which has been seriously impaired; our fresh meats are still acceptable abroad. It is highly probable that, as a result of the adoption and enforcement of the law, we have now a purer supply of meat products in the United States than is to be found in most other countries comparable to our own in size and population. It was naturally looked upon as a great sacrifice to subject gigantic business enterprises to the operation of such a law, but we have not the slightest doubt that the wisdom of the measure will speedily become plain to everybody.

THE SIXTH INTERNATIONAL DERMATOLOGICAL CONGRESS.

The year 1907 seems destined to witness rather unusual activity in dermatology in this country so far as meetings on a large scale are concerned. The American Dermatological Association will hold its usual annual meeting, and later in the year, in September, the Sixth International Dermatological Congress will convene in New York. The previous congresses have been held in Paris, Vienna, London, and Berlin (two of them in Paris). The president of the congress is the veteran Dr. James C. White, of Boston, and the organization committee numbers among its members well known dermatologists representing New York, Chicago, Philadelphia, Boston, Baltimore, Montreal, Cleveland, New Orleans, St. Louis, Buffalo, San Francisco, and Detroit. The secretary general is Dr. John A. Fordyce, of New York.

We learn that the full programme is not to be expected before June, but in a preliminary announcement the main themes for formal consideration are set down as the ætiological relationship of organisms found in the skin in exanthemata, tropical diseases of the skin, the possibility of immunization against syphilis, and the present status of our knowledge of the parasitology of syphilis. It will be seen that all these topics have an intimate bearing upon some of the major problems of public sanitation, so that their discussion cannot fail to be of interest to the community at large. The prominence of syphilis among them is noticeable. This is doubtless owing in great measure to the great amount of attention now given to the *Spirochæta pallida*, but syphilography is in general so blended with the study of skin diseases that practically it cannot with

advantage be ignored by the pure dermatologist, if there is such a person. Then, too, the exanthemata bind dermatology intimately with general pathology. By reason of such considerations as these, the work of the dermatologists is always of interest far beyond their own pale.

During the last forty years or more dermatology and syphilography have borne a notable part in the general advance of medicine and surgery, and in themselves they supply a field for the study of almost the entire range of pathology. The Sixth International Dermatological Congress will doubtless meet with general attention on the part of the profession, and we are glad that it is to be held in New York. Among the distinguished foreign physicians who are expected to take part in it we may mention Dr. H. Radcliffe-Crocker, of London, Dr. L. E. Leredde, of Paris, Dr. Erich Hoffmann and Dr. A. Buschke, of Berlin, Dr. G. Riehl and Dr. E. Finger, of Vienna, Dr. T. de Amicis, of Naples, Dr. A. Neisser, of Breslau, Dr. K. Herxheimer, of Frankfort, Dr. Dubreuil, of Bordeaux, and Dr. B. Sommer, of Buenos Ayres.

THE SURGICAL TREATMENT OF CEREBRAL BIRTH PALSIES.

In spite of a keener knowledge in operative technique, the surgery of the central and peripheral nervous system, leaves much to be desired in point of actual results. The treatment of peripheral palsies by nerve anastomosis is still on active trial. The return of coordinated muscular control in cases of facial palsy after faciohypoglossal anastomosis is imperfect, and the present condition demands a more accurate recognition of the difficulties involved and a close adjustment of the operative treatment to these defects. The surgical treatment of poliomyelitis along the same lines is even more uncertain in results.

Cranial "decompression" in cerebral tumor too often fails to relieve the damaged structure and prevent or lessen the growth of a tumor, but frequently induces additional palsies. Whether "decompression" is brought about too rapidly in these cases, whether the vulnerable cortex impinges, on account of œdematous swelling, against the bony margin of the cranial opening, it is quite patent from a practical point of view that the opening in the skull needs to be larger than it is ordinarily made. Otherwise the very short period of temporary relief makes the operation seem hardly worth while.

Notwithstanding the fact that these newer attempts in neurological surgery possess not a few technical faults, they mark a decided advance in

relief surgery for paralytic nervous disease. It is but natural, therefore, to extend surgical intervention to the relief of those spastic palsies induced by meningeal hæmorrhage at birth. The hopelessness of the present treatment of the cerebral birth palsies is well known, and we should, therefore, consider carefully the operation of cranial section and the removal of clots. During the past three years Cushing has operated in eight extremely severe cases. In half of these he has obtained fairly satisfactory results, and the children appear to be developing along normal physical and mental lines. In view of the immense practical importance of the subject, we urge special attention to Dr. Atwood's review of this work in the present issue of the *Journal*. The obstetrician, neurologist, and surgeon should be equally interested in the operation and its results. Certainly any plan of surgical intervention that promises so well as Cushing's reports indicate deserves earnest consideration and a more extended trial.

EXPERIMENTAL ANÆMIAS IN THE RABBIT.

Our knowledge of the pathogenesis of the anæmias is not satisfactory. We know that as a consequence of certain exhausting diseases, such as sarcoma and prolonged suppuration, we observe anæmia of a certain type. We know that after certain other conditions, such as bothriocephalus infection and ankylostomiasis, we observe anæmia of a certain other type. Furthermore, we meet with an anæmia of this second type without known cause. In certain instances we find an increase of leucocytes in the peripheral blood which is of a particular character, and we denominate such a condition leucæmia. But the reason why we meet with these clinical entities is not known. We do not know what there is about a malignant tumor which causes chloroanæmia; neither do we know why a pernicious type of anæmia is produced by *Bothriocephalus latus*, why a patient has leucæmia.

The recent observations of Bunting (*Journal of Experimental Medicine*, October), while they do not demonstrate the causes of these conditions, are interesting because they appear to point the line along which work may proceed to a definite conclusion. In a former paper (*University of Pennsylvania Medical Bulletin*, July and August, 1903) Bunting published his conception of the red marrow as consisting essentially of a patchwork of cells arranged in groups or proliferating centres. Certain groups are composed of indifferent myeloblasts at the centre, which are surrounded by layers of transitional cells, and at the

periphery mature polymorphonuclear leucocytes are found. In other groups the central myeloblasts are surrounded by successive layers composed of megaloblasts, intermediate red cells, normoblasts, and mature erythrocytes. In still other groups the proliferation of the indifferent myeloblasts produces lymphoid cells.

With this conception of the histology of the red marrow of the rabbit, Bunting has essayed the production of various anæmias by intravenous and intraperitoneal injections of ricin and aleuronat. From his experiments he concludes that nucleated red cell crises in the circulating blood are the expression of injury to the bone marrow. The bone marrow reacts with nucleated cells only when the mature erythrocytes at the periphery of the erythrogenic centres are destroyed by the action of a circulating toxine or are depleted by excessive hæmorrhage. Following the destruction of the peripheral cells in the erythrogenic groups, pathological forms are passed into the circulating blood. The macrocyte is the most characteristic of these, and it appears to be formed from the megaloblast without orderly transmission through the intermediate and normoblastic stages. After extensive injury to the marrow, one may find the groups of blood forming cells almost completely replaced by scar tissue. The spleen may then take on a hæmatopoietic function. The subcutaneous injection of hæmolytic toxins results in such slow absorption that the circulating cells saturate the toxine so that it does not reach the marrow in sufficient quantity to produce injury. Under such a condition nucleated red cell crises occur and the marrow becomes hyperplastic.

COORDINATION OF RESEARCH IN EPILEPSY.

Although a closer interdependence of research workers is a new feature in modern medicine, the movement has its precedent and parallel in the aggressive commercialism of the day. This closer union of medical workers not only promotes mutual helpfulness in permitting of a more detailed specialization in research, but it generates new lines of inquiry and thought which are of the greatest practical importance. The idea is well illustrated in the happy results now accruing in the coordination of the scientific work of certain State hospitals for the insane in a central laboratory school. The admirable work in New York State is an instance in point. And this coordinating influence is not destined to end here.

At the recent meeting of the National Association for the Study of Epilepsy, in New Haven, an earnest discussion was opened by Dr. Clark, Dr.

Bailey, and Dr. Spratling in reference to devising some means to make research work in epilepsy more effective. The establishment of a permanent advisory scientific committee for all the colonies was urged. It was also suggested that the desirability of founding a laboratory school be agitated, to the end that students in epileptology may be properly trained for their future work.

No doubt the general provision of special institutions for the epileptic has advanced the interest and importance of this specialty very materially, and it is equally certain that pathfinders seeking the cause of epilepsy must be recruited from the resident investigators in the colonies. The future outlook for the betterment and care of the epileptic rests largely in the hands of these workers. To meet the task which lies before these students of epilepsy, living as they do in such isolation from the rest of the research world, a much closer scientific association of the clinical workers in the several States ought to be brought about. The proposed scientific committee of the national society would strive to meet this want. The committee would formulate new research studies, assist in those already undertaken, and coordinate the research of all work in this field here and abroad.

However, to give this suggestive encouragement proper staying quality, there ought to be a central laboratory school to teach the fundamentals to the colony assistants. The medical staff is now largely drawn from our insane asylum service. While the deliria, manias, dementias, and disorders of consciousness in epilepsy are eminently psychiatric problems, the explosive and exhaustive symptoms render the disease almost an experimental one, a study of which has enabled Jackson and others to advance our anatomical and physiological knowledge wonderfully all over the broad field of neurology. If a laboratory school is established, we trust it will be in one of the large cities, where libraries and clinics are of easy access. Philanthropic endowments for such institutions of teaching and research in epilepsy, unfortunately, do not at present exist. This is the more noteworthy in view of the distressing prevalence of epilepsy.

PERCUSSION OF THE VERTEBRAL COLUMN.

The scope of percussion as an aid in diagnosis has been notably widened of late years. The most recent instance of its enlargement that has come to our notice is its extension to the vertebral column, proposed by Korányi (*Zeitschrift für klinische Medizin*, lx, 3, 4; *Berliner klinische Wochenschrift*, November 26th). He divides the verte-

bral column into five portions, each of which, he says, has its own distinctive percussion note under normal conditions. The first is made up of the cervical vertebræ, the second of the upper third of the dorsal vertebræ, the third of the lower two thirds of the dorsal vertebræ,¹ the fourth of the lumbar vertebræ, and the fifth of the sacrum.

He uses a round plessimeter, which is applied to the spinous process of a vertebra. The percussion note elicited depends on the anatomical condition of the organ lying in front of the body of the vertebra, and may be quite different from that brought out by percussing an intercostal space or the abdominal wall. In some cases, the author thinks, an altered vertebral percussion sound may be the only physical sign of disease. Of course the vertebræ themselves must be in a normal condition.

News Items

NEW YORK CITY AND STATE.

The Medical Society of the State of New York will hold its one hundred and first annual meeting at Albany, on Tuesday, Wednesday, and Thursday, January 29th, 30th, and 31st, under the presidency of Dr. Joseph D. Bryant.

The Harvey Society Lectures.—The seventh lecture in the Harvey Society course will be delivered at the New York Academy of Medicine, on Saturday evening, January 26th, by Professor E. B. Wilson. Subject: Recent Studies in Heredity.

The Alumnae Association of the New York Medical College and Hospital for Women.—The following papers were presented at the bi-monthly meeting of this society, held on Wednesday, January 16th: Septicæmia Following La Grippe, by Dr. Sarah D. Smalley, Newark, N. J.; Errors in Diagnosis, by Dr. Elizabeth R. Cahoon, New York.

The Medical Society of the County of Lewis, N. Y.—The annual meeting of this society was held at Lowville, on Tuesday, January 8th. The election of officers resulted as follows: President, Dr. F. E. Jones, of Beaver Falls; vice-president, Dr. O. G. Harrington, of Constableville; secretary, Dr. H. A. Pawling, of Lowville; treasurer, Dr. I. D. Spencer, of Croghan; delegate to the House of Delegates, Dr. P. H. von Zierolschofer.

Personal.—Dr. J. F. Buckley has been appointed health officer of the city of Kingston, N. Y., to succeed Dr. J. J. Wolf, whose term of office has expired. At the annual meeting of the board of directors of the Benedictine Sanitarium, held at Kingston, on Saturday, January 12th, Dr. Charles Phelps, of New York, was unanimously reelected president, Dr. R. R. Thompson was reelected secretary, and Dr. Mary Gage-Day, assistant secretary.

Dr. Henry Clarke Coe has been appointed consulting surgeon to the Women's Hospital in the State of New York.

The Medical Society of the County of Oneida, N. Y.—The following programme was announced for the annual meeting of this society, held at Utica, on Tuesday, January 8th: A Discussion of Laboratory Aids in Gastrointestinal Diagnosis, by Dr. W. S. Nelson; Oxaluria, by Dr. William J. Schuyler; Acute Fibrinous Bronchitis, by Dr. Raymond L. Baker; Water and Its Purification, by Dr. C. B. Tefft. The following officers were elected: President, Dr. Conway A. Frost; vice-president, Dr. G. M. Fisher; secretary, Dr. W. B. Roemer; treasurer, Dr. E. D. Fuller; censors, Dr.

¹ Here we have taken a little liberty with the *Berliner Wochenschrift's* text. The clause in that journal reads: "Die zweite das oberste Viertel der Brustwirbelsäule, die dritte die unteren ^{zwei} derselben." We suppose that, instead of "Viertel," the writer meant to say *Drittel*, for one quarter and two thirds do not make a whole, but in this case leaves one bone unaccounted for.

C. E. Smith, Dr. F. H. Brewer, Dr. F. J. Douglas, Dr. T. H. Merrill, and Dr. Smith.

The Medical Association of the Greater City of New York has elected its president for the coming year. The annual meeting of the association will be held at the New York Academy of Medicine on February 14th.

council, the corresponding and statistical secretary, and the treasurer; report of the committee on the death of Dr. Glover C. Arnold, Dr. Andrew H. Smith, chairman; report of the committee on the death of Dr. Alexander E. Macdonald, Dr. Adolf Meyer, chairman; Experimental Arteriosclerosis, Dr. Oscar Klotz. Pathologist to the Royal Victoria Hospital, Montreal, Canada; Some Diagnostic Features of Arteriosclerosis in Clinical Medicine, Dr. Louis Faugères Bishop; On Arteriosclerosis in Diseases of the Nervous System, Dr. Edward D. Fisher; Visceral Arteriosclerosis, Dr. Harlow Brooks; Arteriosclerosis in Diseases of the Eye, Dr. Willbur B. Marple; On the Prophylaxis and Treatment of Arteriosclerosis, Dr. Glentworth R. Butler; discussion by Dr. Isaac Adler, Dr. Carl Beck, and Dr. J. Edward Stubbart.

The Psychiatrial Society of New York has arranged for a series of four lectures on problems of insanity, to be held under the auspices of the Academy of Medicine at 17 West Forty-third Street, on Saturdays, January 19, February 2, February 16, and March 2, 1907, at 8:30 p. m. The purpose of these lectures is to put within the reach of the medical profession and also of the nonprofessional leaders of sociological interest a programme of work and facts for orientation, with a view to the organization of a movement toward prophylaxis and the development of sound interests in this eminently important topic. The first lecture will be given by Dr. Adolf Meyer, on *Modern Psychiatry, Its Possibilities and Opportunities*; the second lecture, by Dr. August Hoch, discusses the *Manageable Causes of Insanity, Exclusive of Heredity*; the third lecture by Dr. C. L. Dana, *The Data of Heredity and Their Application in Psychiatry*; and the fourth lecture by Dr. Allan McLane Hamilton, *The Development of the Legal Regulations Concerning the Insane*. The medical profession and nonmedical persons interested in a movement toward prophylaxis and the best management of mental disorders are cordially invited.

The Section in Ophthalmology of the New York Academy of Medicine.—The following order will be presented at a meeting to be held on Monday evening, January 21st: Presentation of Specimens; presentation of Instruments; presentation of Patients. Papers: (a) Exclusion Cysts of the Conjunctiva, by Dr. E. L. Oatman; (b) What Stage in the Development of Cataract, Particularly of Senile Cataract, Is Not Suitable for Its Removal by Extraction? by Dr. John E. Weeks.

The *Section in Laryngology and Rhinology* will hold a meeting on Wednesday evening, January 23rd, with the following order: Presentation of Patients; (a) Congenital Closure of the Choanæ, by Dr. F. C. Ard; (b) Primary Tumor of the Trachea. Extirpation, by Dr. C. A. Elsberg; (c) Complete Removal of the Thyroid Gland, by Dr. E. V. Hubbard. Papers: (a) A New Method of Operating Upon Turbinal Hypertrophies, With a Demonstration of Instruments, and of the Technics on a Manikin, by Dr. Sidney Yankauer; discussion by Dr. Emil Mayer; (b) Bronchoscopy, Esophagoscopy, and Gastroscopy. With Reports of Cases, by Dr. Chevalier Jackson, Pittsburgh; discussion by Dr. A. Coolidge, of Boston; Dr. Charles A. Elsberg, Dr. Max Einhorn, Dr. W. Van Valzah Hayes, Dr. Emil Mayer, Dr. Beaman Douglass, and others; Exhibition of Specimens and New Instruments; Trophies Gathered From Bronchia, by Dr. Emil Mayer.

Society Meetings for the Coming Week:

MONDAY, January 21st.—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York (annual); Hartford, Conn., Medical Society.

TUESDAY, January 22nd.—New York Dermatological Society; Buffalo Academy of Medicine (Section in Obstetrics and Gynecology).

WEDNESDAY, January 23rd.—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society.

THURSDAY, January 24th.—New York Academy of Medicine.

cine (Section in Obstetrics and Gynecology); Brooklyn Pathological Society; Hospital Graduates' Club, New York (annual).

January, January 20.—Academy of Pathological Science, New York; New York Society of German Physicians. Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending January 12, 1907:

	January 12		January 5	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	43	8	40	9
Smallpox	3	..	3	..
Measles	154	..	118	..
Scarlet fever	204	6	157	12
Diphtheria	234	8	225	14
Whooping cough	66	4	66	13
Infantile paralysis	291	51	298	53
Polio-myelitis	446	162	342	180
Other infectious diseases	21	9	9	14
Totals.....	1,456	248	1,260	295

PHILADELPHIA AND THE MIDDLE STATES.

Physician Sentenced to Jail for Selling Cocaine.—Dr. J. F. Detweiler, of Uniontown, Pa., was sentenced to serve three months in jail and to pay a fine of \$100 for selling cocaine.

The Gloucester County, New Jersey, Medical Society.—At the annual meeting of this society, held at Woodbury, on Thursday, January 17th, Dr. Thomas G. Ashton read a paper entitled *Some Points in Physical Diagnosis*.

Northern Medical Association.—At the regular semi-monthly meeting of the Northern Medical Association, held on Friday evening, January 11th, Dr. David Riesman read a paper on *Floating Kidney*. The discussion was opened by Dr. Charles P. Noble. Dr. Howard D. Geisler delivered the retiring president's address.

Philadelphia Personal.—Dr. George A. O'Connell, of Montgomery, Ala.; Dr. George J. Field, of Salt Lake City, Utah; Dr. Edward F. O'Day, of Dover, Delaware; and Dr. M. P. White, of Dowagiac, Mich., are registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

Charitable Bequests.—By the will of Tillie Crouch, the Presbyterian Home for Aged Couples at Bala, Pa., becomes the residuary legatee. The estate is valued at \$3,000. By the will of Alice Vance Eva, the Old Ladies' Home at Wisconsin receives \$10,000. By the will of Louis C. Vanuxem, Jefferson Medical College Hospital receives \$25,000.

Medical Inspection of Schools in Pittsburgh.—At the meeting of the Central Board of Education in Pittsburgh, held recently, the superintendent of the bureau of health, Dr. J. F. Edwards, recommended the employment of physicians to make regular inspections of the health of the pupils of the public schools. He also recommended the employment of visiting nurses to assist in the enforcement of the sanitary laws.

Episcopal Hospital, Philadelphia.—At the annual meeting of the board of managers of the Episcopal Hospital, in Philadelphia, held on January 4th, Captain E. F. Leiper was reelected superintendent. At the annual meeting of the contributors to the hospital, held on January 1st, Bishop Mackay-Smith, the Rev. Nathaniel S. Thomas, Charles D. Clark, Francis A. Lewis, Dr. Caspar Norris, Lincoln Godfrey, G. Clymer Brooke, and Robert C. Drayton were elected to the board of managers for three years.

Scientific Society Meetings in Philadelphia for the Week Ending Saturday, January 26, 1907.—*Monday, January 21st*, Northeast Branch, Philadelphia County Medical Society. *Tuesday, January 22nd*, Philadelphia Neurological Society. *Wednesday, January 23rd*, Philadelphia County Medical Society. *Thursday, January 24th*, Pathological Society; Entomological Section, Academy of Natural Sciences; Section Meeting, Franklin Institute. *Friday, January 25th*, South Branch, Philadelphia County Medical Society.

Philadelphia Pathological Society.—At the regular semi-monthly meeting of the Philadelphia Pathological Society, held on Thursday evening, January 9th, Dr. Benjamin A. Thomas, Dr. A. G. Ellis, Dr. W. W. Hawke, and Dr. Allen J. Smith exhibited card specimens. Dr. A. A. Uhle and Dr. William H. MacKinney gave a demonstration of *Spirochæta Pallidæ* in syphilitic lesions. Dr. J. Dutton Steele

read a paper on the Recent Additions in the Physiology of the Gastrointestinal Tract. Dr. David L. Edsall read a paper on *Some Points in the Digestion of Proteids*.

Biannual Report of the State Board of Charities.—The Pennsylvania State Board of Charities sent its biannual report to the legislature on Monday, January 14th. The board, after receiving requests for State aid from various charitable institutions, considers the claims to assistance from the State, and makes its recommendations to the legislature accordingly. In the appropriation bill which is subsequently introduced the legislature has the power to cut down or to increase the amounts recommended by the State Board of Charities, and after the bill is passed the governor has the power to veto any item or part of any item.

The College of Physicians of Philadelphia.—The following programme was arranged for a meeting of the *Section in General Medicine*, held on Monday evening, January 14th: A paper entitled *Chronic Intestinal Auto-intoxication*, by Dr. F. Forchheimer, of Cincinnati. The following formal discussion was also arranged: Dr. H. A. Hare: *The Clinical Manifestations and Treatment of Intestinal Auto-intoxication*; Dr. David L. Edsall: *The Significance of the Urinary Findings in Intestinal Auto-intoxication*; Dr. Joseph Sailer: *Inhibition and Augmentation of Digestive Ferments as Influencing Intestinal Auto-intoxication*; Dr. J. Dutton Steele: *The Significance of the Fœcal Findings in Intestinal Auto-intoxication*; general discussion.

The Philadelphia Pædiatric Society.—At the regular monthly meeting of the Philadelphia Pædiatric Society, held on Tuesday evening, January 8th, Dr. S. S. Woody exhibited a boy of nine years of age who was suffering from diabetes. Dr. C. F. Lefcowitz exhibited an anencephalic monster with a histological report by Dr. H. E. Radasch. Mr. Charles J. Branch exhibited an improved apparatus for the preservation and heating of milk in the nursery. Dr. James H. McKee reported a case of congenital jaundice. Dr. J. P. Crozer Griffith reported a case of congenital obliteration of the bile ducts. Dr. A. H. Davison reported a case of temporary aphasia in typhoid fever. Dr. J. K. Walker reported a case of diabetes in a child.

The Philadelphia Academy of Surgery.—At the regular monthly meeting of the Philadelphia Academy of Surgery, held on Monday evening, January 7th, Dr. H. Augustus Wilson exhibited a patient with dislocation of the cervical vertebrae. Dr. H. R. Wharton exhibited a case of tendon transplantation. Dr. John H. Jopson exhibited a patient who had recovered from self inflicted subhyoid laryngopharyngotomy. Dr. Oscar Allis read a paper entitled *Plastic Operations for Constricted Prepuce*. Dr. W. E. Lee, by invitation, reported a case in which a knitting needle was removed from an abdominal abscess after having been introduced into the uterine cavity seven months before. Dr. Joseph M. Spellissy read a paper on the *Use of Celluloid as a Covering for Metal Braces*. He also exhibited a specimen of cervical rib which was removed from between the subclavian vessels.

The Philadelphia County Medical Society.—At the regular semi-monthly meeting of the Philadelphia County Medical Society, held on Wednesday evening, January 9th, Dr. Henry Hulst, of Grand Rapids, Mich., read a paper on *Röntgen Diagnosis in Gastric and Intestinal Disease*. Dr. E. W. Caldwell, of New York, read a paper entitled *Some Peculiarly Valuable Röntgen Diagnoses*. The discussion on these papers was conducted by Dr. Henry K. Pancoast, Dr. Charles Lester Leonard, Dr. M. K. Kassabian, and Dr. W. S. Newcomet. Dr. Russell H. Boggs, of Pittsburgh, Pa., read a paper on the *Applications of the Röntgen Ray in Dermatology*, and Dr. George C. Johnson, of Pittsburgh, Pa., read a paper on the *Röntgen Treatment of Malignant Disease*. The discussion on this paper was conducted by Dr. George E. Pfahler, Dr. David L. Edsall, Dr. Jay F. Schamberg, Dr. Henry W. Stelwagon, and Dr. S. Maston McCollin. At the conclusion of the meeting a reception was tendered to the members by the Philadelphia Röntgen Society at the University Club. At the annual election for officers of the West Branch of the Philadelphia County Medical Society, held on December 7th, Dr. William Evans was chosen chairman and Dr. C. A. E. Codman clerk.

The Health of Philadelphia.—During the week ending January 5, 1907, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Malaria fever	1	0
Typhoid fever	252	17
Scarlet fever	33	5
Diphtheria	34	0
Croup and whooping cough	78	10
Whooping cough	1	0
Measles	10	1
Tuberculosis of the lungs	22	0
Tuberculosis of the lungs	66	72
Tuberculosis of the lungs	106	87
Erysipelas	11	0
Septicæmia	1	0
Tetanus	1	0
Mumps	6	0
Cancer	22	10
Trachoma	1	0

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 10; diarrhoea and enteritis, under two years of age, 23; puerperal fever, 2. The total mortality was 634, in an estimated population of 1,500,595, corresponding to an annual death rate of 22.44 in a thousand population. The total infant mortality was 123; under one years of age, 104; between one and two years of age, 19. There were 48 still births, 30 males and 18 females. The temperatures were rather high and the total precipitation was 0.97 inch. On the 4th the maximum temperature was 57 degrees, the minimum was 45 degrees, and 0.37 inch of rain fell during a shower such as is seen in the early spring.

BOSTON AND NEW ENGLAND.

The Maine Academy of Medicine and Science.—At the meeting of this academy, held at Portland, on Wednesday, January 9th, the subject for discussion was Tuberculosis. Dr. Stephen Weeks spoke on the importance of early diagnosis, and Dr. Estes Nichols, of the State sanatorium at Hebron, spoke on the sanatorium treatment of the disease.

The Bridgeport, Conn., Medical Society.—The annual meeting of this society was held on Tuesday, January 8th, and officers were elected as follows: President, Dr. G. Skiff Ford; vice-president, Dr. J. Murray Johnson; secretary, Dr. F. W. Stevens; treasurer, Dr. Philip W. Bill; executive committee, Dr. J. D. Gold, Dr. F. D. Downs, and Dr. H. E. Smyth.

The Fall River, Massachusetts, Medical Society has been incorporated under the laws of the State and officers for 1907 have been elected as follows: President, Dr. Richard J. Thompson; vice-president, Dr. John Gilbert; secretary, Dr. Mary W. Marvell; treasurer, Dr. Alanson J. Abbe; librarian, Dr. George L. Richards; executive committee, Dr. G. E. Butler and Dr. S. W. Bowen; legislative committee, Dr. M. Kelly, Dr. W. H. Butler, and Dr. H. G. Wilbur.

The Hartford, Conn., Medical Society.—At the annual meeting of this society, held on Monday, January 7th, the election of officers resulted as follows: President, Dr. William W. Knight; vice-president, Dr. Frederic S. Cronfield; secretary, Dr. Arthur D. Hayes; treasurer, Dr. George K. Welch; librarian, Dr. Walter R. Steiner; trustees, Dr. Gurdon W. Russell, Dr. George R. Shepherd, and Dr. G. P. Davis; censors, Dr. George N. Bell, Dr. Thomas F. Kane, and Dr. Benjamin S. Barrows.

BALTIMORE AND THE SOUTH.

The Richmond (Va.) Academy of Medicine and Surgery.—At a meeting of this academy, held on Tuesday, January 8th, a paper on Dietetics in Infancy and Childhood was read by Dr. St. George T. Grinnan. The paper was discussed by Dr. McGuire Newton.

The Chattanooga, Tenn., Medical Society.—At the annual meeting of this society, held on Friday, January 4th, the election of officers resulted as follows: President, Dr. G. R. West; vice-president, Dr. H. P. Larimore; treasurer, Dr. S. I. Yarnell; secretary, Dr. J. H. Atter.

The Madison County, Alabama, Medical Society.—At a meeting of this society, held recently at Huntsville, officers were elected as follows: Dr. B. E. Graham, of Gurley, president; Dr. J. J. Horton, of Huntsville, vice-president; Dr. Edgar Rand, of Huntsville, secretary and treasurer; Dr. W. C. Wheeler, county health officer.

The Chatham County, Georgia, Medical Society.—At a meeting of this society, held at Savannah, on Wednesday evening, January 9th, Dr. E. R. Corson read a paper on Suprapubic Prostatectomy. Resolutions endorsing the ad-

ministration of Dr. W. F. Brunner as health officer, and requesting his reappointment by the mayor elect, were adopted.

The Georgia Medical Society.—The annual meeting of this society was held at Savannah, on January 10th, and the following officers were elected: President, Dr. M. F. Dunn; vice-president, Dr. Jabez Jones; recording secretary, Dr. John K. Train; corresponding secretary, Dr. Thomas S. Clay; librarian, Dr. J. A. Crowther; treasurer, Dr. W. W. Owens, of Savannah.

The Anne Arundel County, Maryland, Medical Society.—At a meeting held at Annapolis on January 8th, officers were elected as follows: President, Dr. Harry B. Gantt, of Millersville; vice-president, Dr. W. Clement Claude, of Annapolis; treasurer, Dr. Frank H. Thompson, of Annapolis; secretary, Dr. Louis B. Henkel, Jr., of Annapolis; censors, two years, Dr. Thomas H. Brayshaw, of Glenburnie; one year, Dr. Joseph M. Worthington and Dr. William S. Welch, of Annapolis; delegates to State faculty, Dr. Thomas H. Brayshaw and Dr. Walton H. Hopkins.

The Baltimore Medical and Surgical Association.—At the annual meeting of this association, held on January 14th, the question of dissolving the association was considered. This action is said to be due to the fact that the attendance at the meetings has been generally decreasing. An adjournment was taken *sine die* and it is probable that then there will be no more meetings of the association. The following list of officers had been nominated for election, but in view of the action taken they were not elected: President, Dr. W. B. Perry; first vice-president, Dr. J. H. Branham; second vice-president, Dr. G. Lane Taneyhill; treasurer, Dr. William Caspari; secretary, Dr. J. N. Reik; executive committee, Dr. A. C. Harrison, Dr. Emil Novak, Dr. W. T. Watson; committee of honor, Dr. David Streett, Dr. John Neff, Dr. Sydney M. Cone.

CHICAGO AND THE WEST.

Personal.—At a meeting of the consulting staff of the Cook County Hospital, held at Chicago, on January 4th, Dr. Frank Billings was elected chairman of the staff, to succeed the late Dr. Fernand Henrotin.

The Indiana State Board of Medical Registration and Examination organized for the year on January 8th, by electing Dr. J. M. Dinnen, of Fort Wayne, president; Dr. J. E. P. Holland, of Bloomington, vice-president; Dr. M. S. Canfield, of Frankfort, treasurer; and Dr. W. T. Scott, of Crawfordsville, secretary.

Opsonic Therapy.—Before the Northern Tri-State Medical Association, which met at Elkhart, Ind., January 8, 1907, Dr. A. P. Ohlmacher, of Detroit, reported the results of his clinical experience in treating various subacute and chronic infections by bacterial inoculation, after the principles of Wright's theory of opsonins.

Statement of Mortality of Chicago for the Week Ending January 5, 1907, compared with the preceding week and with the corresponding week of 1906. Death rates computed on United States Census Bureau's figures of mid-year populations—2,107,620 for 1907, 2,049,185 for 1906:

	Jan. 5, 1907.	Dec. 29, 1906.	Jan. 6, 1906.
Total deaths, all causes	673	575	562
Annual death rate in 1,000	16.65	14.63	14.31
Sexes—			
Males	401	336	320
Females	272	239	242
Ages—			
Under 1 year of age	128	123	93
Between 1 and 5 years of age	62	60	43
Between 5 and 20 years of age	39	42	31
Between 20 and 60 years of age	294	232	260
Over 60 years of age	150	118	135
Important causes of death—			
Apoplexy	9	16	16
Bright's disease	54	34	64
Bronchitis	27	25	14
Consumption	63	59	71
Cancer	27	30	29
Convulsions	16	10	8
Diphtheria	15	17	11
Heart diseases	47	51	32
Influenza	6	6	4
Intestinal diseases, acute	31	31	17
Measles	2	3	1
Nervous diseases	25	15	18
Pneumonia	137	101	102
Scarlet fever	13	8	3
Suicide	4	9	8
Typhoid fever	6	9	4
Violence (other than suicide)	58	28	40
Whooping cough	6	4	
All other causes	129	121	130

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

1. *Endothelioma of the Skin.* By WILLIAM S. GOTTHEIL.

2. *Results From the Surgical Treatment of Brachial Birth Palsy.* By ALFRED S. TAYLOR.

3. *Landry's Paralysis, with Report of Five Cases.* By J. N. HALL and S. D. HOPKINS.

4. *The Submucous Resection of the Nasal Septum. With a Report of Fifty-six Operations.* By J. F. BYINGTON.

5. *The Submucous Resection of the Nasal Septum. Some Remarks Based on Seventy-five Cases.* By LEE MAIDMENT HURD.

6. *Subperichondrial and Subperiosteal Operations on the Nasal Septum.* By ROBERT CLINNINGHAM MYLES.

7. *Trypanosomes (Concluded).* By FREDERICK G. NOVY.

8. *Treatment of Fractures of the Neck and Shaft of the Femur.* By FRANK E. PECKHAM.

9. *Treatment of Lobar Pneumonia.* By M. A. B. SMITH.

10. *The Antitoxine Treatment of Tertian Malarial Infections.* By JOSEPH HERBERT FORD.

3. **Results from the Surgical Treatment of Brachial Birth Palsy.**—Taylor describes the ætiology and technics of operations, with the results of nine operations performed. In conclusion he says that brachial birth palsy of the Erb type is due to overstretching of the nerve roots which results in rupture of the sheath, fibres, and vessels of the nerves. From the cicatrization of the resulting hæmorrhage and torn sheath there results a permanent obstruction to the transmission of nerve impulses. These cicatrices may be single or multiple. The only way to reestablish nerve conduction is to excise the cicatricial area and do an end to end suture of the nerves. If operation be delayed too long there result: Impaired development of the extremity; contractures of muscles and ligaments, and atypical shape of the joint ends of the bones, all of which cause the characteristic deformity of this lesion, and which render postoperative return of the extremity toward normal exceedingly slow and laborious. It is probable that the older a patient is before operation the slower and more incomplete will be the return to normal. Early operation is, therefore, indicated. From six to twelve months would seem a suitable time, as the lesion would then have become well localized. Further experience may suggest an even earlier date. In any case, the deformities should be prevented by the systematic use of massage, etc., both before and after operation. The damage to the nerve roots in the order of severity is from above downward. The suprascapular is always damaged, controls the important group of external rotators of the humerus, and should, therefore, be most carefully sutured to a good proximal nerve stump at operation. It is a common matter to have some additional palsy caused by operation, but recovery from this soon takes place. Following operation there come improved nutrition and growth of the extremity, with increased range and power of motion. Nerve bridging may succeed in the very young.

4. **Landry's Paralysis.**—Hall and Hopkins, in speaking of the treatment of Landry's paralysis, say that the treatment is not satisfactory. In general it must be chiefly supportive. The bladder, if involved, must be most carefully irrigated, and urotropin given if urinary infection threatens. In their own case, in which the patient recovered, Dr. Hall gave sodium salicylate, which was followed by potassium iodide and mercurial inunction, in spite of the absence of syphilis. Later, large doses of strychnine were given, with the faradic current and massage to the paralyzed muscles. Three drachm doses of fluid extract of cascara were needed in the early stages, owing to the profound torpor of the intestines, while later $\frac{1}{2}$ drachm doses sufficed.

5, 6, and 7. **The Submucous Resection of the Nasal Septum.**—Byington says of the advantages of his method that all obstruction due to sæptal deformity is relieved in practically 100 per cent. of cases, while by the older methods of straightening the sæptum good results were obtained by the better operators in only about 65 to 70 per cent. of cases. To the feature of thoroughness is added absolute permanency of results. The functional mucosa and submucosa is wholly preserved in nearly all cases. The only function which needs to be considered as liable to be interfered with is that of support to the external nose. Very few operators have mentioned any deformity of the external nose resulting from the operation, and those who have, mention only a slight sinking in of the bridge of the nose due to the removal of too much cartilage beneath it, or to cicatricial contraction of specific origin. The operation may be performed with very little pain under local anæsthesia and the risk of general anæsthesia thus avoided. It is also unnecessary to subject the patient to the torture of wearing nasal splints for days or weeks after the operation. On account of the results obtained from the submucous resection, doubtless nasal obstruction will now be corrected more often by operation on the sæptum than formerly, and thus many inferior turbinates, which have an important functional value, will be saved intact, which have been heretofore sacrificed in whole or in part.—Hurd, in speaking of the complications, remarks that the most annoying is the formation of hæmatoma. This forms between the sæptal membranes usually beyond the reach of the packing, or else after the removal of the packing. To prevent the formation of hæmatoma in cases liable to excessive bleeding, it is his custom to place the packing in both sides of the nose, and allow that on the convex side to remain two days instead of twelve hours. The ultimate result achieved by his operation respecting nasal breathing particularly has been uniformly good. In some we have not only a deviated sæptum to deal with, but also a bulging of the turbinates which may be either bony or hyperplastic in character. This condition may be simulated by the sæptal deviation pressing on the turbinates or by a true bulging of the bone as well. In these cases after the sæptum has been placed in the median line it will free the previously occluded side and partially close the formerly open cavity. If the bulging of the turbinates is due to a hyperplasia of the mucous membrane (which is often the case, due no doubt to a local vasomotor change caused by the deflected sæptum pressing against the opposite turbinate) the hyperplasia will gradually subside and in the course of a month or two the nose will have an entirely normal appearance. Should the bulging of the turbinate in the formerly open chamber be bony, it is best, in his judgment, first to place the sæptum in the median line and later to correct the shape of the turbinate by a submucous method, practically remodeling the nasal cavity.—Myles describes his technics as follows: He begins by washing the vestibular walls of the anterior nose with water, green soap, alcohol, and ether. When possible, he applies a bichlorid dressing over the region of the vibrissæ for a few hours. Sterilization should be as complete as for a brain or abdominal operation. The upright position is preferred with local anæsthesia. When patients are extremely nervous or hysterical, he uses a reclining chair with an incline of 20 to 45 degrees. The same methods of using cocaine are employed as he has used for more than fifteen years; careful rubbing in over the operative area of small quantities of the crystals, moistened with a 10 per cent. solution; this to be followed by 1 to 1,000 solution of adrenalin, and this to be followed in turn by the application of thin layers of cotton moistened in the same manner as the swabs. Care should be exercised that the secretions do not carry the cocaine down on the floor of the

nose and into the rhinopharynx. After about five to eight minutes everything should be in readiness for the operation. Two hypodermic syringes with asbestos pistons should be previously prepared, one containing a sterile solution of cocaine, 0.12 of 1 per cent., and the other a solution of adrenalin, 1 to 1,000. He uses the asbestos pistons, because glass pistons draw the air in when used in an upward position. The 0.12 of 1 per cent. solution can be used freely and often, and is needed frequently when extensive dissections are required near the floor of the nose and on the vomer. He emphasizes the importance of one or two counter-openings through the flap of the side of the incision. These openings should be made in all cases where the cavities between the membranes are deep and as near the bottom of the cavities as possible.

8. Trypanosomes.—Novy observes that the studies in the past few years have brought to light another group of organisms which play an exceedingly important part in the causation of diseases peculiar to the warm countries. Unicellular forms of animal life are to-day the recognized causes of a large number of diseases. Under the head of protozoa are classed: First, the *Trypanosomata*, which are met with free in the blood plasma; second, the *Hemocytozoa*, which find their habitat within the blood cells and are represented by the malarial organisms in man and by related forms in the lower animals; also by the piroplasmata found in Texas fever and allied affections; third, the *Amæba*, which are found in the intestine in dysentery. Many other forms of pathogenic protozoa are known, but they are of relatively little interest compared with those mentioned. We may divide the mammalian trypanosomes into nonpathogenic and pathogenic groups. The pathogenic group includes eight forms, two of these are pathogenic for men, the *Trypanosoma gambiense* and the *Trypanosoma (?) (Piroplasma) donovani*, responsible for the sleeping sickness in Africa, and the Kala agar disease in India, respectively. The sleeping sickness is conveyed, by the bite of a tsetse fly, *Glossina palpalis*. Human trypanosomiasis is characterized by two stages. In the first the trypanosomes exist in the blood, but always in small numbers. An irregular remitting fever is the chief symptom of this stage. The pulse and respiration are accelerated. Slight œdemas and erythemas are at times met with, and in addition enlarged glands and spleen. Owing to the mildness of these symptoms, the disease passes unnoticed among the natives. The second stage follows after the lapse of a variable length of time. It is this stage which is known as sleeping sickness. The fever is marked especially toward evening. The patients become dull and apathetic and complain of intense headache. Weakness of the arms and legs develops, speech becomes difficult and emaciation sets in. Somnolence increases and eventually a comatose condition supervenes with death. As to the transmission of the Kala agar disease, nothing definite can be stated. Rogers is of the belief that the common bed bug or possibly mosquitoes are the most likely hosts. By allowing mosquitoes to bite a patient, Patton has been able to find in their stomachs flagellates. *Herpetomonas* and *Crithidia*, such as have been described in these insects, and consequently such forms cannot be considered as stages of this parasite. Patton, in a personal communication, however, states that he has been able recently to observe divisional and even flagellated forms in bugs, which important fact goes to show that this insect is the transmitting agent. The author mentions also two genera of fish trypanosomes, of the insect trypanosomes, and of the trypanosomes of birds.

10. Treatment of Lobar Pneumonia.—Smith states that he gives first place in the treatment of lobar pneumonia to quinine, as the view seems to be proved that quinine acts as an antitoxine in pneumonia, destroying the microorganisms and their products, which produce

sepsis. Quinine sulphate is administered in heroic doses, 50, 40, or 30 grains.

MEDICAL RECORD

January 12, 1907.

1. Study of a Case of Yellow Fever. By A. C. KELSEY.
2. Practical Points in the Operation of Colostomy. By CHARLES B. KELSEY.
3. A General Consideration of Domestic Parasites. By F. C. MCGILL.
4. The Hyoscine Sleep in Obstetric Practice. By WILLIAM H. HARRINGTON.
5. The Hyoscine Sleep in Obstetric Practice. By CHARLES B. KELSEY.
6. Widespread Immunity to Certain the Parasitic Infection of Man. By CHARLES J. DODSON.

1. Study of a Case of Yellow Fever.—Thayer reports the history of a patient and the conditions found at post mortem examination, the clinical as well as the pathological diagnosis being yellow fever. After describing his staining method he says that wherever the capillaries contain red cells, some of those present within their bodies deeply stained blue or purple bodies. The balance of the cell is not stained by the gentian, or only faintly so; with a contrast stain, of course, it will have no bluish tinge. Some of the blue staining bodies are free. Such extracellular forms were observed on the surface of the ileum, among desquamated epithelia, and extravasated red cells, and in the glandular spaces of the prostate they were very numerous, but they occur in all the tissues examined, lying either in capillaries, lymphatics, or tissue spaces. Others were found in endothelia, or, rarely, in epithelia, as in the kidney. In size these bodies vary from a round point in the body of a red cell, of less than one fifth the diameter of the cell, that is, about $\frac{1}{2}$ mikron, up to a body which occupies all the cell except a narrow margin. Between these extremes of size are various amœboid and horse-shoe forms. Where red cells lie in small capillaries as elongated oval or triangular objects, the stained body frequently occupies one end. In some red cells the amœba shows distinct pseudopods, and in the intestinal wall, the prostate, kidney, and elsewhere, such amœboid forms have been found free. In an endothelial cell, desquamated from a lymphatic in the submucosa of the ileum, a small elliptical body was found, lying in a space in the cell protoplasm, which it did not entirely fill, the unstained cell nucleus lying at the side. A similar observation was made on a large lymphocyte, which presented no nucleus. Occasionally a capillary is so filled with red cells, which carry these blue bodies, that with a low power the vessel stands out as a solid cord among the unstained elements. The author thus gives his reason why the blue amœboid bodies cannot be regarded as artefacts nor as elements of the tissue, as with his method the blue amœboid objects are the only elements stained in sections of various organs. The internal structure of the amœba is difficult to make out, and this is one point in which the method needs improvement. The staining is usually dense and uniform, except for the presence of vacuoles, but no nucleus is visible, and no pigment. In some of the forms observed after bichloride hardening there were a few of the amœbæ which presented a reddish tinge on one side; this may perhaps prove to be nuclear. The author concludes that from his single method it cannot be asserted, far less proved, that the amœboid bodies observed are causal in the disease known as yellow fever, though provisionally the name *Amœba febris flavæ* may be suggested.

2. Practical Points in the Operation of Colostomy.—Kelsey says of his own method that the incision in the operation of colostomy was for a time unnecessarily large. It is now half the length and "gridironed," as in appendicitis. In other words, muscles are separated as far as possible, and fibres cut as little as possible, while an opening one inch long will usually allow the inser-

tion of the index finger, the hooking up of the sigmoid, and pulling it out of the abdomen. If, as he holds, as useful and cleanly an opening can be made in this way as by any more elaborate effort as sphincteric power by carrying the loop to a distance from this opening through other muscles or under the skin, and closing this opening for another more or less removed from it, these modifications, which constitute most of the supposed improvements, will not hold their own. The author describes a contrivance for closing an artificial anus. It is a simple truss with a fork at the end. Between the two prongs of this fork slips a flat, hard rubber ring about an inch thick and two inches in diameter, and onto this ring the soft rubber pocket is held by its own elasticity. The contrivance is light, firm, and cleanly.

4. **Pes Planus from the Viewpoint of Neurology.**—Frischbier, in speaking of the treatment for pes planus, says that foremost is rest in the horizontal position, to relieve the feet and legs of all strain; passive and active manipulation of the parts, electricity, baths, and massage aid in eliminating inflammation. Fixation of the feet for a certain period of time in a position of flexion, inversion, and adduction by means of strapping, bandaging, or in bad cases plaster casts, is beneficial. In extreme cases surgical measures may be necessary to secure restoration of function. Unfortunately, the majority of the patients cannot afford this more thorough, but slow, rest treatment, being compelled to earn their daily bread; they ask relief to enable them to continue their avocation. Here the much vaunted arch supporters and braces made of metal, leather, or hard rubber were found on actual trial not to sustain the reputation they undeservedly bear, unless properly fitted by the orthopaedist. The wage earner is best served by shoes constructed on scientific principles—broad, substantial, roomy, with stiff counters and built up soles and heels. Exercises carefully adapted to individual needs, such as balancing on tiptoe, moderate dancing, alternately raising the body on the toes or heels, and inverting the feet are of great value.

BRITISH MEDICAL JOURNAL.

December 29, 1906.

(Seventy-fourth Annual Meeting of the British Medical Association.)

Section of Ophthalmology.

1. Conditions of Eyesight Required for Military Service,
By A. LAWSON.
2. Visual Tests for Railway and Marine Service,
By C. H. WILLIAMS.
3. A Discussion on Rare Forms of Choroiditis,
By J. B. LAWFOORD and C. S. BULL.
4. Some Recent Cases of Death and Blindness from Wood-Alcohol Poisoning,
By C. A. WOOD.
5. A Discussion on Sympathetic Ophthalmia,
By G. H. BURNHAM, A. LAWSON, and C. A. OLIVER.
6. Sympathetic Degeneration,
By A. F. FERGUS.
7. A Case of Sympathetic Ophthalmia which Followed a Mules's Operation, and Ended in Recovery,
By W. G. M. BYERS.
8. Phlegmon of the Orbit Simulating a Malignant Growth and Its Origin from the Ethmoid Cells,
By D. ROY.
9. Eyesight in Relation to Compensation,
By A. F. FERGUS.
10. Diaphanoscopy of the Eye,
By H. V. WÜRDEMANN.
11. Treatment of Unripe Cataract,
By W. M. KILLEN.
12. Dependence of Accommodation and Motility on the Refraction of the Eye,
By H. KNAPP.
13. Tenotomy of Inferior Oblique and Consideration of the Conditions That May Call for the Operation,
By A. DUANE.
14. Accommodation After Middle Life,
By Dr. JACKSON.
15. Surgical Treatment of Trachoma,
By G. S. RYERSON.
16. Binocular Vision,
By A. F. FERGUS.
17. On the Secondary Insertions of the Recti Muscles and Their Clinical Importance,
By L. HOWE.
18. A Discussion on Affections of the Lachrymal Passages,
By A. B. OSBORNE, S. D. RISLEY, S. THEOBOLD, and others.

1. **Eyesight and Military Service.**—Lawson calls attention to the following points which he thinks would improve the examination of candidates for military service: 1. The abolition of the present minimum standard of visual acuity and the substitution of an examination of every case in which the visual acuity is less than $D = \frac{6}{6}$ in either eye, together with the deter-

mination of a standard visual acuity after correction, and the rejection of a candidate in any case if the refractive error be greater than $M = -3d$ or $H = +4d$. In the case of astigmatism the correcting cylinder should not be greater than 3 dioptres. 2. In cases of defective vision it is desirable that the standard of visual acuity should be higher for the right eye than for the left. 3. The substitution of Snellen's test types by a simple universal diagram, such as that devised by Landolt, the type to be mounted upon an unglazed surface. 4. A more definite statement as to the illumination of the type. 5. The enforced examination of all candidates with the ophthalmoscope. 6. A reduction in the severity of the regulations with regard to color vision. The conditions of examination should be the same for recruits to the ranks as for officers.

4. **Wood-Alcohol Poisoning.**—Wood states that wood-alcohol poisoning and the amaurosis produced thereby is unknown in England, and is rarer in Canada than in the United States. Usually within twenty-four hours of the absorption of the poison, either by the stomach or by inhalation of the fumes mixed with re-breathed air, the patient complains of nausea, vomiting, abdominal distress, weakness of the extremities, pallor of the face, and coldness of the hands and feet. He generally has severe headache, difficulty of breathing, and partial unconsciousness which may deepen into coma and be followed in twenty-four to forty-eight hours by convulsions and death. The eyesight, when large doses are taken, suffers more or less in the majority of instances, although it may remain good for several days, and may not be affected until almost every other sign of the affection has passed off. Whether it shows itself early or late, whether partial or total, it is almost always followed in a few days by more or less complete return of vision; in some cases central acuity may again become normal. After a time, however, in spite of this apparent improvement—often attributed to the effects of treatment—sight again becomes defective, the patient sees less and less, and as a rule becomes totally and permanently blind. The visual fields are generally contracted, and absolute central scotomata can be mapped out. At this stage of the intoxication the pupils are widely dilated and do not respond to light or accommodation. The characteristic ocular lesion is an optic neuritis, which is generally recognizable by the mirror in the early days of the intoxication. The optic outlines are blurred, there is some papillary oedema, and the central vessels are distinctly engorged. These organic alterations correspond closely to the symptoms. As soon as the acute papillitis subsides vision somewhat improves, to be followed by a post-neuritic atrophy and permanent loss of sight. The treatment of the eye lesions in wood-alcohol poisoning is far from satisfactory. Pilocarpin sweats with potassium iodide or sodium salicylate in the early stages, and the use of full doses of strychnine hypodermically when optic atrophy declares itself may be of some value. The intoxicant is nearly always the so called "purified" or "deodorized" form of wood-alcohol, employed either as "mixed drinks" or as an adulterant of, or substitute for, ethyl alcohol.

LANCET.

December 29, 1906.

1. The Treatment of General Peritonitis,
By A. W. M. ROBSON.
2. Cyanosis, General and Local,
By T. OLIVER.

3. Some Pathological Considerations of Extraterine Pregnancy.
By S. J. M. CAMERON.

1. General Peritonitis.—Robson defines general peritonitis as a diffuse peritonitis involving the whole cavity of the peritoneum usually due to a perforation of the stomach, duodenum, appendix, or intestine into the free peritoneal cavity, not limited by adhesions; by a spreading peritonitis he means one in which there are no lymph barriers, but in which the peritonitis has not yet involved the whole cavity of the peritoneum. In former days, diffuse or general peritonitis nearly always meant death, the only treatment being the administration of opium and the application of hot fomentations. Such conservative treatment being entirely unsatisfactory, the purgative treatment was introduced—the thorough emptying of the intestines and the production of watery discharges. In so far as this method rigidly prohibited the use of opium in any form, it was a step in advance. But purgative treatment in acute general peritonitis from perforation of a hollow viscus or as a primary method of treatment in acute appendicitis, can only be disastrous. In the author's opinion the routine clearing out of the bowels at the beginning of all acute abdominal diseases should be as heartily condemned as the administration of morphine before a diagnosis has been made. Finally the operative treatment of general peritonitis was introduced, the salient points being: 1. The removal or repair of the cause with or without irrigation of the peritoneal cavity. 2. Drainage of the site of operation by a split rubber tube containing a strip of gauze and of the peritoneal cavity by a tube in the pelvis, assisted by the reclining posture. 3. Rapidity of operation. 4. Avoidance of unnecessary exposure and handling of the viscera. 5. The prevention of shock. 6. The free administration of saline fluid by the rectum. 7. Rectal alimentation and the stoppage for a time of mouth feeding. 8. The avoidance of opium and sometimes the administration of repeated small doses of calomel subsequently to operation. To properly understand the treatment of peritonitis certain facts must be grasped. The lethal issue of acute peritonitis is due to poisoning from toxins formed in and absorbed from the general peritoneal cavity. Infection may arise either from perforation of a hollow viscus, or from the passage of infective germs through the unbroken walls of the gastrointestinal canal in certain unhealthy conditions such as paresis with distention or interference with the circulation. In cases where the peritoneum is not flooded at once with septic organisms, the first organisms to migrate are the mild staphylococci albi which give rise to increased phagocytosis and prepare the peritoneum for the invasion of the more virulent germs. In a certain class of cases, however, the peritoneum is flooded with the virulent organisms, and the patient may be killed in a short time if they be not removed by irrigation and thorough cleaning—if necessary, by splachnoptosis. The use of opium masks symptoms at first and leads to a false sense of security, frequently deceiving both the patient and the doctor, and leading to fatal delay; later it increases intestinal paresis, and leads to distention and to an inhibitory effect upon leucocytosis. In order for drainage to be effectual in general peritonitis the cause must as a rule be repaired or removed so that fresh poison may not invade the peritoneum. The administration of saline fluid by the rectum is most useful; enormous amounts are absorbed, and the current of the lymph stream is reversed, so that instead of absorption taking place from the peritoneal surface, the mouths of the lymphatics pour out fluid which bathes the peritoneum and carries the infection down to the pelvis. The fluid moreover fills the vessels, combats shock, and is excreted from the kidneys carrying with it septic material from the blood. As all food or fluid

by the mouth sets up peristalsis with consequent dissemination of septic material from the original focus of disease, all feeding by the mouth before operation should be withheld, rectal alimentation being substituted. In many cases of appendicitis the disease may thus be localized. The chief factor in the treatment of spreading and general peritonitis is early diagnosis and operation without loss of time.

2. Cyanosis.—Oliver calls attention to a form of cyanosis of a somewhat fleeting character, attended occasionally by distressing symptoms, and while comparable in its physical appearances with the cyanosis observed in congenital heart disease, yet free from cardiac lesion. It is the physical sign of a toxæmia, and the absence of heart disease and the fact of the rather rapid appearance and equally rapid disappearance of the blueness point to the operation of circumstances which can be frequently controlled. The cyanosis is of the nature of an autointoxication with intestinal poisons, or it is the result of the ingestion of some of the synthetic drugs of the aniline class, many of which form the principal ingredient of proprietary medicines. The cyanosis of enterogenous origin is the result of the action of sulphur bodies or nitrites upon the hæmoglobin of the blood converting it into methæmoglobin—a substance in which, although oxygen is present it is so firmly retained that it cannot be dissociated for the requirements of the body. Aniline workers are subject to cyanosis, especially workers in nitrobenzene factories. Aniline vapors when inhaled produce symptoms more slowly than when the salts are ingested. The symptoms are the same—nausea, vertigo, oppressive sleepiness, muscular pains, and a sense of weakness with tremors and anæsthesia. The skin becomes blue, the buccal mucous membrane, the gums, the conjunctivæ, the lobes of the ears, the face, the feet, and the hands showing the discoloration best. The cyanosis is not due to venous stasis, but depends upon a colored substance in the blood, probably methæmoglobin. Raynaud's disease is a peculiar form of local cyanosis; blueness of the hands and feet. Three stages are described; local pallor (syncope); local cyanosis (asphyxia); and gangrene. The pathology of the conditions is unknown. The causes of tissue death are: Obstructed arterial circulation, impeded venous flow, obstructed capillary circulation, owing to diseased walls of vessels, and death of the cells by poisons due to microbes. It would seem as if some peculiar local change occurred in the tissues of the part affected in Raynaud's disease, whereby either in consequence of the contraction of arteries and veins due to some central nervous condition influencing the vasomotor centre, or in consequence of altered chemical states of the blood or pathological changes in the walls of the minute vessels, that either of these conditions singly or combined, but accompanied by poisoning of the cells of the part either through their own toxins or by poisons brought to them, is capable of causing death of the tissues and the formation of a gangrenous slough.

LA PRESSE MEDICALE.

December 22, 1906.

1. Exanthematic Typhoid Fever in the Adult and the Exantem in Typhoid, By CH. LESIEUR.
2. Aphasia and Anarthria, By P. L. LADAME.
3. Pegnine in the Food of Infants, By J. COMBY.
4. Formula of Vegetable Bouillon, By J. COMBY.

1. Exanthematic Typhoid Fever in the Adult.—Lesieur says that the exanthematic form of typhoid fever, which has been described by Weill as occurring in children, may be met with in adults also in cases of medium severity, more frequently in women. This form is characterized in the adult as in children by a marked eruption of roseola, attenuation of the intestinal symptoms, and a favorable prognosis. The abundance of the spots of roseola constitutes a favorable prognostic symp-

tom in the adult as in the child if it coincides with the absence or reduction of digestive troubles. The abundant eruption of roseola typhosa must not be confounded with the eruptions of other exanthematous diseases, such as scarlatina or measles, which may appear in association with the typhoid fever.

1. *Primary Tuberculous Atherogenesis*. By A. CALMETTE.
2. *Pathological Cytology of the Kidney in Experimental Intoxication with Corrosive Sublimate*. By G. MOURIGUAND and A. POLICARD.
3. *Injections of Oleum Cinereum in the Treatment of Syphilis*. By E. BODIN.
4. *Surgical Intervention in the Phlebitis of Typhoid Fever*. By R. ROMME.

1. **Ætiology of Infantile Tuberculosis.**—Calmette endorses the recent article by Comby, in which the attention of the profession was called to the extreme frequency with which children become infected with tuberculosis from centres of infection within their own families, and he thinks the cases to be rare in which such infection occurs through the medium of cow's milk. He also believes that the infection usually enters through the intestine and lymphatics, and that the primary tuberculous lesion is always vascular.

2. **Pathological Cytology of the Kidney in Experimental Intoxication with Corrosive Sublimate.**—Mouriguan and Policard describe the material and technique of their experiments and then the lesions found in the kidney, the lesions of the corpuscles of Malpighi, of the convoluted tubules, and of the loop of Henle. Their experiments show that the glandular elements of the kidney are affected intensely and at an early stage in poisoning with bichloride of mercury. After a short painful period, during which the elements undergo a certain number of morphological modifications, the renal cell necroses, while the glomeruli always remain intact. The lesions found may explain histopathologically the constant and characteristic symptom of poisoning with this drug, anuria, which may be due to either the mechanical obstruction of the urinary canaliculi by casts, or to the lesions of the renal cells themselves.

3. **Injections of Oleum Cinereum in Syphilis.**—Bodin has had very satisfactory results from the injection of Grey oil, metallic mercury triturated into suspension in vaseline, 20 centigrammes to the cubic centimetre, and finds that the slowness of absorption, which would theoretically be expected is absent.

4. **Surgical Intervention in the Phlebitis of Typhoid Fever.**—Romme reviews the two cases reported by Duret in which surgical intervention became necessary during the course of typhoid fever on account of the occurrence of infectious phlebitis. In such cases Duret maintains that the indications for surgical intervention are to interpose a barrier to prevent embolism and the cardiopulmonary accidents which may follow in its train, to prevent the transmission of the infectious products to other parts of the system by way of the veins, and to disinfect the primary phlebitic focus.

LA SEMAINE MEDICALE.

December 26, 1906.

1. *Is Measles Always Benign?* By L. CHEINISSE.
2. *How New Medical Terms Derived from the Greek Should Be Spelled*. By M. SAKORRAPHOS.

1. **Is Measles Always Benign?**—Cheinisse calls attention to the fact, very well known, but sometimes forgotten, that although measles is usually a rather harmless disease, yet in certain cases it develops a certain degree of malignity.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT

December 18, 1906.

1. *Investigations in Regard to Carcinoma Immunity in Mice*. By SCHÖNE.
2. *Venous Thrombosis and Coagulability of the Blood*. By S. HWAB.

3. *Studies in Regard to the Influence of the Tropical Sun on Pathogenic Bacteria*. By MARTIN.
4. *Contribution to the Surgical Treatment of Perityphlitis and Its Sequelæ*. By FRANKE.
5. *The Surgical Treatment of Loose Joints. Silk Bands or Arthrodesis*. By HERZ.
6. *The Behavior of Agglutinine in the Passively Immunized Organism*. By PRIBRAM.
7. *Three Cases of Neuralgia of the Tongue*. By HÖFLMAYR.
8. *A New Mirror Condensor to Make Visible Ultra-microscopic Particles*. By REICHERT.
9. *Tulle in Transplantation*. By KUHN.
10. *New Safety Pin for Securing Bandages*. By STALEWSKI.
11. *Remarks Concerning the Aerobic Cultivation of Anaerobic Bacteria*. By WRZOSEK.
12. *Review of Erb's Statistics of Gonorrhœa in Man and Its Consequences in Their Wives*. By KOPP.
13. *Regarding the Statistics of Gonorrhœa*. By KOSSMANN.
14. *Concerning the Möller-Barlow's Disease (Infantile Scurvy)*. By HOFFMANN.
15. *Signification and Applicability of the Physical Methods of Cure in Medical Practice (Conclusion)*. By VIERORDT.
16. *Negative Diagnosis*. By KNAUER.

1. **Carcinoma Immunity in Mice.**—Schöne gives as the result of his studies that an immunity to epithelial tumors may be produced in mice by repeated injections of mouse embryos. Whether this immunity is identical with that which follows a tumor injection remains an open question.

3. **Influence of the Tropical Sun on Pathogenic Bacteria.**—Martin claims that the results of his studies show that in tropical countries most pathogenic bacteria are weakened to a certain extent by the influence of the sun. The chief factor in this influence seems to be the heat of the sun's rays, though their light is also of considerable importance. He also finds that a number of nonpathogenic organisms remain unaffected, and that in these countries the mechanical cleansing by the sea water produces sterility of the superficial sand in the region of the breakers.

4. **Surgical Treatment of Perityphlitis.**—Franke contributes a strong article in favor of the surgical treatment of all cases of appendicitis, aside from a few special exceptions, but adds little if anything new.

5. **The Surgical Treatment of Loose Joints.**—Herz urges the operation of arthrodesis in cases of flail-like joints from total paralysis due to anterior poliomyelitis rather than the introduction of silk ligaments, as suggested by Lange and Reiner.

6. **The Behavior of Agglutinine in the Passively Immunized Organism.**—Pribram says that the loss of agglutinine remains the same whether the precipitate is great or small, and that some sera suffer no loss of agglutinine through certain precipitines, although just as large a precipitate is formed as when a precipitine is used which causes a loss.

8. **A New Mirror Condensor.**—Reichert has devised a very powerful condensor which he claims to be useful in the examination of colloid solutions, in examinations of the blood, for the observation of the unstained, living bacteria of any kind, and for the examination of transparent bodies.

15. **Physical Methods of Cure in Medical Practice.**—Vierordt extols physical treatment, with particular reference to hydrotherapy, and says that the fundamental ideas of physical methods of treatment must be the common property of physicians, but that the technique must be learned technically and needs to be frequently refreshed if not used constantly. The temperature, duration, and form of baths should be prescribed in writing, the same as doses of drugs.

16. **Negative Diagnosis.**—Knauer urges the danger inherent in making a negative diagnosis from reliance on pathological findings or the opposite, using as a text the case of a man, thirty years of age, who consulted

him on account of a generalized large maculopapular syphilide. He had been under the care of another physician who saw him with a flat ulcer on the penis, and after repeated failures to find the *spirochaeta pallida* had assured him that he positively had not syphilis. Knauer advises that we should in all cases look for clinical facts, and also that in cases of suspected syphilis we should wait until the characteristic symptoms appear before making a positive diagnosis, even though we may find the *spirochaeta pallida*.

Zentralblatt für Chirurgie.

1. Concerning the Dosage and Form of Administration of Cocainolates in Lumbar Anæsthesia. By HOLMANN.
2. Concerning the Prothylactic Element of Leucocytes and the Anticysis of Normal Human Blood. By LUCKE.
3. The Treatment of Staphylococcal Ulcers. By KRAUS.
4. Pseudarthrosis of the Styloid Process of the Ulna. By STOFFEL.
5. Perforation of the Duodenum by a Hairpin Which Had Been Swallowed. By MENNACHER.
6. The Acquired Limitations After Healing of Preternatural Anus. By MAYER.
7. Congenital Ankylosis of the Finger Joint. By LÜCKE.
8. Concerning the Role of Mine Infection in the Origin of Epidemic Cerebrospinal Meningitis. By JEHL.
9. Concerning the Schematic Presentation of Conditions of the Lungs. By LERAN.
10. What Do We Know About the Active Agent of Vaccines? By SMITH.

1. Dosage and Form of Administration of Analgesics in Lumbar Anæsthesia. Holmann says that just as good, if not better, results are to be obtained from the use of proportionately smaller doses in weaker solutions, than from the injection of larger doses in stronger solutions.

4. Pseudarthrosis of the Styloid Process of the Ulna. Stoffel presents radiograms of two cases of pseudarthrosis of the ulnar styloid process which followed fracture of the lower end of the radius. In both cases the styloid process had not become reattached by bony union to the distal epiphysis of the ulna, and therefore remained movable, though secured in position by the surrounding ligaments. He is inclined to attribute this failure to unite to interposition of the discus articularis and of the recessus sacciformis.

5. Perforation of the Duodenum by a Hairpin. Mennacher reports the case of a girl, six years old, who entered the hospital with symptoms of serious abdominal trouble. She had swallowed a hairpin several months before, and this was located by means of the x rays, extending from the second lumbar vertebra to the promontory. Laparotomy was performed, and the hairpin, which was found to have perforated the duodenum, was removed. The patient died during the following night.

7. Congenital Ankylosis of the Finger Joint. Lücke describes briefly a case of this nature which he met with in a ten year old boy. The last joint of the little finger of the right hand was ankylosed, the bones were well developed, there were no other signs of faulty development, and there was no history of disease of the joint. There was no family history of similar anomalies.

ZENTRALBLATT FÜR GYNAEKOLOGIE

December 1, 1906.

1. The Treatment of Asphyxia Neonatorum with Oxygen Injections. By OFFERGELD.
2. Remarks on Lichtenstein's Article, "Ætiology of Arterio-sympathetic Constriction of the Duodenum." By H. ALBRECHT.

1. Treatment of Asphyxia Neonatorum.—Offergeld has tried oxygen injections in twelve cases of pallid asphyxia of new born children. The injection of the gas was made direct from the oxygen tank into the central umbilical vein, the pressure from the tank being sufficient to drive the oxygen into the vessel. The re-

sults have been far from satisfactory. Three of the children died of acute cardiac dilatation. The author regards the method as distinctly inferior to artificial respiration and the alternating hot and cold bath.

LA RIFORMA MEDICA

December 1, 1906.

1. Department of Medicine. Treatment of Cardiovascular Affections. By G. G. G. G. G.
2. Department of Pathology. By G. G. G. G. G.
3. Department of Surgery. By G. G. G. G. G.
4. Department of Medicine. By G. G. G. G. G.
5. Department of Medicine. By G. G. G. G. G.

1. No Alcohol for Patients with Heart Disease and Arteriosclerosis.—Galli urges us to avoid the use of alcohol in patients with cardiovascular affections. Alcohol in such cases does not do any good and shortens the patient's life. Many physicians in hospitals, sanatoria, and in private practice give alcohol as a stimulant to cardiac patients, especially when compensation fails. This is wrong. Cardiac patients, even when they have been accustomed to alcohol, can be easily made to abstain from drink, and are none the worse for it. They cannot be compared, as is often done, to morphine or other drug habitués, in whom the sudden withdrawal of the drug is followed by unpleasant consequences. Alcohol, even in small doses, increases the blood pressure, and thus is injurious to the weak heart. It should not even be used in pneumonia, as we have much better and less harmful stimulants.

ROUSSKY VRATCH.

December 1, 1906.

1. Wounds of the Spleen (*To be continued*). By N. N. PETROFF.
2. On the Question of Bile Secretion in Jaundice. By N. N. KIRIKOFF.
3. A Case of Kaposi's Xeroderma Pigmentosum. By V. I. TEREBSKI.
4. An Attempt to Study the Metabolism of Iron in Infants (*To be concluded*). By N. I. KRASNOGORSKI.
5. Extraperitoneal Gunshot Wounds of the Bladder. By M. MARGOLINE.
6. Government Projects in the Reform of Factory Medicine and Sickness Insurance. By N. A. VIGDORTCHIK.

3. A Case of Kaposi's Xeroderma Pigmentosum.—Terebski reports a case of this rare skin affection, which is also known as progressive lenticular melanosis, parchment skin, etc. The disease is divided into the erythematous stage (which may be absent), the stage of pigmented spots; the atrophic cicatricial stage with telangiectases, the stage of wart like growths, and the stage of tumor formation. The spots come on the exposed part of the skin, and usually look like freckles. The skin soon becomes dry, thin, and tense, sometimes it desquamates. Telangiectases and white atrophica spots appear, so that the affected region becomes mottled. The mouth may be distorted, the eyelids averted. Fissures and eczematous patches may appear as complications. Then some nodules appear resembling warts which sometimes degenerate into malignant tumors. This last stage develops at about the fourth year of the disease. In the case reported the stage of tumor formation had been reached, and the growth was removed under cocaine anæsthesia. The microscopical examination of the growth does not add anything new to our knowledge of these growths. The prevailing idea now seems to be that the disease represents a premature senility of the skin, and that the exciting factor is usually some irritant, such as the sun's rays. Their real cause is probably connected with the still unknown causation of malignant growths.

6. Reforms in Medical Care of Factory Operatives.—Vigdortchik discusses the proposed law regulating the medical care of factory employees, and says that, while the law is in some respects a great advance, it is in many features inadequate to cover the needs of factory workmen. He favors the establishment of a sys-

tem of medical aid, both in the shape of hospital facilities and of dispensary service for factory operatives and their families, maintained at the expense of the employers. Compulsory insurance against illness is another important provision of this law which he insists upon.

1. On Pubiotomy, By N. I. POBIEDINSKI.
2. On Pubiotomy, By S. S. Kholmogoroff.
3. Wounds of the Spleen (*Concluded*), By N. N. PETROFF.
4. The Clinical Features and the Diagnosis of Diaphragmatic Hernia, By V. V. VINOGRADOFF.
5. An Attempt to Study the Metabolism of Iron in Infants (*Concluded*), By N. I. KRASNOGORSKI.
6. The Reform of Factory Medicine and Sickness Insurance of Workmen (*Continued*), By N. A. VIGDORTCHIK.

1 and 2. On Pubiotomy.—Pobiedinski prefers pubiotomy, i. e., a lateral incision of the pubic arch, to the old method of symphysiotomy. Pubiotomy (pubiotomia, or more correctly, hebdomia from the Greek name of the os pubis, ὀσὶς ἡβῆς ὀστού) was first advocated by Gigli in 1894, applying an old idea of Campion, of Bar-le-Duc, in the beginning of the last century. Gigli described a suitable instrument for this operation. Its advantages are said to be that the cut is not made in the median line, and thus the natural support of the bladder and urethra (pubovesical ligament, etc.) is not severed. Owing to the fact that the soft parts are thicker at the sides, a lateral cut is not so apt to tear through into the vagina as a median cut. The lateral operation is also less apt to be followed by serious bleeding. The adductor muscles also tend to prevent an extensive displacement of the pelvic fragments. Healing is more rapid when the cut surfaces are bony than when we cut through a joint which may be easily infected. Bonardi, in 1897, was the first to practise this operation on the living. In 1906 Kannegiesser collected 148 published cases, including 11 cases operated on in Russia. The procedure is as yet in the experimental stage, and its technique has not yet been fully worked out. As yet the results are by no means so favorable as to supplant Cæsarean section or craniotomy by the new method. The author reports one case in which he performed pubiotomy for a pelvic contraction of the second degree. He thinks that the subcutaneous method advocated by some surgeons is not the best, and that it gives rise often to unsuitably severed bones or to wounds of the urethra or the vagina. The open method gives a better chance to locate the incision and avoids complications. In his opinion Cæsarean section now offers a better chance to save both mother and child in cases of very narrow pelvis.—Kholmogoroff reports one case in which he performed the operation. The recovery was uneventful. The author warns surgeons not to undertake this operation lightly, as it is followed by septic complications in a considerable percentage of cases. The general maternal mortality as now estimated is 5.8 per cent.; the mortality of the children 17.39 per cent. As the operation is performed solely in the interest of the child it should not be undertaken in women with too narrow pelves. The lowest limits of diameters for such pelves as given by Stoeckel are correct, in Kholmogoroff's opinion, namely, 8 cm. for the true conjugate in rachitic flat pelves and 8.5 cm. in justominors.

5. Metabolism of Iron in Infants.—Krasnogorski concludes an elaborate study of the metabolism of iron with the following postulates: The compounds of iron in mothers' milk are much more readily absorbed by infants than the same compounds in goats' milk. Infants absorb much more iron from raw milk than they do from boiled milk. Although mothers' milk contains a small percentage of iron this is compensated by the more rapid absorption of iron from breast milk. Raw goats' milk does not furnish a sufficient amount of iron

for the maintenance of health in infants. Spinach and the yolks of eggs also contain readily absorbable iron for infants, but are less valuable in this respect than mothers' milk. The natural iron in the food is much more readily absorbed by infants than the iron preparation manufactured by chemists. The insufficient supply of iron to infants may lead to serious nutritive disorders, disturbances of growth, and to anæmia.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

January, 1907.

1. Principles Underlying the Surgery of the Stomach and Associated Viscera, By W. J. MAYO.
2. Paravertebral Triangle of Dulness in Pleural Effusion (Grocco's Sign), By W. E. THAYER and M. FABYAN.
3. Adams-Stokes Disease (Heart Block) Due to a Gumma in the Interventricular Septum, By T. G. ASHTON, G. W. NORRIS, and R. S. LAVENSON.
4. The Pathological Physiology of Chronic Arterial Hypertension and Its Treatment, By T. C. JANEWAY.
5. Inorganic Late Systolic Pulmonary Murmurs in Infancy and Childhood, By S. MACHAMILL and T. LE BOUTILLIER.
6. Paroxysmal Irregularity of the Heart and Auricular Fibrillation, By A. R. CUSHNY and C. W. EDMUNDS.
7. Hemochromatosis with Diabetes Mellitus, By T. B. FUTCHER.
8. Acute Pulmonary Œdema with Special Reference to a Recurrent Form, By D. RIESMAN.
9. The Nature of Aplastic Anæmia and Its Relation to Other Anæmias, By R. S. LAVENSON.
10. Studies in the Natural and Artificial Inhibition of Peptic Digestion, By J. SAILER and G. B. FARR.
11. Acute Unilateral Septic Pyelonephritis, By D. N. EISENDRATH.
12. Gastric Ulcer in Childhood, By H. ADLER.

1. Surgery of the Stomach and Associated Viscera.—Mayo believes that clinical surgery, as applied to the stomach, lacks an accurate physiological and pathological basis. The explanation of the good results which have followed operation for certain diseased conditions has not been apparent, this being especially true with respect to function. The knowledge which is founded upon the study of the dead is often unsatisfactory, inasmuch as complications and terminal infections may have obscured the initial lesion. The immediate cause of death is often only remotely related to the primary condition which set in motion the one which proved fatal. Recent surgery has established the pathology of the living. It has cleared up three great avenues of peritoneal infection, the Falloppian tube, the appendix, and the gallbladder, and it is now investigating the stomach. Infection, however, plays a small part in the pathology of the stomach. The gap between the post mortem study and the clinical findings must be bridged by experiments upon animals. Function rather than form is that which is now being investigated. The author's paper is designed to bring together and correlate the undigested facts in embryology, anatomy, physiology, and pathology, which bear upon the practical surgery of the stomach.

4. Chronic Arterial Hypertension.—Janeway states that persistent high blood pressure, though only a symptom is a cause of important secondary lesions in the heart and vessels. It is common in nephritis, less common in arteriosclerosis, and is the chief feature with certain cardiovascular lesions which, however, show no renal involvement. As to the physiological mechanism it is a necessity in arteriosclerosis in order to maintain an adequate abdominal circulation. In nephritis the anatomical lesions found in the smaller arteries seem adequate to cause the hypertension which is observed in many of the chronic cases. The origin of this condition is not known. It is suggested that it expresses an attempt of the organism to maintain an adequate speed of capillary flow through the kidney or any other important organ, such as would be impossible without

it. Whatever its necessity, as a compensatory condition it must be followed by important changes in the circulatory organs, both in structure and function. It increases the danger of arterial rupture at any weak point, it impairs vasomotor regulation, and may cause cures attended with anginal pain. Three lines of treatment are suggested and elaborated, preventive, adjuvant, and emergent.

6. Paroxysmal Irregularity of the Heart and Auricular Fibrillation.—Cushny and Edmunds describe a case of paroxysmal arrhythmia with marked acceleration of the heart. The regularity is shown to be due to irregular discharge of impulses and not to defects in the contraction of the ventricle. A similar form of irregularity in the dog's heart is described, which is shown to be due to the fact that the ventricles receive irregular stimuli from the auricle which is in a state of fibrillation. This form of arrhythmia in dogs occasionally is due to peripheral irritation which probably gives rise to reflex inhibition of the vagus centre which, acting on an abnormal heart, causes auricular fibrillation. It is therefore concluded that in cases of paroxysmal arrhythmia the condition is due to auricular fibrillation from inhibition of the vagus centre.

7. Hæmochromatosis with Diabetes Mellitus.—Futcher observes that in the final stages of this condition a triad of symptoms is to be observed: 1. Pigmentation of the viscera, and usually of the skin. 2. Hypertrophic cirrhosis of the liver and occasionally atrophic cirrhosis. 3. Diabetes mellitus which is a terminal feature due to sclerosis of the pancreas causing destruction of the islands of Langerhans and consequent interference with the secretion of the normal glycolytic ferment. Death usually occurs within a year from the onset of the diabetic symptoms. The majority of writers believe that hæmochromatosis is due to a toxic agent of unknown character and origin which results in increased destruction of the red blood cells and deposition of hæmosiderin and hæmofuscin in the body tissues. It is not known whether the changes in the liver and pancreas are due to the deposition of pigment or to the same toxic agent which is supposed to cause the destruction of the blood cells. The excessive amount of iron in the tissues may be due to defective elimination rather than to increased formation in the blood.

8. Acute Pulmonary Œdema.—Riesman draws the following conclusions: 1. There is an acute pulmonary œdema which occurs without any apparent exciting cause, and frequently destroys life in a very short time. 2. Recovery from such an attack frequently takes place, but there is a tendency to its recurrence, with symptoms similar to those of the first attack. It may come suddenly, perhaps at night, and with danger to life. 3. Arteriosclerosis, cardiac, and renal disease are the most important among the clinical causes. 4. The pathogenesis is obscure, but vasomotor disturbances and disproportionate activity of the two ventricles are the chief factors, the right ventricle being most deranged. 5. The chief symptoms are distressing dyspnoea, cyanosis, cough, expectoration of frothy albuminous fluid, and profound prostration. The moist râles of œdema are quite noticeable, especially over the upper portions of the lungs. 6. The most important remedies are bleeding, dry cupping, and cardiac stimulants. 7. This condition is of sufficient importance to receive special attention in textbooks on internal medicine.

9. Aplastic Anæmia.—Lavenson concludes his paper with the following propositions: 1. Aplastic anæmia is a variety of progressive pernicious anæmia. 2. Its essential features are the following: A rapidly fatal course, a marked reduction in the number of red corpuscles, a greater proportionate reduction in the amount of hæmoglobin resulting in a low color index, a leucopenia with a relative lymphocytosis, an absence of me-

galoblasts, and usually of normoblasts. Post mortem there is a pale bone marrow in which the signs of erythrocytic and granulated leucocytic formation are wanting. 3. The differences between aplastic anæmia and the usual form of progressive pernicious anæmia result entirely from the absence of regenerative processes in the former. 4. The blood picture in aplastic anæmia results from hæmocytolysis on the one hand and the failure of the bone marrow to regenerate on the other. 5. The failure of the blood elements of the bone marrow to regenerate is the result of one of the three following conditions, a simple deficiency of the regenerative powers, an inhibitive action on the bone marrow by the factors which cause destruction of the blood elements, and a true aplasia of the bone marrow. If there should be a true aplasia it would probably be of recent origin, for if it had been of long duration there would probably be manifestations of a deficiency in blood formation before the advent of the hæmolytic agent. 6. The relations of lymphocytes to leucocytes and red blood corpuscles in aplastic anæmia are corroborative evidence that lymphocytes are not a specific product of the bone marrow.

10. The Natural and Artificial Inhibition of Peptic Digestion.—Sailer and Farr found by their studies as to the inhibition by food and the products of its digestion that albumen produces no inhibition during digestion; that albumoses have a strong inhibitory effect which is not active in the stomach under normal conditions, but may be a serious factor in abnormal conditions; that gelatine has a distinct inhibitory effect; that maltose has the strongest inhibitory effect of the sugars, and lactose none at all; that the hydrocarbons do not inhibit when added to the gastric contents. The conclusion from the foregoing is that something other than food interferes with gastric digestion. It is not deficient secretion of pepsin, but is probably something which prevents the active influence of pepsinogen or the lack of something which is necessary to such influence. With regard to the inhibitory action of food preservatives boric acid and borax have no effect upon peptic digestion; formaldehyde and alcohol inhibit only when very concentrated; salicylic acid inhibits even in very dilute solution; benzoic acid, sodium benzoate, and sodium sulphite have a very positive inhibitory influence; resorcin inhibits slightly; creosote inhibits positively even in great dilution, but guaiacol carbonate has no inhibitory influence at all.

New Inventions.

THE THYROTOME.

By JEROME M. LYNCH, M. D.,

Lecturer on Rectal Surgery, New York Polyclinic; Assistant Attending Surgeon, St. Bartholomew's.

This new instrument—the thyrotome—is devised on the principle of the electrocautery, and is for the purposes of dividing rectal strictures of the umbrella type; hypertrophied valves of Houston, polypi, and especially of stopping hæmorrhage from folds of mucous membrane, which cannot be grasped with a forceps.

The thyrotome consists of a shaft composed of two parts, one sliding upon the other, and each ending in an approximating jaw at right angle to the long axis. These jaws may be approximated when the instrument closes. The lower shaft is fixed, and is attached to the handle of the instrument, through which electric connections are made. These are carried through the lower shaft, ending in a platform in the lower jaw, which is the heating part of the instrument. Since it is not desirable to have the same degree of heat as is necessary in an ordinary or actual cautery, the platinum

terminal is covered by moderately thick copper plate, through which heat is transmitted. The upper shaft slides on the lower, by means of a ratchet and a key fitted to its handle extremity. By means of this key and ratchet the jaws are separated and approximated, and pressure between the jaws exerted.

After the rectal speculum is in place, the tissue to be divided is selected; the jaws of the instrument are separated, and the thyrotome is then passed through the speculum until the upper jaw passes above the valve or fold of tissue on which it is proposed to operate. The jaws of the instrument are then brought together by means of the ratchet, and, when a good grip is obtained, the electric connection is made and the current turned on.

It takes from three or four minutes, with a moder-

Proceedings of Societies.

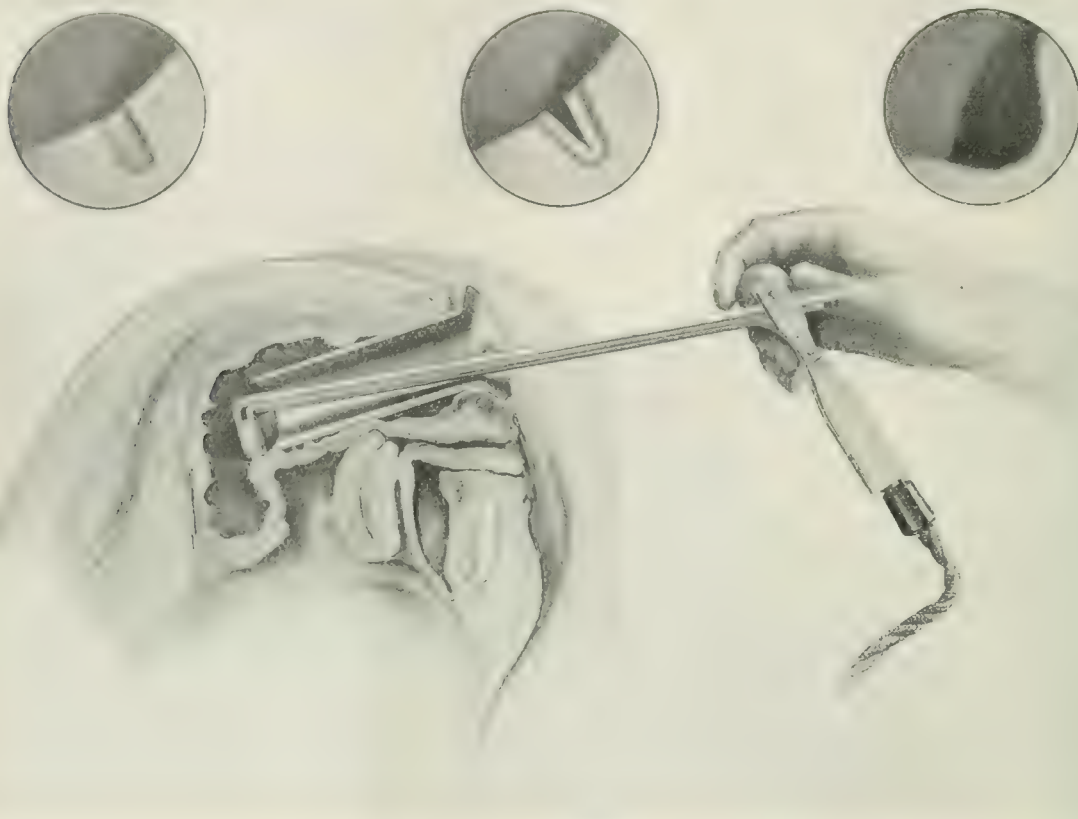
PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of November 14, 1906.

The President, Dr. CHARLES K. MILLS, in the Chair.

The Diagnosis and Treatment of Multiple Neuritis.—

Dr. F. X. DERGUM said that in ordinary practice the diagnosis of multiple neuritis presented little difficulty, the peculiar character of the palsy and the involvement of the distal portions of the extremities both in pain and motion, leaving no doubt as to the diagnosis. In certain cases, however, in which involvement of the sensory fibres predominated, there might be



Dr. Lynch's Thyrotome.

ate heat, to thoroughly sear the tissue. Afterwards, by means of a knife with a long handle, the valve is divided through the centre of the seared portion. It is not absolutely necessary to divide the valve with a knife, as the seared portion will slough off within a few days; but, by cutting, immediate relief of the obstruction is, of course, obtained.

The advantages of this instrument over the Pennington clip, when used for the same purpose, are: (1) The instrument may be had for the cost of a half dozen clips, and lasts for a lifetime; (2) the valve may be divided at one sitting, whereas it takes a clip several days to cut through, and it often happens that the clip must be applied two or three times before the valve is satisfactorily divided; and (3) its field of usefulness is not limited to one operation. Over the electrocautery, the advantages of the thyrotome are: (1) An absence of hæmorrhage; and (2) the heat generated is about a twentieth part of that of the cautery, yet it does the work more effectually.

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the suggestion of tabes. The possibility of confounding multiple neuritis with true tabes was said to be increased by the fact that in tabes itself peripheral neuritides were frequent and played an important part in the causation of various motor and sensory symptoms. The condition was to be distinguished from poliomyelitis, which attacked at once both upper, both lower, or all four extremities, and the paralysis in which was accentuated in the portions of the limbs nearest the trunk. Points of distinction from general myelitis and from Landry's palsy were also fully given.

In all forms of multiple neuritis, whatever the origin, in treatment absolute rest in bed was declared to be imperative. Attention should be given to the position and proper support of the limbs for the relief of pain, and if necessary the coal tar analgetics or morphine used for a short time and as sparingly as possible. The removal of the cause constituted the next step in treatment. With a diathetic cause, such as rheumatism, appropriate treatment should be adopted. In most cases he advised the free administration of diaphoretics, such

as neutral sulfate. At the subsidence of the initial stage the free use of salicylic acid and its compounds was of advantage. The drug should be administered in a way least irritating to the stomach. In alcoholic patients this point was of paramount importance. The heart should be carefully watched. In the subacute or chronic stage the administration of moderate doses of mercuric chloride, . . . of a grain, or of potassium iodide, from 5 to 15 grains, three times daily, or of both these drugs together was advised. Long continued administration of small doses of the mercurial had given Dr. Dercum especially good results. To combat the customary loss of weight the proper remedies were enumerated. During the entire course of treatment the principles of the "rest cure" should, so far as possible, be allied, and as the pain and hyperesthesia subsided massage should be employed. When only muscular weakness remained electricity should be employed. Contracture of the limbs could be overcome by passive movements and massage if applied for a sufficient length of time. Foot drop should be corrected. A complete cure was regarded as by no means infrequent.

The Polyneuritic Psychosis (Korsakoff's Disease).—Dr. WILLIAM PICKETT spoke briefly upon this subject, saying that in the proper conception of Korsakoff's disease there should first be considered a typical alcoholic peripheral neuritis with wrist drop and foot drop and a peculiar mental state, the essence of which consisted of fabrication or pseudoreminiscence. He gave some statistics of the disease in a number of cases of peripheral neuritis. Eighty-seven were cases of ordinary alcoholic neuritis; 22 were cases of well marked Korsakoff's disease. There were two cases of alcoholic neuritis with delirium, and without the peculiar mental state. One case of Korsakoff's disease was most typical, and in this the habits were a combination of alcoholism and morphinism, the morphine taken reaching the extraordinary amount of forty grains a day. In one case of Korsakoff's disease there was paralysis of both external recti of the eyes. Careful study would show a considerable number of ocular paralyses in the disease. While a certain percentage of patients recovered so far as could be observed, improvement was very slow.

Peroneal Palsy Following Childbirth.—Dr. JAMES HENDRIE LLOYD read a paper on this subject (see vol. lxxxiv, page 1209).

The Causation of Senility and Its Treatment by Hygienic and Therapeutic Measures.—Dr. ARNOLD LORAND, of Carlsbad, Austria, said that there existed in old age a condition of chronic auto-intoxication which was caused by the degeneration of the ductless glands. The antitoxic properties of the ductless glands had been demonstrated by the investigations of experimental pathology. The treatment of senility consisted in the prevention of the agencies which were deleterious to the ductless glands, such as infectious diseases, overnutrition, especially by large quantities of meat, sexual excess, frequent pregnancies, prolonged lactation, emotions, and alcohol in large quantities. There should be mixed diet with much milk, little meat, cereals, stewed and fresh fruit, and vegetables. Elimination of the toxic products by stimulating the action of the intestines, skin, and kidneys should be carried on. Special care should be taken to avoid substances irritating to the kidneys and which might cause desquamation of the epithelium with casts and albuminuria. Among such substances were condiments, strong sauces, black tea in large quantities, alcohol, and too many drugs. The author advocated organotherapeutics based on the knowledge of the physiology of the ductless glands by small doses of the fresh thyroid, ovarian, and adrenal glands, and kidney extracts.

Abstracts of New Literature

Cataphoric Sterilization in Cancer; Reports of Cases and Results.—Dr. G. BERTON MASSEY reported the final results of twenty-nine cases of basal cell carcinoma and sarcoma treated by electrochemical sterilization (zinc-mercury cataphoresis) prior to January, 1905, and the provisional results of sixty-one cases treated since that date by the same method.

Of the first series, 66.6 per cent. of epitheliomas show no evidence of disease after periods varying from twelve to three years; 15.8 per cent. of carcinomas; and 30 per cent. of sarcomas. Of the second series, the results at the end of the first year were: No evidence of disease showing in 81 per cent. of epitheliomas; 31.8 per cent. of carcinomas; and 14.2 per cent. of sarcomas. The true field of the method was said to be in the destruction of small growths at their first manifestation.

Congenital Dislocation of the Hip.—Dr. OSCAR H. ALLIS, in this paper, objected to the term congenital, as it was vague and misleading and too often confounded with embryonic. He thought it would be more nearly exact to speak of such conditions as embryonic as occurring during the first month and a half, and foetal as embracing the remainder of the term of gestation. He emphasized the fact that embryonic defects were incapable of repair, that the surgeon could patch up but not rectify the deficiencies, and illustrated his remark by harelip, extrophy of the bladder, and armless and legless children. He contrasted the defects of the embryonic stage with injuries in the foetal stage, and said that the latter occurred to perfect individuals and were thus capable of complete repair, and concluded by arguing that, as so called congenital dislocations were capable of perfect cure, they could not be classed among embryonic defects. If not embryonic, they must occur at some time during the foetal term, the most likely time being during the active stage of labor. He considered that the uterus which could drive a fetus through a contracted pelvis, and which often rent its walls by efforts to expel the contents, was sufficient to dislocate the hips if the contractions could catch the knees at right angles to the pelvis. He reviewed the methods of Dr. Lorenz by which the dislocated thigh was first superflexed, then superextended, and finally superabducted, with the result of tearing in two any and every opposing muscle or fascia or obstruction. The limb was then strongly extended longitudinally by an assistant while the head was driven into the socket by the surgeon by means of direct pressure on the great trochanter.

Dr. Allis then exhibited a lever with a spring balance which he used in making perpendicular traction without any preliminary laceration of tissues. The advantage of the lever and spring balance over manual traction was stated to lie in the fact that the surgeon could see at every stage of the procedure the amount of traction he was exerting, and by means of a lever continue the traction with perfect ease for an indefinite time.

A Study of the Urinary Analysis of Operative Cases and the Treatment of Complications Arising from Kidney Insufficiency.—Dr. STEPHEN B. TRACY read this paper (see page 112).

Book Notices.

Untersuchung über Muskelzustände. Von Professor RIEGER. Begrüssungsschrift dem zweiten Kongress für experimentelle Psychologie, Würzburg. Jena: Gustav Fischer. (Price, 2 marks.)

The author here presents a preliminary paper on muscular conditions taken under what he terms natural conditions, in contradistinction to the unnatural conditions surrounding physiological muscle experiments.

He outlines his methods solely, illustrating the paper richly with diagrams and pictures of psychological methods of analysis. He promises to give later the results of his inquiries into different muscular states, notably the altered muscular tonus of catatonics, but the present presentation is purely introductory.

A Treatise on the Motor Apparatus of the Eyes. Embracing an Exposition of the Anomalies of the Ocular Adjustments and their Treatment, with the Anatomy and Physiology of the Muscles and their Accessories. By GEORGE T. STEVENS, M. D., PH. D. Illustrated with 184 Engravings, some in Colors. Philadelphia: F. A. Davis Company, 1906. Pp. xiv-496.

This volume contains an unusually complete and thorough presentation of a subject full of interest to the practical ophthalmologist and not less full of theoretical complexity. The author has, as is well known, devoted many years to this study, and has evolved a nomenclature and a number of clinical instruments in connection with it. He believes that a practical acquaintance with the principles and practice included here will promote the more systematic development of the central doctrine of his work on *Functional Nervous Diseases*, which was that difficulties of adjustments of the eyes were a source of nervous trouble, and more frequently than other conditions constituted a neuro-pathic tendency. While the medical world of to-day is inclined to take this dictum *cum grano salis*, it cannot fail to gain much valuable information from a study of Stevens's monograph.

Operationen am Ohr. Die Operationen bei Mittelohr-eiterungen und ihren intrakraniellen Komplikationen. Für Aerzte und Studierende. Von Dr. B. HEINE, a. o. Professor an der Universität und Direktor der Universitäts-Ohren-Poliklinik zu Königsberg i/Pr. Zweite, neubearbeitete Auflage. Mit 29 Abbildungen im Text und 7 Tafeln. Berlin: S. Karger, 1906. Pp. viii-197.

The first edition of Heine's work was greeted as an authoritative presentation of aural surgery as practised by Lucae and his followers at the University of Berlin. It was characterized by a broad view of the subject, large personal experience, and a scientific spirit, which, fortunately, found expression in a more than usually clear and terse style. The present volume has been amplified by a chapter on the treatment of acute mastoiditis by congestive hyperæmia (Bier), while the subjects of labyrinthine suppuration and meningeal complications have been revised in accordance with the latest observations. The various operations are clearly described and illustrated by a large number of drawings. To each section is appended a synopsis of symptomatology, indications, complications, possible accidents, after treatment, and a critique of the therapeutic value of the surgical procedure.

Medizinische Anwendungen der Elektrizität. Von M. U. Dr. S. JELLINEK, Assistent des k. k. Krankenhauses Wieden in Wien, beiderer ärztlicher Sachverständiger für elektrisches Unfallwesen beim k. k. Landesgericht, Wien. Mit 149 Abbildungen im Text. München und Berlin: R. Oldenbourg, 1906. Pp. xix-458.

The book before us is the third of a series treating of the technics of weak currents, edited by J. Baumann, of Munich, and Dr. L. Rellstab, of Schöneberg-Berlin. In vol. i J. Baumann speaks of the elective call in telephone and telegraph conduction and of the development of telephony; the second volume is a translation by J. Baumann of an original of Mazzotto on wireless telegraphy and telephony. Five more volumes are to follow.

Our book is a compendium and textbook on the medi-

cal use of electricity, as thorough and complete as such a book can be, when we take into consideration the rapid strides and changes made in this science. How large this field is is shown by a list of over six hundred reference books and essays, although the list is not by any means complete. After giving a short synopsis of the history of the use of electricity in medicine the author describes fully and explicitly what electricity means, its emanations, how to produce it, its sources, the apparatus, the instruments of application, and how to make use of its power. This is contained in 119 pages, and will be of great help to any one who wishes to study this branch of electrology, the author assuming the rôle of a teacher introducing his pupil into a new study; and the reader will soon find out how well conversant his teacher is with his subject. This is followed by the Röntgen ray technics and electrophysiology, and finally there are considered the use of electricity in diagnosis and the therapeutical value of electricity and the Röntgen ray. The author is careful not to assert anything; he acts as a reporter who gives the experiments, the experience, and the results obtained by experimenters and practical electrophysicians.

But the πάντα πεῖ is only too true in such a book.

BOOKS, PAMPHLETS, ETC., RECEIVED.

Midwifery for Nurses. By Henry Russell Andrews, M. D., B. S. Lond., M. R. C. P. Lond., Assistant Obstetric Physician to and Lecturer to Pupil Midwives at the London Hospital, etc. New York: Longmans, Green, & Co., 1906.

Die Therapie der Haut- und Geschlechtskrankheiten für praktische Aerzte. Von Dr. Reinhold Ledermann, Spezialarzt für Hautkrankheiten in Berlin. Dritte durchgesehene und erweiterte Auflage des therapeutischen Vademekum der Haut- und Geschlechtskrankheiten. Berlin: Oscar Coblentz, 1907.

A Guide to Diseases of the Nose and Throat and Their Treatment. By Charles A. Parker, F. R. C. S. Edin., Surgeon to the Throat Hospital, London. New York: Longmans, Green, & Co.

Helouan, an Egyptian Health Resort and How to Reach It. By H. Overton Hobson, M. D. (Edin.), Egyptian Government Medical Director of the Baths, Helouan; Examiner in Medicine, Egyptian Government School of Medicine, Cairo, etc. New York: Longmans, Green, & Co., 1906.

Handbuch der Tropenkrankheiten. Unter Mitwirkung von Prof. Dr. A. Baelz, Tokyo, et al. Herausgegeben von Dr. Carl Mense, Kassel. Dritter Band. Leipzig: Johann Ambrosius Barth, 1906.

A Treatise on Surgery. By George Ryerson Fowler, M. D., Examiner in Surgery, Board of Regents of the University of the State of New York, etc. Two Volumes. Philadelphia: W. B. Saunders Company, 1907.

Tumors, Innocent and Malignant. Their Clinical Character and Appropriate Treatment. By J. Bland-Sutton, F. R. C. S., Surgeon to and Member of the Cancer Investigation Committee of the Middlesex Hospital, London, etc. Fourth Edition. Chicago: W. T. Keener & Co., 1907.

Report of the Government Bacteriologist, 1904-1905. Pietermaritzburg: Times Printing and Publishing Company, Limited, 1906.

Diseases of Children. A Manual for Students and Practitioners. By George M. Tuttle, M. D., Attending Physician to St. Luke's Hospital, St. Louis, etc. Series edited by Bern B. Gallaudet, M. D., Demonstrator of Anatomy and Instructor in Surgery, College of Physicians and Surgeons, Columbia University, New York, etc. Second Edition, Revised and Enlarged. Philadelphia: Lea Brothers & Co., 1907.

Tumors of the Cerebrum. Their Focal Diagnosis and Surgical Treatment. By Charles K. Mills, M. D., Charles H. Frazier, M. D., William G. Spiller, M. D., George E. de Schweinitz, M. D., and Theodore H. Weisenburg, M. D. Reprinted from the *University of Pennsylvania Medical Bulletin*, April-May, 1906. Philadelphia: Edward Pennock, 1906.

Public Health and Marine Mammals: Trends, 1960-1970
Week ending January 11, 1971

Pregnancy with Ovarian Tumor.—Aguilar (*Gac. Med. de Granada*, 1900, May 20) reports an interesting case in which pregnancy was complicated by a cyst of the left ovary weighing 34 pounds with two and a half turns in the pedicle, hæmorrhage into the cyst, and extensive gangrene of the wall. A living child, weighing 3,369 kilogrammes, was born by natural labor thirty-two hours after ovariectomy, and the woman recovered. Through *The British Gynaecological Journal*.

The International Seismological Association.—Professor Harry Fielding Reid, of Johns Hopkins University, who is in charge of earthquake records for the United States Geological Survey, has sent out circular letters through which he expects to obtain important scientific data concerning the recent earthquake in San Francisco. It may not be generally known that a few hundred dollars are devoted each year by the survey to the collection of records concerning earthquakes. No very active seismological investigations have ever been made by his bureau, but a small allotment is granted Professor Reid, which enables him to correspond with observers all over the country and procure data recorded on seismographs at many different points. Reports of his investigations are published from time to time in the *Weather Review*, the official organ of the Weather Bureau. It is interesting to note that Professor Reid was appointed by the State Department as delegate from the United States to the International Seismological Conference, held in Strassburg, Germany, from July 24 to 28, 1903. Delegates were present by invitation of the German government from nineteen countries, and an international association was then formed for cooperative investigation of earthquake phenomena. The constitution adopted provides for a general assembly, to meet at least once in four years, and a permanent commission, composed of one delegate from each nation, which will direct the work of the association. A central bureau is located at Strassburg in connection with the Imperial Seismological Station there, and reports are forwarded to its director and are published from time to time. The association was joined by many countries, but the United States has not yet signified its intention of becoming a member. The permanent commission, or executive committee, of the association was organized in Berlin last summer. Professor Reid was present at this meeting also. After his return he recommended, as he did after his return from the Strassburg conference, that the United States join the association. The director of the Geological Survey has recommended in a letter to the Secretary of the Interior that the United States accept the invitation of the German government to join the International Seismological Association, provided that Congress shall see fit to make the necessary appropriation. The total sum that Congress is called on to appropriate annually is \$1,300, which includes \$800, the fee that the United States would be required to contribute to the association, and \$500 for the expense of the delegate. It is not likely that a delegate from the United States will ever have anything more important or more disastrous to report than the records of the earthquake which devastated the metropolis of the Pacific coast.—*Journal of the Franklin Institute*, November, 1906.

Public Health and Marine Hospital Service
Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon-General.

Smallpox—United States.			
Place.	Date.	Cases.	Deaths.
California—Los Angeles...	Dec. 22-29...	1	
California—San Francisco...	Dec. 8-15...	1	
Georgia—Atlanta...	Dec. 25-Jan. 1...	10	
Illinois—Albion...	Nov. 16...	1	
Illinois—Chicago...	Dec. 22-29...	1	
Illinois—Cincinnati...	Dec. 22-Jan. 5...	18	
Illinois—Madison...	Dec. 27-Nov. 9...	5	
Illinois—Albion and vicinity...	Jan. 7...		Present.
Indiana—South Bend...	Dec. 22-Jan. 5...	5	
Kansas—Garden City...	Nov. 1-10...	41	
Louisiana—New Orleans...	Dec. 29-Jan. 5...	2	
New York—New York...	Dec. 22-Jan. 5...	6	
Texas—Houston...	Dec. 29-Jan. 5...	2	
Texas—Houston...	Dec. 29-Jan. 5...	6	
Virginia—Louisa County...	Nov. 22-29...	6	
Washington—Seattle...	Dec. 22-29...	6	
Wisconsin—Madison...	Dec. 15-Jan. 5...	23	
Smallpox—Foreign.			
Africa—Cape Town...	Nov. 10-24...	4	
Brazil—Rio de Janeiro...	Nov. 24-Dec. 8...	7	
Brazil—Pernambuco...	Nov. 1-15...	2	
Brazil—Rio de Janeiro...	Nov. 11-Dec. 8...	5	2
China—Canton...	Nov. 15-20...	28	2
China—Tientsin...	Nov. 21-Dec. 15...		Present.
France—Paris...	Dec. 1-8...	12	
Gibraltar...	Dec. 2-9...		Imported.
Great Britain—Manchester...	Dec. 15-22...	1	
India—Calcutta...	Nov. 23-Dec. 1...	3	
India—Madras...	Dec. 1-7...	3	
Italy—Genoa...	Nov. 22-Dec. 1...	14	
Russia—Odessa...	Dec. 1-8...	17	2
Russia—St. Petersburg...	Nov. 13-Dec. 1...	6	
Spain—Barcelona...	Nov. 1-10...	5	
Spain—Cádiz...	Nov. 1-30...	3	
Spain—Seville...	Nov. 1-20...	13	
Syria—Beirut...	Dec. 8-15...		Present.
Yellow Fever—Foreign.			
Cuba—Habana...	Dec. 26...	1	
Cuba—Santa Clara...	Jan. 8...	1	
Cholera—Foreign.			
India—Bombay...	Nov. 24-Dec. 8...		12
India—Rangoon...	Nov. 24-Dec. 1...		11
Plague—Foreign.			
Chile—Antofagasta...	Nov. 26-Dec. 9...	4	3
Egypt—Alexandria...	Dec. 4-18...	4	1
Egypt—Gharieh...	Dec. 11...	1	1
Egypt—Gharieh...	Dec. 11...	1	1
Egypt—Ketch...	Dec. 7-20...	26	22
Egypt—Menaouieh...	Dec. 10-18...	11	7
India—General...	Nov. 17-24...	6,941	5,300
India—Bombay...	Nov. 28-Dec. 8...		18
India—Calcutta...	Nov. 24-Dec. 1...		14
India—Rangoon...	Nov. 24-Dec. 1...		18
Japan—Kobe...	Nov. 24-Dec. 8...	2	1
Mauritius...	Oct. 4-Nov. 8...	112	5

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service for the seven days ending January 9, 1907:

ANDERSON, J. F., Passed Assistant Surgeon. Directed to proceed to Detroit, Mich., for special temporary duty, upon completion of which to rejoin station.

BARNES, W., Acting Assistant Surgeon. Granted leave of absence for nine days, from January 1, 1907.

COLLINS, G. L., Assistant Surgeon. Granted two days' leave of absence, January 7th and 8th.

GEDDINGS, H. D., Assistant Surgeon General. Directed to proceed to Charleston, S. C., for special duty, upon completion of which to rejoin station.

GRUBBS, S. B., Passed Assistant Surgeon. Granted one day's leave of absence, January 7, 1907.

GUITERAS, C. M., Surgeon. Granted leave of absence for seven days, from January 8, 1907.

HOLSENDORF, B. E., Pharmacist. Granted leave of absence for thirty days, from January 1, 1907.

LAVINDER, C. H., Passed Assistant Surgeon. Granted leave of absence for seven days.

LAVINDER, C. H., Passed Assistant Surgeon. Granted an extension of leave of absence for seven days.

LYALL, R., Acting Assistant Surgeon. Granted leave of absence for four days in December, 1906, under Paragraph 210 of the Regulations.

RANSOM, S. A., Acting Assistant Surgeon. Granted leave of absence for twenty days, from January 1, 1907.

STEARNS, H. H., Acting Assistant Surgeon. Granted leave of absence for twenty days, from December 22, 1898.

STEAKNS, H. H., Acting Assistant Surgeon. Granted leave from duty at the Naval Hospital, Brooklyn, N. Y., from January 1, 1907.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending January 12, 1907.

BINGHAM, E. G., First Lieutenant and Assistant Surgeon. Relieved from duty in the Philippines Division, ordered to proceed on the first available transport sailing from Manila, after April 1, 1907, to San Francisco, Cal., and upon arrival to report by telegraph to the Military Secretary of the Army for further orders.

CRAMPTON, LOUIS W., Lieutenant Colonel and Deputy Surgeon General. Granted two months' leave of absence, to take effect about January 21, 1907.

DAVIDSON, WILSON T., Captain and Assistant Surgeon. Leave of absence extended fifteen days.

DUVAL, DOUGLAS F., Captain and Assistant Surgeon. Granted leave of absence for thirty days.

HALLORAN, PAUL S., First Lieutenant and Assistant Surgeon. Ordered to proceed from Fort Leavenworth, Kas., to St. Louis, Mo., and assume charge of the medical supply depot in that city during the absence of Lieutenant Colonel Louis W. Crampton, deputy surgeon general.

LITTLE, WILLIAM L., Captain and Assistant Surgeon. Advanced to the rank of captain, from January 6, 1907.

MORRIS, S. J., First Lieutenant and Assistant Surgeon. Relieved from duty on the transport *Sumner*, and from further duty at Fort Schuyler, N. Y., and ordered to Fort Washington, Md., for duty.

PIPES, HENRY F., First Lieutenant and Assistant Surgeon. Relieved from duty in the Philippines Division, ordered to proceed on the first available transport sailing from Manila, after April 1, 1907, to San Francisco, Cal., and upon arrival to report by telegraph to the Military Secretary of the Army for further orders.

PURVIANCE, WILLIAM E., Major and Surgeon. Relieved from duty in the Philippines Division, ordered to proceed on the first available transport sailing from Manila, after April 1, 1907, to San Francisco, Cal., and upon arrival to report by telegraph to the Military Secretary of the Army for further orders.

WILSON, COMPTON, First Lieutenant and Assistant Surgeon. Ordered to report in person on Tuesday, February 19, 1907, to Major William S. Borden, surgeon, president of the examining board, Washington, D. C., for re-examination for advancement.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending January 12, 1907:

BLACKWELL, E. M., Passed Assistant Surgeon. Ordered to duty at the Naval Academy, Annapolis, Md., as the relief of Assistant Surgeon R. E. Hoyt.

GROVE, W. B., Surgeon. Ordered to duty at the Naval Medical Supply Depot, Brooklyn, N. Y., and to additional duties under instructions from the Bureau of Medicine and Surgery.

HOLLOWAY, J. H., Passed Assistant Surgeon. Detached from duty at the Navy Yard, Norfolk, Va., and such other duty as may have been assigned him, and assigned to duty with the Navy Recruiting Party No. 4.

HOYT, R. E., Passed Assistant Surgeon. Detached from duty at the Naval Academy, Annapolis, Md., and assigned to duty at the Naval Hospital, Canacao, P. I., as the relief of Assistant Surgeon H. W. Smith.

KENNEDY, J. T., Passed Assistant Surgeon. Ordered to duty on the U. S. S. *Hancock*.

MOORE, A. M., Surgeon, retired. Detached from duty at the Naval Recruiting Station, Memphis, Tenn., and ordered home.

SMITH, H. W., Assistant Surgeon. On the reporting of his relief, detached from duty at the Naval Hospital, Canacao, P. I., and ordered home by way of Europe, with permission to delay two months in Europe.

TAYLOR, E. C., Passed Assistant Surgeon. Detached from duty at the Naval Hospital, Brooklyn, N. Y., and ordered to duty at the Naval Recruiting Station, Memphis, Tenn.

Births, Marriages, and Deaths.

Births.

GOTSHALL.—In Detroit, Michigan, on Thursday, December 27th, to Dr. Nelson S. Gotshall and Mrs. Gotshall, a son and a daughter.

Married.

KIEFFER—KING.—In Pottsville, Pennsylvania, on Wednesday, January 9th, Dr. George C. Kieffer and Miss Juanita King.

THOMPSON—ALLEN.—In Boston, on Saturday, January 5th, Dr. Charles Edward Percy Thompson and Mrs. Grace Albertine Allen.

Died.

ADAMS.—In Manchester, New Hampshire, on Saturday, January 12th, Dr. Daniel S. Adams.

ALDRICH.—In Denver, Colorado, on Thursday, January 3rd, Dr. Joseph A. Aldrich, aged eighty-nine years.

ARMSTRONG.—In Philadelphia, on Friday, January 4th, Dr. Thomas M. Armstrong, aged sixty-seven years.

BACHMAN.—In Philadelphia, on Tuesday, January 8th, Dr. Gustave A. Bachman, aged sixty-four years.

BALDWIN.—In Long Green Valley, Maryland, on Wednesday, January 9th, Dr. Abraham S. Baldwin, aged eighty-one years.

BELT.—In Washington, D. C., on Sunday, December 30th, Dr. Edward Oliver Belt, aged forty-five years.

BERGER.—In Milwaukee, Wisconsin, on Wednesday, January 2nd, Dr. Henry C. Berger, aged forty-three years.

BORST.—In Newville, Pennsylvania, on Tuesday, January 8th, Dr. George C. Borst, aged fifty-five years.

BRICE.—In Chicago, on Wednesday, January 2nd, Dr. R. B. Brice, of Kingston, Canada, aged sixty-nine years.

BRYANT.—In New York, on Tuesday, January 8th, Dr. Edward Gilman Bryant, aged thirty-nine years.

CABELL.—In Norwood, Virginia, on Monday, January 7th, Dr. A. J. Cabell.

CALDWELL.—In Arcadia, Kentucky, on Saturday, January 5th, Dr. S. B. Caldwell, aged eighty-two years.

COGAN.—In Providence, Rhode Island, on Thursday, January 3rd, Dr. Richard Merwin Cogan, aged twenty-seven years.

DIRICKSON.—In Berlin, Maryland, on Friday, January 4th, Dr. James C. Dirickson.

GANGLOFF.—In Buffalo, on Saturday, January 5th, Dr. George E. Gangloff, aged thirty-five years.

GROOT.—In Washington, D. C., on Tuesday, January 8th, Dr. Simon I. Groot, aged eighty-six years.

HUDSON.—In Mayesville, South Carolina, on Friday, January 4th, Dr. J. W. Hudson, aged seventy-five years.

JOHNSON.—In Liverpool, England, on Sunday, December 30, 1906, Dr. Benjamin Pitt Johnson, aged forty-five years.

JOHNSON.—In Portland, Oregon, on Tuesday, January 8th, Dr. Philip Edward Johnson, of New York.

JUDSON.—In Greenville, South Carolina, on Saturday, January 12th, Dr. Charles Hallett Judson, aged eighty-six years.

MEREDITH.—In Carthage, Missouri, on Friday, January 4th, Dr. S. D. Meredith.

MULLER.—In New York, on Wednesday, January 9th, Dr. Alfons Muller, aged forty-five years.

OSTRANDER.—In Appleton, Wisconsin, on Thursday, January 3rd, Dr. E. H. Ostrander.

RICKERTS.—In Brooklyn, N. Y., on Wednesday, January 9th, Dr. Edmund C. Rickerts, aged fifty-three years.

RIDLEY.—In Ancon, Canal Zone, Panama, on Tuesday, January 8th, Dr. George V. Ridley, aged thirty-three years.

SMITH.—In Charlottesville, Virginia, on Thursday, January 10th, Dr. Walter Smith.

WILLIAMS.—In Oxford, North Carolina, on Wednesday, January 2nd, Dr. J. Buxton Williams.

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Original Communications.

THE MANAGEMENT OF LAPAROTOMY PATIENTS AND THEIR MODIFIED AFTER TREATMENT.*

By H. J. BOLDT, M. D.,
New York.

Our object when instituting any form of treatment for a patient is to bring about restoration to health and working ability as soon as possible. When we do an operation we employ such technics as will in our opinion assure the greatest degree of safety to a patient, and then conduct the subsequent treatment of that patient in such manner as will in our opinion ward off the complications and undesirable consequences sometimes incidental to operations.

It is my chief purpose in this contribution to consider the treatment of patients upon whom abdominal sections have been done. While progress has constantly been made in everything connected with medicine and surgery, yet the management of such patients has practically remained unchanged during the past few years. Elaborate articles have appeared in textbooks and journals as to how patients should be cared for after abdominal sections, as to how long they should be restrained from moving about in bed, as to how long they should remain in bed, as to how they should be dieted, etc.

The customary treatment is dealt with in a most efficient manner in all its details by Howard Kelly in the second edition of his *Operative Gynecology*.

Before considering the special subject of my discourse it may be opportune to state briefly in a general way the management which I make use of for patients upon whom I purpose to do a laparotomy. The preparation of the patient is very simple. They get no special diet unless there is a special indication for it. On the evening before the operation a warm bath is given if convenient. The abdomen is then shaved, and the vagina is thoroughly irrigated with a mild antiseptic solution. If the bowels have been regular, nothing is done toward further emptying them except to have a nurse give a copious enema about eight or ten hours prior to the operation. Over night an antiseptic dressing is fastened upon the abdomen. Two hours and a half before the operation a subcutaneous injection is made of 1-180 of a grain of scopolamine hydrochloride with 1-12 of a grain of morphine sulphate. This medication is repeated an hour later, and again half an hour before the time set for the operation. The effect of it

is that the patients usually require less ether. On two occasions I have been able to do major operations without any other anæsthetic, and in another instance not more than about 15 c.c. of ether was required toward the termination of the operation. I have not, however, been able to observe anæsthesia so universally as has been published in the reports of others, to permit of operations without resorting to general anæsthesia with ether or chloroform. I deem it my duty in this connection to state that I have had the misfortune to have two patients in whom the preliminary scopolamine-morphine narcosis was induced die on the table during the operation, practically without more than a few moments' warning, which was manifested by a sudden change in the pulse, which became very slow and almost imperceptible. In the second case respiration also ceased almost simultaneously. On one of these patients an autopsy was made, but nothing was found to account for the death, even on microscopical examination of the heart, large bloodvessels, kidneys, and liver. In the other case an autopsy could not be procured. Whether the scopolamine-morphine narcosis contributed toward the fatal termination I am unable to decide. I think, however, that in the instance of the patient upon whom an autopsy was made with an entirely negative result the absence of a discoverable pathological lesion would point to that inference.

A short time before the operation I prefer to have a cathartic administered so that its effective action may manifest itself twelve to fourteen hours after the operation; however, if the patient's bowels have always been regular previously, the cathartic is omitted. *It is insisted upon that a patient shall not be needlessly kept under anæsthesia. The prevailing custom of keeping a patient under full anæsthesia fifteen minutes or more before an operation is begun cannot be too severely criticised.* A patient need not be under complete anæsthesia before the final abdominal cleansing is begun. The operator, assistants, and instruments should be in readiness, so that when the anæsthesia is complete the operation may be begun.

The incision is made on one side of the median line, the corresponding rectus muscle being separated by dull dissection with the handle of a scalpel, and the forefingers are then used to complete the separation for the entire length of the incision. The incision should be made sufficiently long to permit of easily accessible work on the seat of the pathological condition for which the laparotomy is done, because it is logical that the manipulation is safer when one can also see, as for instance, in the separa-

* Read before the Southern Surgical and Gynecological Society, at Baltimore, December 11, 1906.

tion of adhesions, than it would be if one worked only in the dark. The fact that an incision is an inch or two longer is of no significance so far as the healing of the abdominal wound is concerned, or so far as concerns the probability of the subsequent occurrence of ventral hernia, if the incision is properly closed; in fact we are likely to secure primary union of such a wound more readily than of one that has been abused by traumatism during manipulation, as is necessary in too short a wound.

Before closing the peritonæum, the omentum should always be carefully spread over the intestines. Only in exceptional instances is the abdomen washed out, flushed, with saline solution. In purulent cases the general peritoneal cavity is walled off, that is protected from contamination, by towels or with a heavy gauze roller bandage about four inches wide and folded about eight layers thick. Pus is mopped out with pads. Abdominal drainage is very seldom made use of, only in instances of diffuse oozing from torn adhesion surfaces, and then preference is given to vaginal drainage, so that the abdominal wound may be completely closed.

The abdominal wound is closed in tiers—first, the peritonæum, then the posterior sheath of the rectus in instances of long wounds, next the separated rectus muscle with interrupted sutures, next the fascia by overlapping it, so as to have a broader surface of coaptation. The skin is closed with a subcutaneous suture. Chromicized catgut is used for the fascia; for all other suturing plain catgut is used.

Apropos to catgut, which is one of the most important factors in an operation with any one who makes use of it as suture material and ligatures, it was my misfortune a short time ago to lose two patients with tetanus. The first was after an operation for a very large ovarian tumor, which was adherent throughout, in a woman fifty-five years old. The woman had been up and walking about for several days and was to be discharged two days later, when, on the twelfth day, she showed the first tetanus symptoms. She died six days later. The second case was one of abdominal hysterectomy for a large myofibroma, in which the first tetanus symptoms showed themselves on the ninth day, and to which the patient succumbed three days later. The cultures taken from the reopened wound revealed tetanus bacilli. The suspicion that the catgut was the carrier of the infection was but natural. I therefore had a number of tubes examined by Dr. Muenchhoffe, of the Museum of Natural History, through the Kny-Scheerer Co., of which the results were negative, as will be seen by the accompanying report.

THE KNY-SCHEERER CO.:

Gentlemen: The different kinds of catgut you sent me I have examined and find the following: In twelve tubes of catgut marked *Customers' Samples*, after having made aerobic and anaerobic cultures in the different media, gelatin, glycerin, and glucose agar, also culture plates, I find that after ten days in the incubator, of half of the culture and plates, there is no growth visible. It is the same with the ordinary room temperature.

From three tubes each, marked *Stock*, the same cultures and plates were made, after ten days at incubator of half of them, the other half at room temperature, the result being the same as in the foregoing.

From another lot of open tubes asta chromicized catgut and kangaroo tendons, five were inoculated with anthrax bacilli and spores; five others with tetanus

bacilli and spores; five more with the hay bacillus. All were then sealed and subjected on three successive days to your method of sterilization, after which time the usual bacteriological tests were made of aerobic and anaerobic cultures and plates in the different culture media and were kept in incubator, partly at room temperature; after ten days no growth was visible in any of them. The results obtained show that all the different tubes marked *Customers' Sample* were sterile; the same with samples from *Stock* asta chromicized and kangaroo tendons.

It also demonstrates that the asta chromicized and kangaroo tendons which were infected with the very resistant spores of anthrax and tetanus bacilli were destroyed. The facts brought out with these experiments show that your method of sterilization is doubtless sufficient and an absolute proof against infection with any kind of bacteria.

Yours respectfully (Signed),

C. W. F. MUENCHHOFE, M. D.

To make doubly sure as to the effect of fractional sterilization on positively infected catgut, I requested Dr. Arthur Mandel, of the Cornell University Medical College, to inoculate some catgut, and he soaked it, after untwisting it, with the view of getting it thoroughly imbued with the bacilli and spores of anthrax and of tetanus and hay bacilli, for twelve hours in bouillon which had been thoroughly infected with the microorganisms named. The infected catgut was then replaced in tubes and sealed. It was then sterilized in the Kny-Scheerer laboratory and returned to Dr. Mandel for examination. After every method of examination it was found absolutely sterile. The tests which I had made had the object of proving or disproving conclusively whether catgut which contained very resistant microorganisms, and subsequently properly sterilized, was absolutely reliable so far as the possibility of causing infection was concerned.

At the meeting of this society held in Birmingham, two years ago, I said a few words regarding the subsequent treatment of abdominal section patients, but I was then still in the experimental stage with the treatment. The first premeditated important departure from the long rest in bed after an abdominal section was made by Dr. Emil Ries, of Chicago, and, believing Ries to be conscientious and a good observer, I had no hesitation in putting the departure to the test. I added, however, one modification which I considered of the utmost importance for the patient's abdominal wound; in fact I believe it to be the salient feature, namely, a proper abdominal binder, which Ries does not consider necessary.

I may add that in a letter dated November 17, 1906, Dr. Robert T. Morris states that he for a time required his patients to arise from bed so early after abdominal sections fifteen years ago, but again discarded the practice because of the severe criticism to which he was subjected by some of his colleagues in the hospital with which we are connected. I regret not to have heard of it, until his communication reached me. Morris did not publish his work in this direction. Ries's work, however, was published in the *Journal of the American Medical Association* in August, 1899.

When I first deliberately risked permitting patients to get out of bed in less than three days after abdominal operations, I recalled several instances of extensive operations in the abdominal cavity, in

which the patients, through inattentiveness of the nurse, got out of bed within twenty-four hours, even in the days when we used hard rubber and glass drainage tubes, and these patients had such a tube in the abdomen, and yet in consequence of their rashness they were none the worse off for their experience. I further recalled one patient who persisted in getting out of bed and walking about after the third day whenever the nurse was absent. Also that for more than fifteen years my patients have been permitted to move about in bed as much as they pleased after abdominal operations, unless there was a strong contraindication for such permission, and yet I failed to observe any harm resulting from such exertions. Further, from the fact that others have had patients who also without permission left their bed soon after the operation without any ill effects, and, lastly, that since 1890 it has been my custom to permit my patients upon whom I had done a vaginal hysterectomy to walk about any time after the first day, if their condition was favorable, and had not seen an instance of unfavorable result, one may naturally ask himself the question: Is there really danger in a patient's getting out of bed soon after an abdominal operation if her general condition is fair and proper precautions are taken? I am aware that advocating the treatment as routine practice will find much opposition, so much so that one of my former clinical assistants read a paper before the New York Obstetrical Society against my teaching, but fortunately my advocacy is based upon experience, and his paper was based only upon theory.

Since my first remarks uttered in public regarding my change of after treatment I have had ample opportunity to study the effects of the method which I now warmly advocate, and which I now consider beyond the experimental stage, so that I can say that experience has taught that the method of treatment which I propose to speak of is good, better than the customary method, but, while it is simple, yet much more discrimination in selecting patients upon whom to carry it out is required than if we treat them in the way usually laid down in textbooks.

After the completion of a laparotomy, a simple dressing is placed over the site of the abdominal incision, consisting of a strip of sterile gauze two and one-half to three inches wide and six to eight layers in thickness; this is fastened with two short, narrow strips of adhesive plaster simply to hold it in place while the binder to immobilize the abdominal parietes is adjusted. *The bandage used by me to immobilize the abdominal parietes is a Scultetus bandage, for which zinc oxide plaster is used. The full width of the plaster, 12 inches wide, is used, and according to the size of the patient, from 28 to 40 inches or more in length. At the bottom, a small half circle is cut out in the middle, so that during defecation the bandage is not soiled.* The patient is now placed upon the bandage so that the lower border comes about on a level with the head of the femur. Now the fabric covering on the plaster is taken off, and when that part of the plaster is reached upon which the patient is resting, the patient is rolled over a little to one side to facilitate the complete removal of the covering, the end of which is now taken hold of by the assistant on the other side with both hands, and the plaster is entirely freed

of the covering. I have found this better than to first remove the covering before placing the patient upon the plaster, for it makes wrinkling of the plaster less likely. Next the plaster is cut on each end into four equal widths and torn as far as the body of the patient; thus the body of the plaster is upon the patient's back; in short, we now have a many tailed bandage made of oxide of zinc plaster. The zinc plaster is preferable to rubber plaster because of its less irritating qualities. The tails are now snugly adjusted, beginning with the lower one and bringing it to the opposite side, then the opposite side is overlapped all the way down to the other side of the patient, thus making a double structure in front and at the sides. This is continued until the four tails on each side are fastened. If the upper part of the bandage should reach up to the epigastrium in short patients, the topmost tails are not drawn so tight. In thin subjects the anterior superior spine of the ilium is slightly padded with gauze.

Such a bandage immobilizes the abdomen to such a degree that it is impossible for the abdominal wound to give way as the result of intraabdominal strain. I consider the bandage a most important part, the precaution in the after treatment. In the beginning patients usually complain of the tightness of the bandage, but this generally soon wears off. If it is really unbearable for the patient, the upper strip may be cut a little on each side. Of their own accord patients seldom care to get out of bed until the third or fourth day, yet it has been my custom to help them in all simple cases out of bed within twenty-four hours and have them sit in a comfortable chair, and to coax them out subsequently as much as possible. Occasionally I have done abdominal hysterectomies for fibroids, panhysterectomies for purulent inflammatory conditions, ovarian tumor operations, etc., in the morning, and have had my patients out of bed in a rocking chair late in the afternoon of the same day, this depending entirely upon the general physical condition of the patient before the operation and upon the effects of the anesthesia. My patients receive *no special diet unless there are particular contraindications for regular diet; they get similar food as they had before the operation as soon as the stomach is in condition to retain food after the anesthesia.* By the end of the fourth or the fifth day the patients after *uncomplicated* abdominal sections usually walk about as though they had had no operation done upon them. If there is no indication to inspect the wound, the binder is not taken off for three weeks, sometimes four weeks. If the bandage is too uncomfortable from wrinkling, or loose, it is removed after two weeks or whenever it seems necessary, and replaced by another after the skin has been left free of a bandage for a day, during which time the patient is bathed with alcohol and the skin powdered with talcum two or three times. The patients usually go home with the bandage, which is permanently removed at the expiration of about four weeks. If there is reason to suspect suppuration of the abdominal wound, the wound is inspected by cutting the bandage in the median line over the gauze layers; this can be done without any marked discomfort to the patient.

Should suppuration be found to be present, then the wound is taken care of in the ordinary way and the patient kept in bed until the suppuration has

ceased. The cessation of suppuration is hastened by swabbing the suppurating surface with pure carbolic acid and immediately washing it off with alcohol. If no suppuration is found, the bandage is again fastened by applying other strips of plaster over it.

Exception to the inducement of early rising, that is, within twenty-four to forty-eight hours, are made when a patient's physical condition has been much weakened by illness prior to the operation, or when the patient's pulse rate is much above the normal, or when the nature of the operation has been one of unusual magnitude; then, but only then, no attempt is made to get them out of bed before the end of the fourth day, or even then if there is any indication for unusual care. Lately, however, I have even deviated from this and taken the subjects in the most complicated cases out of bed after about twenty-four to thirty-six hours unless they were really too feeble, or unless there was an unusual complication, such, for instance, as happened very recently, the necessity for a ureteral implantation in connection with a difficult hysterectomy for a retroperitoneal myofibroma which in my opinion made it desirable to keep a permanent catheter in the bladder for four days; but at the end of the fifth day she, too, was sitting out of bed.



Bed Lifter

In those cases in which the operations were so complicated, or in which peritonitis was present before the operation, or in which it was obvious that pathological intraperitoneal secretion would form, so that it was desirable to localize such secretion in the pelvis, or in instances of the first sign of a beginning peritonitis, so that in my opinion it was too hazardous to have such patients out of bed, I have used a bed lifter which I have designed and had constructed for me, to enable me to obtain the trunk elevation recommended by the late Dr. George R. Fowler. It is constructed

so that the head of the bed is let into two strong hooks attached to the frame, which is attached to a rod that can be elevated or lowered to any desirable height without physical exertion by the patient, by means of a cog wheel and a large hand wheel, as shown in the illustration. It is on the same principle that I have had my office treatment or examining table built. I have found this a valuable appliance in all such cases, and also to facilitate vaginal drainage.

Patients who are very anæmic and in a poor physical condition will be relieved from the immediate effects of the operation if a tight bandage is placed around the upper part of the thighs before the operation is begun, to act as a tourniquet, thus temporarily keeping the blood in the lower extremities out of the general circulation. As soon as the operation is completed, the bandage is loosened, and the extremities bandaged from below upwards for a few hours, so as to get more blood into the trunk.

With my present views, the principal objection

to permitting patients after abdominal section to arise from bed early and go about is the danger of a subsequent ventral hernia, or perhaps even worse, of having the wound burst open from the effects of intraabdominal pressure—certainly not because of the surgical work done in the pelvis or the danger of thrombosis, because for more than fifteen years I have permitted my vaginal hysterectomy patients to get out of bed and walk about within twenty-four to forty-eight hours if the vaginal vault had been closed at the time of the operation, or if only a small strip of gauze had been inserted in the centre of the wound for the purpose of drainage during the first twenty-four hours, and all these patients were in a better physical condition at the end of two weeks than those who had been confined to their bed for ten days or longer. So far as the danger to the abdominal wound is concerned, it is safely and positively overcome by the proper closing of the abdominal parietes, and the adjustment of the bandage which has been advised.

I have found it beneficial to have the stomach thoroughly washed out as soon as the operation is finished. The stomach lavage, while the patient is still on the table, is readily done and saves a patient much nausea and retching.

In many instances one dose of morphine is administered soon after the operation, because it is but seldom that a patient does not complain of sufficient pain to make such treatment not only humane but beneficial to the patient, acting far better on the heart under some circumstances than strychnine.

I believe that strychnine is used far too extensively and indiscriminately, both during and after operations, whereas intravenous saline infusions are often too long delayed, and the administration of a dose of morphine after an operation is too much dreaded by many.

If the bowels do not move spontaneously within twenty-four hours after the operation as the result of the cathartic not infrequently given before it, no attempt is made to bring about an action, because usually this occurs spontaneously about the fourth or fifth day, and should it not, then, if the patient feels uncomfortable, a saline laxative is given.

I have been frequently asked, What is the object in getting patients out of bed so soon? I ask in return, What is the object in requiring patients to remain quietly in bed so long? The reasons stated in text books for the latter procedure as a routine method do not, from my observation, hold good in practice when compared with the results achieved by the course which I have the privilege to advocate at this meeting. For most abdominal sections those reasons for the necessity of enforced quietude in bed must be regarded as theoretical.

Ries wrote me on November 1, 1906, that he had used the heretical after treatment of permitting patients upon whom he had done an abdominal operation in more than 500 cases without having observed any untoward result that he could attribute to it. I have had 384 cases and not a single instance of untoward result which could in any way be attributed to the early arising from bed. I know of others who upon my suggestion, after seeing some of my patients, also permitted their patients to get out of bed, although not so early, usually on the

third or fourth day, so as to bring the total number up to more than 1,000 cases; and yet no unfavorable result has been reported to me. This seems to me a sufficiently large number of cases to demonstrate whether the treatment has merit or whether it is fraught with danger. The cases chosen by me were not simple ones alone, but they were taken irrespective of the complications which were met with. For instance:—

C. McG. Double salpingectomy, for double tubal pregnancy; left tube ruptured, the right was unruptured. Patient out of bed most of the time on and after the fourth day.

J. W. Double ovariectomy for cancerous ovarian tumors; exsection of the right broad ligament; panhysterectomy because of malignant involvement of the uterus; exsection of the lower part of the sigmoid flexure and upper part of the rectum, because of carcinomatous involvement; extirpation of a large part of the omentum; extirpation of many retroperitoneal glands. Patient out of bed most of the time beginning with the sixth day.

F. K. Tuberculous peritonitis; catarrhal appendicitis. Out of bed on the fifth day.

P. R. Complicated panhysterosalpingo-oophorectomy. Out on the second day.

C. K. Abdominal hysterectomy for malignant chorioma. Out of bed within twenty-four hours. Discharged on the eighth day.

M. G. Abdominal myomectomy; acute appendicitis. Out of bed six hours after operation.

M. S. Complicated abdominal hysterosalpingo-oophorectomy; intense pelveoperitonitis present. Out of bed on the third day.

I. McC. Similar operation for a similar condition. Out of bed on the third day.

F. K. Very adherent retroflexion; annexa likewise adherent. Out on the second day.

B. B. Complicated panhysterectomy. Out within twenty-four hours.

E. O. Exsection of the left broad ligament with annexa; ventral suspension and appendectomy. Out on the second day.

J. B. Hysterosalpingo-oophorectomy, very complicated, with extensive injury of the bladder. Out on the fifth day. Discharged on the twelfth day.

M. S. Panhysterosalpingo-oophorectomy; diffuse septic peritonitis. Abortion case. Out on the third day.

F. L. Myomectomy. Out within twenty-four hours.

E. L. Complicated bilateral salpingectomy; ventral suspension; appendectomy. Out after the second day.

M. D. Panhysterectomy, with resection of the upper third of the vagina; both broad ligaments and both ureters exposed in their pelvic part, the right ureter cut and anastomosed. Retroperitoneal glands removed. Appendectomy. Carcinoma case, far advanced. Out on the fourth day.

J. G. Double ovariectomy for cancerous tumors; panhysterectomy. Out on the following day and the day thereafter; when on the next day the patient was kept in bed because she began to show evidence of peritonitis, of which she died on the fifth day.

E. D. Hysterectomy for large fibroid with adherent suppurating tubes. Out within twenty-four hours.

S. E. Hysterosalpingo-oophorectomy for adenocarcinoma of the ovaries. At time of the operation it was thought that tuberculous peritonitis was present, but it proved a carcinomatous peritonitis. Out of bed within twenty-four hours. From a report later received the patient lived about six months before succumbing to her ailment.

S. L. Adherent ovarian tumor. Out of bed on the same day.

G. P. Tuboovarian abscess with diffuse adhesions;

ventral fixation. Out on the next day. Was later returned to bed, because of wound infection.

E. G. Adherent dermoid tumor of ovary. Salpingectomy on the opposite side, with plastic work on the ovary. Out the next day.

J. E. Complicated extrauterine pregnancy. Out on the fourth day.

S. F. Complicated panhysterectomy. Out the next day.

R. G. Ruptured tubal gestation. Out in twenty-six hours.

R. K. Complicated panhysterectomy for intraligamentous myofibroma. Out on the third day.

C. K. Hysterectomy for large myofibroma with pregnancy. Out the next day. Was subsequently returned to bed for two days, because of bleeding.

M. M. Hysterectomy for large myofibroma with double pyosalpinx. Diffuse adhesions. Out on the fourth day.

A. K. Suppurative appendicitis, with beginning peritonitis. Long median incision to umbilicus. Up the next day. Returned to bed on the sixth day because of wound infection.

G. S. Complicated salpingectomy for pyosalpinx; appendectomy. Curetting. Up the next day.

L. N. Similar operation. Up the second day, but was later returned to bed because of wound infection.

V. S. Very complicated hysterectomy for myofibroma with double pyosalpinx; appendectomy. Up the next day. A very stout woman.

E. S. Complicated tubal pregnancy. Up on the second day.

J. R. Complicated panhysterectomy. Up on the second day.

S. K. Complicated bilateral salpingectomy; appendectomy; ventral fixation. Up on the fifth day.

M. L. Ovarian tumor with diffuse adhesions; appendectomy; ventral suspension. Up on the next day.

E. N. Curetting; trachelorrhaphy; anterior colporrhaphy; bilateral posterior colporrhaphy; right ovariectomy for multilocular ovarian cyst; resection of small multilocular ovarian cyst (three inches in diameter) on the left side, retaining some seemingly normal ovarian stroma; appendectomy; ventral suspension. Up the next day, but returned to bed again for a few days after the fourth day, because of mild abdominal wound supuration.

F. K. Large ovarian tumor (left) with twisted pedicle, five times from left to right, with torsion of 25.0 at cervix from left to right; much oozing from extensive peritoneal adhesions. Out the next day.

A. F. Double ovariectomy. One of the tumors quite adherent. Retained some ovarian stroma on the other side. Appendectomy. Up the next day.

J. W. Right tubal gestation; appendix inflamed and adherent to the tube, also removed. Up on the second day, but was later returned to bed for a few days because of wound infection.

J. S. Very large ovarian tumor, adherent throughout. Up the next day. Patient manifested tetanus symptoms on the twelfth day and died six days thereafter.

R. M. Complicated hysterosalpingo-oophorectomy and appendectomy. Up the next day, but was later returned to bed because of wound infection.

H. L. Panhysterosalpingo-oophorectomy; septic case from criminal abortion; ovarian abscesses and peritonitis. Up on the second day, but was then returned to bed again because of the pulse rate and temperature, 102° F. Definitely out of bed from the sixth day.

K. D. Hysterosalpingo-oophorectomy and appendectomy. Annexa very adherent. Up on the second day.

R. K. Ruptured right ovarian tumor causing diffuse peritonitis; emergency operation during night. Out of bed on the third day, but later returned because of

wound infection. It was macroscopically a papillomatous neoplasm, which later proved carcinomatous.

S. K. Large myofibroma with double pyosalpinx; intimate adhesions. Very stout woman. Up the next day.

H. K. Complicated hysterectomy for myofibroma and appendectomy. An unusually stout woman. Up the next day. Nearly four weeks later the first indication of deep wound infection was evident, for which she was then kept in bed at her home for about two weeks.

R. O. Panhysterectomy for large intraligamentous myofibroma; appendectomy. Up on the second day.

A. A. Panhysterectomy for myofibroma. Complicated case. Up the third day.

R. W. Hysterosalpingo-oophorectomy; double ovarian abscess; on one side pyosalpinx and on the other side hydrosalpinx; many adhesions. Up on the fourth day.

In the foregoing short list of fifty cases as may be seen, I have not included any of the simple abdominal sections for ovarian tumors without adhesions, noncomplicated hysterectomies for fibroids, easy operations for ectopic pregnancy, etc. Neither do I deem it necessary to cite more or all the instances of technically difficult cases treated by the method advocated because it would be too tedious to listen to or to read. My object is to cite only a sufficient number of cases that those interested in this work may know of the kind of cases that have been so treated. The method is applicable in about eighty-five to ninety per cent. of patients subjected to abdominal section by gynecologists. On the first day or two that patients are taken out of bed, they usually walk only a few steps, from the bed to the chair and then remain in their chair. They are allowed to remain up as long as they wish; on the first occasion the time is from three quarters of an hour to two hours, and in the afternoon this is again repeated. Every day, however, the time of being up is increased, likewise the amount of exercise. Of course, as might be expected, patients sometimes protest, but a little coaxing usually induces them to acquiesce. It is certainly remarkable to see the physical condition in which such patients are after two weeks have elapsed, compared with that of those who were kept in bed on the customary treatment. Those whom for reasons I think best to keep in bed I endeavor to have do some calisthenic work with their upper and lower extremities while still on their back, unless in my opinion they are too prostrate. Five minutes every hour or two is of some benefit to keep the lethargy out of their muscles and cause better circulation.

It is of decidedly more benefit to a patient under ordinary circumstances to allow her to spend the first week partly in bed, and to induce her to take moderate exercise, than to let her remain in bed two or three weeks and then begin to get her up. Most patients upon whom operations are done for primary surgical diseases do not have their health improved by bed rest, but on the contrary their muscular system becomes more or less atrophied and they lose strength, because all the physiological functions become more or less impaired by the enforced quietude. The only class of patients who would be benefited by bed rest are extreme neurasthenics, and *they only if they are properly fed and*

Take, for instance, malignant disease which has undermined the patient's general physical condition, and on operation the disease is shown to be probably advanced too far for us to hope for permanent cure, or even to attempt to do a radical operation for its cure; such patients if restrained are very likely to become permanently bedridden, at least such has been my experience in a number of such cases. On the other hand, induce them to get out of bed soon, if possible within the first twenty-four hours, and their physique is not undermined more than by the ordinary natural course of the disease.

During the past two weeks I have had two additional instances to prove this. One I shall mention.

J. K., forty-nine years old, cachectic appearance; the abdomen greatly distended, which gave rise to the erroneous diagnosis on the part of several physicians before she was referred to me that she had a very large ovarian cyst. The pelvis was filled by a hard mass, which on the surface, palpable per vaginam, had a number of small irregular nodules. The uterus and annexa could not be palpated because of the enormous abdominal distention. The diagnosis, however, was made of probably malignant disease, yet there was a slight possibility that I might be mistaken and that the condition might be tuberculous peritonitis, consequently an exploratory section was made by me on December 3rd. Unfortunately the first impression proved correct. The omentum was carcinomatous, and numerous carcinomatous nodules were in the mesentery. The mass in the pelvis was composed of coils of intestine with malignant deposits between them. A cigarette drain was placed in the lower angle of the wound to temporarily get the woman rid of the ascitic fluid, and the abdomen was closed; the Scultetus bandage applied above the drain. On December 5th the patient was up and about. On December 6th she walked about *much* better than she did before the exploratory section, and in every way felt better than she did previously, besides the haggard expression in her face had much improved.

The operations that I have done on the intestinal tract, which are few compared with those which a busy general surgeon does, yet have been of a sufficient number to teach me that even such operations are no contraindication to the treatment advocated.

I am frequently confronted by doubters and antagonists of the method with the rule that we usually insist upon in obstetric cases. In these we have altogether a different condition to contend with. There is a large, heavy uterus, with stretched ligaments and a relaxed pelvic floor; these must have time to regain their former condition or else displacements are likely to follow. All this is different in strictly surgical cases. In instances of large tumors the oxide of zinc Scultetus bandage gives adequate support to the abdomen and assures absolute protection of the abdominal wound, provided, of course, that there is no wound infection. It has been suggested that perhaps just this treatment is likely to cause suppuration of the wound. For a time this thought also came to my mind, that perhaps, from the mobility of the patients, occasionally the irritation of chronicized catgut knots might be a causative factor of suppuration; yet, on the other hand, not only I but also my colleagues had under the employment of the customary treatment at some time seen almost a small epidemic of wound infections in hospital practice, whereas in strictly private practice I have not seen a single instance of it during the past five or six years. Again, in those cases in

which I have used catgut sterilized by the fractional method of sterilization, it has rarely occurred, never in a clean case. I do not attribute the fortunate recovery in my very serious cases to "luck" despite my having used such heretical treatment. On the contrary, I believe that it was because I used the newer, or modified, treatment, that my patients got well; hence my opinion that there is a lower mortality with this treatment.

I have also thought of the medicolegal side of this question, and fail to see why the man who makes use of it should be condemned by his confrères if he should have a patient die of embolism a few days after an operation, or because the patient was attacked with thrombosis. It would have to be shown that patients who were kept abed did not have phlebitis, thrombosis, or embolism. I maintain that these accidents are not so likely to occur if the treatment, a rational activity of the patient after operation, is insisted upon. It is proved by experience.

Dr. Marshall and Dr. Quick, in an article that appeared in the *Medical Record* of November 24, 1906, are also advocating more and earlier mobility for their *simple* laparotomy cases. The greater advantage, however, I am sure, will be seen if the treatment is extended, in the really complicated cases, just that class of cases in which I also formerly insisted upon absolute rest for two or three weeks or more. Particularly in complicated panhysterectomies with suppurating tuboovarian inflammation, with or without vaginal drainage, I have found the method advocated of very superior advantage. The vaginal gauze drain does not prohibit a patient from sitting up and taking light exercise. Besides, in from twenty-four to forty-eight hours the packing is removed, and less is replaced if one thinks it desirable to have some protection in the vaginal vault.

Ries does not use any binder, and yet he has not observed a single hernia except in one instance of an infected wound. I confess that I have been too timid to take such a chance, feeling safer if the abdomen was immobilized, though it certainly causes more or less discomfort to the patients, especially during the first few days.

The most serious objection which my confrères have uttered against the early getting out of bed is the danger of thrombosis and embolism, especially after operations for myofibromata. I say most emphatically that this protest is based only upon theory, so far as my experience goes. Thrombosis and embolism occur not infrequently after abdominal operations when the sacred plan of rest in bed for three or four weeks is adhered to. It occurs occasionally even without any operation, especially in fibroids. It is an unfortunate result of this form of neoplasms, which not infrequently cause cardiac changes. I have not seen a single instance up to the present time following my myoma operations with the plan of treatment advocated, and yet some of the myofibromata removed have been very large. Pelvic elevation during operations is far more risky in causing undesirable results, fortunately not permanent, than the early getting of patients out of bed after laparotomies.

"According¹ to Albanus, there are four factors which

¹Quoted from Keen's *Surgery*, Chapter on Postoperative Thrombosis.

may play some part in the etiology of thrombosis: First, any disturbance of the venous circulation which might exist before the operation and would predispose toward thrombosis, as, for example, heart lesions, varicose veins, exhaustion, prolonged decubitus, and pressure of abdominal tumors. Secondly, conditions attending operation, such as an inoperable chilling and exposure of the contents of the abdominal cavity and possibly traumatism to the vessel walls. Thirdly, the injurious effects upon the heart muscle of the anæsthesia, and, lastly, topographic relations of the vessels. It is readily understood how a distended and overloaded sigmoid flexure might make pressure upon the left iliac vein. Riedel and Gerhardt call attention to the pressure exerted by the iliac artery upon the iliac vein."

"Clark, after careful investigation based upon clinical and experimental observations, has come to the conclusion that a postoperative thrombosis is due to the effect of traumatism exerted upon the deep epigastric arteries during the course of the operation. The primary thrombosis originates in the deep epigastric vein and is slowly propagated along the line of the vessel until it reaches the external iliac vessel, where it gives rise to a retrogressive thrombus in the femoral vein. 'That the thrombus appears most frequently on the left side is attributed to the mechanical conditions on the left side which slow and derange the femoral and iliac circulation.' Human thrombosis is often caused by the liberation of fibrin ferment in the general blood stream, and chemical changes of the blood have likewise an influence on the occurrence of thrombosis. The precise effect of these chemical changes is as yet hypothetical."

Whether the opening of the peritoneal cavity brings about any of these factors, is, I believe, still an open question.

The generally accepted view of the cause of postoperative thrombosis is that it is due to infection during an operation. While this may be admitted to be correct in many instances, it is my firm belief that it is erroneous to so frequently attribute a thrombosis to an infection. For instance, the only case of phlebitis that I have observed after the early getting out of bed after an operation was that of a young lady, sixteen years old, upon whom I did an abdominal section for the removal of an ovarian tumor on one side and the exsection of an ovarian cyst on the opposite side, in which a goodly part of ovarian tissue could be left. It was an absolutely clean operation and the patient was out of bed fourteen hours later. The convalescence was perfect, yet a few days after she had gone to the country a mild phlebitis of the external saphenous vein showed itself which lasted nearly two weeks.

This case convinced me that there were factors which caused circulatory disturbances that were not yet clear to us. Because here we had an instance where no infection took place, and, further, in which rest in bed was neither insisted upon nor taken. I believe that the occurrence of thrombosis may occasionally be attributed to circulatory disturbances brought about by enforced absolute quiet in bed, because there occur inactivity of the muscles and diminished propelling power of the heart, which causes retardation of the circulation. This would be obviated to a great extent if inactivity were not insisted upon. *It is better to keep the patient up and keep the circulation than by taking rational exercise.* The fact that thrombosis, if unilateral, has usually been observed on the left side may probably be accounted

for by the greater length and the course and relations of the left iliac vein.

Being desirous to obtain some statistical data on the frequency of the occurrence of phlebitis, thrombosis, embolism, etc., I wrote to a few of my colleagues, and here express most grateful appreciation to those who were good enough to answer my request. In addition to the statistical report, Dr. William J. Mayo, with whose permission I quote from his letter, wrote:

"We have come to the conclusion that the blood changes which follow the opening of the peritoneal cavity increase the tendency to clotting and that the muscular inaction due to the lying in bed with the change in the blood pressure, and the interference with the circulation on the left side, are the main causes. We found that patients who got up within a week, like chronic appendicitis, did not have phlebitis, as it usually comes on between the tenth and twentieth days, so that we now bend every effort to get our patients about early and encourage movements of the limbs, especially of the left, with patients who lie in bed a longer time."

Dr. William J. and Dr. Charles H. Mayo, during 1904, in 1,788 abdominal operations, had about one per cent. of left side phlebitis. Many of these were mild. For the last year and a half, since they have not enjoined bed rest so strictly, but have endeavored to get their patients about as soon as possible, they have seen it very rarely, not to exceed more than one-third of one per cent. In 1905 they had in 2,157 abdominal operations, two deaths from embolism. One was after an operation on the gall-bladder, and the other a hysterectomy, and also two pulmonary embolus cases in which the patients recovered. Dr. William J. Mayo further wrote:

"The more feeble and rapid the action of the heart after the accident, the better the prospects of recovery. In each case that recovered, the heart's action became almost uncountable, the right and the left heart actions not being together, and by its feebleness enabling the lungs to gain a little more time to adjust themselves. The cases that died continued from strong cardiac contraction to force the blood into the lungs. All of these cases took place between the fifth and the ninth days. In 3,000 celiotomies Clark² found the record of thirty-five cases of thrombosis. Schenck, in 7,130 gynecological operations, found forty-eight cases. Albanus, in 1,140 laparotomies, fifty-three cases, and of this number twenty-six were nonseptic cases.

As to the statistics of thrombosis, etc., in abdominal section patients who were permitted to arise very early from bed.

Dr. Ries informs me, under date of November 14, 1906, that he had one instance of thrombosis or phlebitis with a temperature up to 101.6°F., in a cachectic patient, sixty-six years old, who had cancer of the uterine corpus, with bronchitis, varicose veins of the legs, and arteriosclerosis. In seven days the œdema of the leg had disappeared and the temperature was down to 90°F. She spent most of the time in a chair while the thrombosis lasted. Nineteen days after the operation she could leave for home. Last year a thrombosis developed ten days after a plastic operation for descensus of the vagina and uterus, the patient having been up before the development of the thrombosis. It ran the usual course without any symptoms except pain and œdema. He thinks that he had another case of mild

thrombosis some years ago, but does not remember the details.

Dr. George Chandler, of Kingston, N. Y., on November 21, 1906, wrote me that he had had ninety-four cases since February 1st of this year, and in all but six cases he had practically, or to a very large extent, followed the treatment outlined, and he had not had a single instance of thrombosis or embolism. Dr. Chandler informed me that he let his patients come out of the anæsthetic in the sitting position and found less vomiting as the result.

I have seen only one instance of very mild phlebitis, among the entire number of cases in which I permitted the patients to get up very early after an operation. On the other hand, I have had four cases of thrombosis, during the same period, among those who were not allowed to get out of bed soon after an operation, and who were in consequence of the occurrence of the thrombosis kept in bed until all or nearly all symptoms of thrombosis had disappeared.

Undoubtedly in one of these cases, that of a large myoma complicating pregnancy and causing symptoms of such a character as to indicate surgical intervention, the thrombosis would have been attributed to the early getting up, by antagonists of the method if that course would have been followed; but because I was enabled to enucleate by myomectomy the large tumor which was the indication for an operation, and because I was desirous of preserving the conception product, I kept the patient very quiet in bed, and ordered morphine to be given if pain occurred. On the fourth day thrombosis of the femoral veins developed, which kept the patient abed for four weeks. She did not abort.

In another instance of a complicated hysterectomy for a retroperitoneal fibromyoma, in a patient who came to me from Illinois, and who was operated upon two days after her journey, she had such a poor pulse that I did not deem it advisable to follow my usual plan of treatment, because her pulse continued to be of such quality that it seemed too risky to allow her to move about. By the end of the first week she had a double phlebitis, from which it took her nearly four weeks to recover. If the woman had got out of bed on the third or fourth day, and this had occurred, undoubtedly antagonists of the method would have held that responsible, whereas, as a matter of fact, the neoplasm had primarily caused circulatory disturbances, and very probably, had I not been too timid, but despite the pulse had taken my patient out of bed and given her moderate exercise, it might have been avoided.

My associate in the medical school, Dr. A. Broth-ers, had a number of laparotomies in which he to a large extent followed the line of treatment advocated by me, and he also has not seen any bad effects in the circulatory system or elsewhere.

It seems to me that such experience should be quite conclusive proof that the treatment, to say the least, is not contributory to the production of circulatory disturbances, even if it is not to some extent a prophylactic.

The question of diet, which is so much dwelt upon, I have discarded, or rather revised, in my practice nearly twenty years ago. It came about by what may be called an accident. On November 17,

1880, operated upon a woman with double gonorrhoeal peritonitis. On the third day after the operation she had been seized with all the subjective and objective symptoms of peritonitis, and nothing in the way of nourishment was retained by her. She consequently also suffered intensely from thirst. She begged me for permission to drink a bottle of beer. Believing that she would die and that nothing further could be done for her, I did not feel inclined to deprive her of her longing, and therefore acquiesced in her wish. Lo and behold, she began to retain nourishment, and from that time on she made an uninterrupted recovery. While this was of no scientific value, yet the incident gave me much thought, and gradually I began to change my opinion so far as diet was concerned, so that since sometime in 1887 I have been so far settled on this question by experimentation and observation that I have permitted regular diet after abdominal operations after twenty-four hours unless special contraindications existed.

What are the advantages of the nonrestriction in diet and moving about at random, and the inducement to have patients move about and get out of bed soon after abdominal operations, unless there are some very decided reasons to contraindicate this plan of treatment? I answer the question only from my observation in personal experience, empirical if you please.

It is important to take a series of complicated operations, treated on the plan suggested, and compare that number with an equal number of patients with about similar complications, treated by the generally approved method. I have gained from such a comparison the impression that the mortality rate is lower in the first class. This, of course, I am not in a position to prove; it is simply an impression gained by observation. *Next there is less nausea and vomiting, less abdominal distention, because flatus is passed more readily when patients are sitting up. Spontaneous action of the bowels occurs earlier. There is less liability to bronchial and pulmonary complications. There is less liability to circulatory disturbances. There is better assimilation of food. There is less weakening of the general physical condition of the patient. In short, there is more rapid recovery to working ability.*

What are the disadvantages? If the case is at all suitable for the treatment, *there are no disadvantages so far as my experience goes.*

The gentleman who opposed me in the paper already referred to, in the subsequent discussion suggested the question of pecuniary gain—I think thoughtlessly or unintentionally—as one of the disadvantages. Any one who has only the mercantile view in mind should not choose the method of treatment advocated, but those who practice their profession as it should be done will find that it has advantages. We should make our vocation a benefactor to the physical condition of mankind and endeavor to progress in knowledge. To do this, we should not cast aside methods of treatment which do not immediately appeal to us as good, especially when others, who have had large experience, have reported favorably upon them, until we have proved that they possess no merit, or are perhaps dangerous.

Until recently I did not permit patients upon whom a ventral fixation or a ventral suspension was done to arise before the termination of the second week, but, in a number of patients lately operated upon who were allowed to get up and go about in the same way as other abdominal section patients, examination did not indicate that the early moving about had any deleterious effect. Still, this is a point upon which I am not ready to express an opinion until I have had more experience.

Conclusions.—No particular preparatory treatment is necessary for patients upon whom it is intended to do an abdominal operation, unless the operation involves the opening of the stomach or the bowels.

Stomach lavage is of benefit at the conclusion of the operation.

Patients should not be kept unnecessarily under an anæsthetic.

The application of a tight bandage around the upper part of the thighs, to keep a blood reservoir in the lower extremities, in exsanguinated and very weak patients, is excellent. The same may in exceptional cases be done with one of the upper extremities. These bandages are taken off as soon as the operation has been completed, and thus more blood is thrown into the trunk.

The administration of strychnine during and after an operation should be used with more care than is usually done.

The intravenous infusion of a 0.9 per cent. saline solution should not be too long delayed when the condition of the patient makes it evident that its employment may be of benefit. In instances of large myomata, where the patient has been much exsanguinated by bleeding, it is desirable that the infusion be begun as soon as the patient is fully under an anæsthetic, so that by the time the operation has been completed, about 1,000 to 1,500 c.c. may have been infused.

The application of a very simple dressing over the wound, and the adjustment of a snugly fitting Scultetus bandage made of oxide of zinc plaster.

The administration of a dose of morphine if restlessness or pain makes this desirable, the medication then, clinically, acting as a heart stimulant.

The allowing of regular diet and unrestricted mobility within twenty-four hours after the operation, unless specially contraindicated.

The getting patients out of bed as soon as possible after an operation.

The avoidance of forced catharsis before the first four or five days after an operation unless there is a special indication for it.

In instances where resort to vaginal drainage is had, or where it is evident that there will be some secretions intraperitoneally after an operation (purulent cases, and oozing from torn adhesions), the employment of trunk elevation as soon as the patient is put into bed. For this the employment of a bed-lifter such as described, or the placing of high blocks or chairs under the head of the bed, is preferable to back rests.

GENERAL CONSIDERATIONS IN REFERENCE TO BLOOD EXAMINATION IN SURGICAL DISEASES.*

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Modern hæmatology, while to some extent still the concern of the theoretical worker, does present much information of practical utility to the surgeon as an aid in diagnosis and prognosis. Experience teaches that arguments offered in favor of its more universal application and closer study to reveal new refinements, generally meet with the response that all work of this class does not take the place of bedside observation. The most ardent advocates of laboratory procedure, if they have clinical experience, have never intentionally conveyed the idea that these methods are intended to take the place of clinical observation, though in the ardor of their conviction such impression may have been and apparently has been unintentionally given. The most acute bedside observer is usually also the one who obtains the most help from laboratory aids, as he is generally well versed in the significance and value of this information. When interpreting the value of the changes from the normal noted on chemical and microscopical examination, no matter how characteristic these may seem in the given case, it is imperative to have in mind *all* the fundamental causes which may occasion this change, and a disregard of some of them or the lack of knowledge of their existence is the most potent factor in erroneous conclusions. Laboratory investigations, no matter how important, are an aid and an aid only to the clinician; they do not and were never intended to replace his clinical diagnostic skill or his prognostic ability based on clinical experience.

Blood examinations in surgical cases are an aid in determining the general state of health before or after surgical procedure; they aid in the diagnosis of conditions inducing lesions subject to surgical intervention or those complicating surgical diseases or their convalescence; they furnish information in the differential diagnosis between some surgical disorders and lend aid in determining the degree of depletion due to hæmorrhage; and finally, they present evidence of decided value in determining the presence or absence of an inflammatory lesion, and in the former event, they may indicate the degree of toxic absorption and the resistance offered by the animal economy toward this infection. As in other laboratory procedures so in blood examinations, when done the work should be complete, as partial examinations frequently overlook important data and may lend a sense of security which the partial work does not justify. As every individual is to a certain degree a law unto himself, it is natural that repeated examinations are of greater value than single ones, particularly as the relative changes in the former often outweigh in importance the general indications shown by the latter.

The arbitrary rule that no surgical procedure

shall be undertaken when the amount of hæmoglobin is below thirty per cent., while better than no rule, is crude in the light of present knowledge. A complete blood examination renders much more satisfactory evidence as to the patient's condition and power of resistance, and by means of it many cases with a less marked loss in coloring matter are found poorer subjects for operation than others with relatively greater loss in this one element, but better conditions otherwise.

The evidences in the blood of malaria, typhoid fever, the different forms of leucæmia, Hodgkin's disease, and the different types of anæmia are often of decided value to the surgeon not only in diagnosis, but also in differential diagnosis, and the typical blood picture offered by each of these lesions needs no comment. True, the typical evidences are not invariably present, but in that case there are often corroborative features of no mean value. For example, the Widal reaction is frequently absent in the early stage of typhoid, but the leucopenia and relative lymphocytosis are suggestive features. Again, plasmodia of malaria are sometimes not found in the peripheral circulation, but a rather decided increase in the relative number of large lymphocytes is to some extent significant.

Acute leucæmia with its sudden increase in lymphatic tissue, interorganic hæmorrhages and febrile movement often simulates acute inflammatory or suppurative processes demanding surgical interference. The omission of a blood examination, or a leucocyte count only, may lead to an operation which hastens the almost invariable fatal outcome. Every surgeon and every laboratory worker can recall one or more of these cases, where a complete blood examination would have prevented the error.

The value of blood work in the differential diagnosis between Hodgkin's disease and sarcoma, and between secondary anæmia and so called pernicious anæmia merely need mention.

The changes occasioned in the blood by hæmorrhage, the fact that the consequent anæmia does not become apparent for at least six hours, or such time when the blood has had opportunity of taking up fluid to represent the loss, and the occurrence of a post hæmorrhagic leucocytosis are common knowledge, they are of value in estimating the severity of the hæmorrhage, and must be considered when interpreting blood changes at such time.

Determination of the coagulability of the blood by the method of Wright or by means of one of the many other devices in use, is of value to the surgeon, particularly as means have been devised for increasing the coagulability prior to surgical procedure in cases where this seems desirable.

The occurrence of a leucocytosis and relative polynuclear increase was at one time considered of value in the diagnosis of malignant disease, and while it is a fairly consistent factor in sarcoma, particularly in the rapid growing variety, it is very frequently absent in carcinoma, and when it occurs suggests that it may be due to a secondary infection and a guide to the extent of the accompanying inflammatory process.

The determination of the opsonic index as ad-

* Read at the meeting of the Surgical Section of the Academy of Medicine, December 20, 1906.

advocated by Wright and Douglas has occasioned much interest of late, but the procedure will lack practical application until ways and means are found for increasing this index when desirable.

The most important service the blood examination can render the surgeon is to give information concerning the presence or absence of an inflammatory lesion, and in case of its presence, some idea of its severity and some indication of the resistance offered.

Locke and others have advocated the iodine reaction or iodophilia as a guide in this regard, its presence as well as intensity indicating the character and severity of the lesion. Though faithfully tried I must admit that it has not rendered signal service in my hands.

Since advocating the value of the differential leucocyte count as an aid in the diagnosis of acute inflammatory lesions and the added significance it gives to the leucocytosis, before this section a little short of two years ago, my continued daily contact with cases in which this diagnostic help is sought, strengthens rather than weakens my belief in this adjunct in surgical diagnosis, often presenting as it does, valuable data at a time when the clinical picture may be confusing.

In the application of this procedure it is absolutely essential to keep in mind the fundamental principle on which it is based, as follows: The increase in the relative number of polynuclear cells is an indication to the severity of the toxic absorption, and the degree of leucocytosis an evidence of the body resistance toward this absorption. It is evident that neither the differential leucocyte count or the actual leucocyte count are of value alone, and that they must be considered together to obtain the desired information.

A number of criticisms have appeared which would tend to prove this diagnostic help of doubtful value, the latest one of which I am aware being a paper by Dr. Norman E. Ditman read before the Obstetrical Section on November 22nd. It is unfortunate that such statements are usually made without proper regard to the fundamental principles on which the method is based, and enumerate a series of pitfalls without any mention of the much larger number of results which have been of decided utility. Figures have been quoted of cases where purulent exudates have been found without a relative polynuclear increase in the blood with evident disregard of the fact that the pus was enclosed in such a way that no toxic absorption occurred. Other cases are mentioned in which high polynuclear percentages were unaccompanied by purulent exudate or gangrene, not mindful of the fact that such polynuclear increase may also be seen in other than suppurative conditions. As in every other technical procedure, the differential count to be at all accurate demands proper technique and faithful execution, usually expected but by no means invariably obtained from the hospital interne or even from the pathologist's assistant, as I have reason to know from control examinations which I have been asked to make.

While it is true that errors and exceptions surround this the same as other diagnostic aids, and it as well as the others are of use chiefly to the

clinician who learns their proper application and limitation, no one can gainsay the fact that it fills a place occupied by nothing else. A case of appendicitis with possible gangrene or a case of otitis media with possible mastoid involvement may present a train of symptoms possibly coupled with conditions somewhat opposing operation at the time, so that the surgeon is really in doubt for the moment as to the absolute necessity for interference. The differential count, together with the leucocyte count, particularly if repeated has been the direct cause of saving such cases to the correctness of which I know many clinicians will give testimony. In neither instance quoted has the blood examination given any aid in the direct diagnosis, nor has it detracted one iota from the necessity for careful bedside observation, and still it is impossible to deny its value.

Dr. C. L. Gibson is the author of the following: "The higher the polynuclear percentage as compared to the leucocyte count, the greater the probability of a purulent exudate. It is of value chiefly in indicating fairly consistently the existence of suppuration or gangrene as evidenced by an increase of the polynuclear cells disproportionately high as compared to the total leucocytosis. The greater the disproportion the surer are the findings, and in extreme disproportions the method has proved itself practically infallible."

With my enthusiasm in advocating this diagnostic help in acute inflammatory lesions, I grant you that the procedure lacks many refinements we might desire, and it is well to add a few words concerning the disappointments and failures sometimes encountered. Children, and particularly infants, do not give the uniform results obtained in adults, and it must be recalled that in these the normal polynuclear percentage is a more variable quantity, and when they are severely infected it seems that a drop in the polynuclear percentage may be due to a lack of ability to further absorb toxic material, thus indicating a graver rather than an improved condition.

When the purulent exudate is confined in dense pyogenic membrane so that no toxic absorption occurs, or when a purulent exudate is the result of a tuberculous or typhoid infection alone, there is no leucocytosis and no polynuclear increase. Suppurative bone lesions, and particularly suppurative processes on the surface of mucous membranes, show lower counts probably on account of slower toxic absorption. Mixed infections with or following tubercle bacilli or typhoid bacilli do not show the extreme polynuclear percentages noted in primary staphylococcus and particularly streptococcus infections. The exact nature of the infection also has a bearing on the degree of polynuclear increase, some organisms causing higher percentages than others, everything else being equal. The small percentage of absolute error remaining must be explained by the supposition that the blood specimen obtained does not truly represent the condition of the circulating blood, an error reduced to a minimum by repeated examination.

I have purposely omitted a tabulation of cases to demonstrate the value and results of the different phases of blood examination; this is ob-

is a somewhat difficult task for the laboratory worker, and no longer essential, owing to the large experience had by the clinician and the many published accounts of the same.

In closing I would refer to the diagnostic value of blood cultures in septic conditions, a detailed consideration of which is really beyond the scope of this communication. It is unfortunate that the technique is such that this diagnostic aid has not found favor in private practice.

TREATMENT OF CHRONIC URETHRAL DISCHARGES.

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A systematic search of the anterior and posterior urethra, with its accessory sinuses, having led us to a definite lesion or lesions we are prepared to give our attention to the proper treatment. A urethritis which has run a course of ten or twelve weeks has arbitrarily been termed chronic. We will consider the treatment under the same heads and in the same order as we studied it in *The Diagnosis of Chronic Urethral Discharges*.¹

Uorrhœa is a term applied to a sticky discharge usually following a prolonged or severe attack of urethritis. It is the product of over active mucous glands or relaxed vessels. All local treatment has a tendency to increase the condition, except in some cases which will respond to the local injection of five minims of 1 to 2,000 adrenalin chloride solution. General tonics such as iron, quinine and strychnine, with a nutritious diet, proper hygiene, and cold spinal sponges in the morning will soon bring about a cure if the patient is broken of that pernicious habit of constantly stripping the organ.

Gleet is dependent upon a granular patch within the canal (anterior) which oftentimes is posterior to a stricture. When independent of this, coarctation the entire effort must be directed to the patch, but when associated with it a disappearance of the stricture will cause a simultaneous cure of this ulcer.

Treatment of Gleet Dependent upon a Patch or Erosion Independent of a Stricture. The lesion in this case may be single or multiple with a normal condition of the intervening mucosa. Such a condition would be signified by clear urine and scaly shreds and should be treated by the regular passage of a graduated steel sound about every second to fifth day, depending upon the reaction in the individual case, particular care being exercised as suggested under *Diagnosis* as to the size of instrument to be used. An increase of two millimetres at each séance is usually satisfactory, although it may be found proper to use the same size for several treatments. We should be guided in this selection by the pain caused or the reaction which follows. The sound thoroughly cleansed and lubricated should be introduced with the greatest gentleness, always remembering that the fingers are used only to guide the instrument, and under no circumstances to force it into the bladder; it should be allowed to remain within the canal two or three minutes when it is re-

moved and an irrigation of a warm solution of silver nitrate or copper sulphate one to five thousand used, elevating the irrigator not over two feet above the bladder with the patient in the standing posture. The strength of the solution should be increased 1,000 each time to tolerance as long as the urine is clearing and the symptoms are becoming less, sounds not being introduced in the presence of cloudy urine.

While introducing a sound the surgeon should stand on the left side of the table (looking towards the patient's feet) and hold the instrument lightly between the thumb and forefinger of the right hand, with the left forefinger and thumb holding the penis laterally and lightly, at the same time having the fore-skin retracted, and being sure that there is no twist in the urethra. Allow a few inches of the instrument to fall into the canal as the shaft is held above and parallel to Poupart's ligament, then carry the handle to the median line with its end pointing to the umbilicus; bring one hand towards the other, following in the direction of the shaft of the instrument until its distal end meets with an obstruction as it enters the bulb; the left forefinger should then be placed at the scrotoperineal junction, which is the surgical landmark of the bulb, and used to guide the beak of the sound into the membranous urethra. When the handle of an instrument is raised too soon the beak encounters the anterior layer of the triangular ligament, while if it is dragged too long it will push the beaked end into the bulb, much as an inverted glove finger may be pushed through. When we remember that the spongy urethra down to the bulb is movable, and from this point on, which includes the membranous and prostatic urethra, it is fixed, we should simply withdraw the instrument for about one inch and reintroduce it in order to correct the trouble. A properly placed sound will have the handle pointing toward the patient's feet and the surgeon will be able to grasp the handle and lightly rotate the instrument on its long axis. If force is used in introducing the sound a false passage or ruptured urethra, with urethral fever, may be the result; the former is more likely to occur when a small instrument is used. An accident of this sort would call for the introduction of a soft sterile catheter, which should be tied in, and the patient put to bed, given a milk diet and internal urinary antiseptics, such as hexamethylenamine or phenol salicylate combined, with a flushing out of the canal twice a day with one to one thousand silver nitrate. Bleeding to an amount more than a few drops should never occur, and when it does suspicion of one of the accidents stated should arise. When the meatus is too small to admit a proper size sound cocaineize the meatus with a five per cent. solution applied on a pledget of cotton, and with a blunt pointed tene-tome cut on the floor of the canal, making the incision no larger than will admit a sound two sizes larger than the normal dimensions call for. A small piece of gauze should be placed in the incision and changed after each urination. Each night a sound two millimetres larger than the normal calibre should be introduced just beyond the curve of the instrument, which procedure is best carried out under cocaine anæsthesia. A meatotomy sound may be used to advantage. Should a spasmodic obstruction be encountered, particularly at the bulb, allow the instrument to rest gently against the face of the

compressor urethræ muscle so as to tire it out, as in the case of any other muscle. The sound, under these conditions, will gradually slide to the bladder, where, as if we had attempted to use force, a spasm of the sphincter would have been the result, offering absolute resistance to its further progress.

Incision at the meatus large enough to produce a surgical hypospadias is both useless and harmful as it acts as a predisposing cause for subsequent gonorrhœal infection and lessens the projectile force of the semen, which is at times a factor in a barren marriage. The use of urethral dilators obviate the necessity of a meatotomy; these instruments are particularly valuable in chronic folliculitis and follicular prostatitis. They provide a method for perfect dilatation of these mucous glands, but the objection is that they are expensive to add to a general practitioner's outfit, and unless great caution is exercised, especially when cocaine is used, the urethra may be readily ruptured.

The selection of the irrigating fluid whether silver, copper, ichthyol, or any of the mineral or vegetable astringents, will depend upon the results noted from time to time. The drug selected should be the one that causes a cessation of the discharge, the urine to become clear and the shreds to become fewer and lighter; of course no instrument would be introduced while the urine is cloudy as a consequence of the presence of pus.

Now we may consider those cases in which a stricture has been detected with the use of the bulbous bougie; it is unwise to rely upon the use of a graduated bougie (often called a sound) for this search. The first question is, is the stricture to be dilated or cut. The rule to cut all strictures under a certain size is as pernicious as it is arbitrary, as some strictures which will admit the smallest instrument are most amendable to treatment of dilatation, while others taking a 20 or 22 French measure will never respond to this treatment. It is not the size but the character of the new growth which means that it is soft, cartilaginous, resilient or irritable, which should decide this important question. Our attention is rarely directed to a stricture under one year, following the attack of gonorrhœa which caused it, as it takes from one to four years for the round cells in the periurethral tissue to become sufficiently organized to produce symptoms. It should be the aim of the surgeon to dilate all strictures, where possible, as by doing the cutting operation we simply replace a gonorrhœal round cell infiltration with a traumatic one, and after the cutting operation dilatation must be continued, therefore it appears rational to cut only those that cannot be dilated.

The following is a good working rule: Dilate all strictures except those that are resilient, cartilaginous, irritable, or bleeding, allowing that the technique is correct. Where a stricture reaches a certain point and persistently refuses to dilate further; where there is repeated and excessive bleeding, or urethral fever, then, regardless of the calibre, a cutting operation is advisable. Internal urethrotomy is indicated when the lesion is at or near the meatus, but external urethrotomy or perineal section should always be done when the stricture is at or near the bulb. A departure from this rule is to invite infection, as the bulb represents the base of a U-shaped tube (ure-

thra) with its consequent bad drainage. The two areas mentioned are the favorite seats for stricture. It is needless in this paper to give a description of the surgical work for this condition, but a word of caution as to a close observation of the landmarks: Not over a one inch incision, and opening the urethra only in one place, and that one directly in the centre, will save many of the embarrassing complications attendant upon this work.

Having studied the individual case carefully and decided that it is one suitable for dilatation we outline a course that will restore the urethra to its normal calibre, determined by measurements as suggested under *Diagnosis of Chronic Urethral Discharges*. Granted that the urine is not cloudy we begin with a graduated bougie that will just comfortably enter the stricture, the idea being to use an instrument which will cause a microscopic rupture of the submucous cellular infiltration without doing violence to the overlying tissue. The more slowly we proceed and the less traumatism that we cause the quicker will the desired results be obtained and the more permanent the effect.

The question is constantly asked: Can a stricture be permanently cured? To this question there is a diversity of opinion, but I believe that by passing a full size steel once a week for at least six months after we have reached the normal capacity of the urethra we shall, in many cases, be able to answer in the affirmative. By following this method I have had the opportunity of making a subsequent exploration of twenty-seven urethral canals not having been treated in over five years, one eight, and one nine and one half years, and in none of these cases was the slightest trace of the former coarctation in evidence. Some of these cases were under 15 French measure when they came under my care. The same rules as to asepsis and antisepsis as suggested in *Diagnosis* should be here adhered to, and the technique for passing the sound as outlined before. The prestrictural stage, or where the round cell infiltration causes a periurethral thickening, demands this same treatment. The length of time between each visit is graded as in the use of instruments for the treatment of erosions, and the same criteria noted.

We must always keep before us that we are dealing with a much abused and irritated mucous membrane, and not add insult to injury by a too zealous poking. I feel sure that were all chronic cases weighed carefully we would find that more chronic discharges were kept up by a too vigorous treatment than by a too indifferent one. We might be surprised, occasionally, if we directed our patient to take a two weeks' respite from all treatment, to find the result in a certain number of cases to be a complete cure. Some cases, however, might be benefited by supplementing the dilatation and irrigation with an astringent hand injection to be used at home by the patient. While I agree to the fact that artists are born not made, I register a strenuous objection to believing that urethral manipulators of the home-made type will come under this classification. No man is endowed with a knowledge of how to use a urethral syringe, therefore give him detailed instructions, as only too often it is not the drug that we use but the manner in which we use it that is responsible for success or failure. Have the patient

empty his bladder, cleanse the glans and subpreputial sac, retract the foreskin, sit on the edge of a hard chair or bath tub, grasp the meatus lightly and laterally, use a two drachm syringe with an absolutely dull end (first exhausting the air from the syringe by turning it up and slowly pushing the piston until the fluid begins to flow steadily over the end), then having slowly introduced the fluid until the anterior urethra is filled up, which would have opened the folds of the mucous membrane, withdraw the syringe and compress the meatus laterally, retaining the fluid from one half to five minutes, depending upon the drugs used. The silver preparations other than the nitrate, being nonirritating, should be allowed the longest possible time to penetrate; astringents, especially those combined with heavy powders, such as bismuth, will distribute themselves very promptly. A very useful combination of astringents is bismuth subcarbonate \mathfrak{v} ii; boroglyceride \mathfrak{v} ii; mucilage of sassafras q. s. ad. \mathfrak{v} iv, to which may be added fluid extract of hydrastis. In the very late stage some formula similar to Ultzman's will be useful. Pulv. alum., zinc sulph., aa gr. x, mucil. sassafras q. s. ad. fluid ounces iv. The mucilago sassafras has proved a very valuable vehicle in my hands both in the acute and chronic stages of gonorrhœa.

This treatment is applicable to that form of chronic anterior follicular urethritis signified by the presence of hooks in the first urine. The passage of an instrument will open the follicles, allowing the irrigating fluid to invade the depths of these pockets. The pressure of the sound causes a reabsorption of the cellular infiltration surrounding these follicles.

A chronic cowperitis is treated from within the rectum and will be dealt with under massage of the prostate gland and seminal vesicles. Going through the cut off muscle we are prepared to treat a field in which we will find lesions responsible for prolonging a large number of cases of chronic gonorrhœa. Posterior urethritis may exist alone as a superficial ulcer of the membranous urethra with or without a thickened verumontanum, or it may be associated with involvement of the accessory sinuses (prostate gland or seminal vesicles). These are the cases in which the patient gives a history of a recurrent attack of discharge after a complete cessation for a few weeks or months, but again brought on by drink or coitus. The compressor muscle will prevent fluids coming from behind forward, but has little effect upon the infection (which had been quiescent until fanned into activity by indiscretions) extending forward by continuity of tissue. These cases are almost always associated with follicular involvement of the prostate gland, and when a posterior urethritis presents hooks in the second urine, when it acts in a rebellious fashion, or when the gland is larger, softer, or harder than normal the prostate gland should receive attention, coincidentally with the posterior canal. For treatment of the membranous urethra a Keyes-Ultzman nozzle, which may be attached to any hypodermic syringe, is required. Allow the patient to retain a slight amount of urine (to neutralize any excess of the fluid injected), introduce the instrument as a sound, stopping as soon as the compressor urethra muscle has been reached and entered. One can detect this by feeling the muscle relax, when the shaft of the syr-

inge will remain at an angle of about seventy degrees to the plane of the body in the horizontal. If the point of the nozzle has not become properly engaged the injected fluid will present itself at the meatus. Copper sulphate or silver nitrate are the solutions of choice beginning at one quarter per cent., and increasing one quarter per cent. at each séance up to five per cent. so long as conditions improve, both as to discharge and clearing of the urine or disappearance of shreds. When heavy pus shreds are being replaced by floating mucous ones, a favorable outlook may be anticipated. Ten minims of the fluid is the proper amount, and care should be taken to exhaust all the air before introducing the instrument, as it causes unpleasant symptoms in some cases.

When massage of the prostrate gland, seminal vesicles, or Cowper's gland is indicated the technique outlined in *Diagnosis* should be followed, and four or five strokes from above down made at the first visit, increasing the pressure and time of manipulations *pari passu* with improvement of the objective symptoms. From two to three minutes massage should be taken as the maximum time for each treatment.

A certain proportion of cases will resist all these methods, and if the urethral dilators are then used cautiously and judiciously they will be of immense advantage in the treatment of a persistent follicular involvement. The same may be said of the endoscope. At times we will encounter erosions either of the anterior or posterior urethra which only a strong astringent placed directly on the lesion will affect. Here a properly handled endoscope is invaluable, but I prefer to take my chances with the disease rather than in an attempt to have it treated with one of these instruments in inexperienced hands. There is no extraordinary skill required to handle it, and to any one doing an amount of genitourinary work it will appeal as an invaluable helper. Any one who cares to take the time to perfect himself in its use, under the guide of an experienced manipulator, will be amply repaid. The most common error of manipulation which the beginner makes is to push the instrument toward the bladder after the removal of the obturator, or to make an effort to replace the obturator without a total or partial removal of the tube. Either of these manœuvres is sure to result in a laceration of the mucosa. Leaded flexible bougies may, with advantage, be substituted in some cases for the cold steel sound. They are particularly adapted for sensitive stricture cases. An infected lacuna magna should be opened through a urethral speculum, curetted and touched with carbolic acid. A papilloma must be removed through an endoscope.

Now that we have devoted the proper attention to the local treatment we should be ever mindful that we are dealing with a local infection of an organ attached to a human body, and a survey of the patient's general condition may be of service. A uric acid, lithæmic, tuberculous, syphilitic, or anæmic dyscrasia, also diabetes or Bright's disease would, if corrected, improve matters. Any intemperance in living, i. e., sexual life (either excitement with or without gratification), eating, or drinking improperly (all forms of alcohol being tabooed), should be corrected. Stopping treatment too soon or too suddenly, or prolonging it too long may keep up a dis-

charge. It is safe to increase and withdraw all urethral manipulations gradually. Occupations requiring patients to be constantly on their feet have a tendency to make an acute attack chronic and keep it so. This is particularly emphasized if vibration is added to the standing posture as with motormen and conductors on trolley cars. The same diet and hygiene applicable to a well treated acute infection is, in the chronic cases, of service.

1018 N. ELEVENTH STREET.

THE PHYSICIAN'S RELATION TO THE SOCIAL EVIL.*

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On February 12, 1905, there was organized at New York city the Society of Social and Moral Prophylaxis, whose object is: "An organized social defense against a class of diseases which are most injurious to the highest interests of human society."

Although not yet a member of this society I am heartily in accord with its principles and aims, and have undertaken to prepare this paper with the idea that a branch of the society might be established here also, were it once fully realized how much this and every other community stands in need of such work.

Statistics are proverbially uninteresting except when startling. Statistics concerning the prevalence and results of venereal disease are, however, startling enough to arouse the most lukewarm, when their full significance is understood. Gonorrhœa is universally acknowledged to be the most prevalent disease except measles. Three fourths or four fifths of the adult male population acquire it. Probably nine tenths of involuntary sterile marriages are caused by it. Eighty per cent. of deaths from inflammatory diseases of the female pelvic organs, fifty per cent. of all gynecological operations, and twenty to thirty per cent. of all cases of blindness are due to it. Its complications and sequellæ in the male are most serious and often dangerous; to the female, frequently an innocent wife, they generally mean permanent invalidism and an unsexed, childless life.

Syphilis, while not so prevalent, is constantly on the increase and some of the best observers estimate its frequency in Paris as one in seven of the adult population. In a conversation with one of the three or four leading dermatologists of New York city a year ago he told me that among the better class families, which he knew intimately, whether as physician or friend, at least one third of the sons of adult age had syphilis. To the account of syphilis must be laid all the cases of true locomotor ataxia and eighty or ninety per cent. of those of general paresis. Two per cent. of all syphilitics and over twenty per cent. of tertiary cases develop cerebrospinal lesions. Over forty per cent. of all abortions not artificially produced are caused by syphilis, and sixty to eighty per cent. of syphilitic children die *in utero* or soon after birth. And it would be for-

tunate, both for the individuals and humanity at large, did all cases of hereditary syphilis suffer the same fate. Another feature about syphilis, which renders it, although less frequent than gonorrhœa, more terrible in its results, is that it is not purely a sexual disease. It is often acquired in the most innocent manner, being communicable by the use of drinking glasses and other table implements, wetting pencils in the mouth, by surgical and dental instruments, and above all, by kissing. Many physicians are infected in the practice of surgery and obstetrics.

So much as to the effects of venereal diseases. Now let us turn to the means by which most of them are acquired, at least primarily—prostitution. An interesting fact relative thereto is the changed attitude of the continental medical profession during the past fifteen or twenty years. When I first studied in Germany and Austria, in 1890, the general feeling among physicians, as well as the laity, was that coitus, intramarital or extramarital was a physiological necessity to perfect health. The secretion of semen occurred regularly; it should be voided in the normal manner, at fairly regular intervals, the same as the urine and feces. One of the leading nerve specialists in Vienna told me that, when his son arrived at the age of eighteen he should select a suitable mistress for him, in order to save him both from the danger of venereal disease and from moral contamination and influences tending to a worthless, spendthrift life. While in Berlin I knew of widows procuring mistresses for their own sons, with the same objects in view. Since that time, however, there has been a great awakening among the continental physicians as to the terrific inroads of sexual vice and disease upon the national life, and to-day there exist, in both Germany and France, large societies whose sole aim is social and physical prophylaxis against prostitution and venereal disease. A large group devotes its energies to the development of protective measures, designed to permit the vice, but shield the vicious from disease. By far the greatest number, however, has the same aims as the American society.

My conception of these may be briefly stated as follows: The education of our boys in sexual matters before the imagination has become polluted by the usual schoolboy methods, the teaching of the undeniable fact that sexual abstinence is compatible with perfect health, and tends to increased virility through reabsorption of the semen (it is, indeed, asserted that the tremendous success of the Roman catholic church is due to the chaste lives led by the great majority of its priests, thus enabling them to devote their whole vigor and energy to the work of spreading the Gospel), and the stimulation of the moral nature to the point where the prospective bridegroom shall demand of himself the same purity of past life which he expects, as a matter of course, in his bride. Further than this it is aimed to diffuse knowledge, so deficient at present, regarding the dangers and penalties of illicit intercourse and to correct the false ideas prevalent concerning the infrequency of syphilis and the innocuous nature of gonorrhœa, the latter error hav-

* Read at the annual meeting of the Medical Society of the County of Monroe.

ing been largely disseminated by the medical profession before the discovery of the gonococcus by Neisser, and its repeatedly established presence in the brain, spinal cord, kidneys, joints, endocardium, and pus tubes in fatal cases.

Very many well meaning physicians believe that in the legal regulation and segregation of prostitutes and their regular examination, we may find a panacea for these ills. If they will investigate the recent history of prostitution in continental Europe, they will learn that these means have been tried and found altogether wanting. The percentage of syphilis and gonorrhœa in Paris, Berlin, and Vienna, increases year by year in spite of governmental control.

To the careful observer the explanation of this fact is obvious, being twofold in nature. Firstly, the examination is necessarily hasty and incomplete. Griffith (*Medical Record*, lxx, 1904) reports that at Paris four hundred prostitutes were examined in an hour and a half. Only in case of the presence of a rash or mucous patch were the genitals examined again. No microscopical examination was made. If we remember that in fully one third of syphilitic women it is impossible to find the primary genital lesion during its whole existence, that prostitutes are expert at removing all traces of gonorrhœa by douching, and finally that a syphilitic lesion or a gonorrhœa may be contagious two or three days or more before being recognizable, even by a careful observer, and thus escape the first examination that possibility of infection may in any event begin immediately after the one examination, and continue till the next, a week or a fortnight later, during which time many may be inoculated, the fallacy of such protection is evident. Secondly, many men are kept continent or at least are restrained from frequent vice through fear of venereal disease. Remove that fear by a medical certificate of genital soundness, issued to all prostitutes, and you will multiply illicit intercourse greatly.

In my opinion the only salvation lies in the education of the young; but how to educate is a most perplexing question.

As to education by printed matter there is almost complete consensus of opinion that for every youth who is benefited there are several others who will have their curiosity aroused and their sexual appetite prematurely developed and will only acquire a longing for the early gratification of this passion. I remember to this day the acute delight of a group of boys, including my brother and myself, ranging in age from nine to twelve years, while reveling in the perusal of an old Doctor Book with realistic illustrations, found stowed away on the back of a shelf in the family library. And books or pamphlets on these subjects will inevitably fall into the hands of younger children, who are at an age when only harm can result.

Shall lectures on these subjects be given? This course is nearly as open to objection as the preceding, since thus also many will be only injured and their imaginations prematurely excited. Yet the matter of age can be better regulated than with printed literature, and, with proper selec-

tion of the youths composing the audiences, the good accomplished might outweigh the evil. But, as a rule, after such a lecture, you will see groups of boys discussing, with suspicious interest and levity, what was intended as a serious object lesson.

Who, then, shall instruct the young? Manifestly the parent, when that parent, as unfortunately is too rarely the case, has found time from the pressing duties of his daily life to keep himself in full sympathy with his children, and has made himself the willing participant of their joys and their sorrows, the confident of their evil as well as their good deeds. But too many parents are indifferent, too many reserved or prudish for us to hope for much dissemination of sexual knowledge from this source, without stimulus or pressure from without.

To whom, then, must posterity look for relief unless to the physicians, members of that one profession the altruistic effort of which has ever been to render unnecessary its own calling, to prevent disease, and thus take away its own livelihood? Fortunately for the world physicians are awakening to their trust in this matter also, and I am proud to say that leading urologists and dermatologists, men like Neisser, Fournier, Jullien, Lassar, Morrow, Bulkley, Keyes, and Bransford Lewis, are in the forefront of the movement.

But the societies organized by these physicians, assisted by many prominent laymen, are only nuclei, and it seems to me that every physician, who realizes the benefits of right living and the dangers of vice and venereal disease and who is enough of a man to himself live a pure life, is shirking his duty to mankind if he does not enroll himself as a coworker with these great societies, whether united in their membership or not.

My own suggestion would be that each physician should keep these two objects continually in view. First, that he should consider it his duty that, at a certain age or rather development, not waiting for puberty as many suggest, because a distorted knowledge of sexual matters has, practically always, been imparted by others long before that time, but at the age of seven or eight to eleven years, the sons of his clientele and acquaintances should receive a beginning in sexual education. He should impress this duty upon the father, when he is capable and willing to perform it; when this is not the case, or there is no father, he should suggest the necessity of such teaching and signify his willingness to impart it.

The suggestions by Keyes (*New York Medical Journal*, February 10, 1906) appeal to me as being eminently practical. In substance they are as follows: That children before the age of puberty and before the emotions have become connected with any sexual ideas, should acquire from their parents the idea, "that all life, of plant, of animal, of fish, of bird, comes from a previous life, and that, as a rule, it requires two previous lives before there can be any new life, that one of these lives is a male life, supplying something and the other a female life supplying the rest." Through instruction as to the male and female blossoms of trees and flowers and the agency of bees in

fructifying orchard blossoms and thus producing seeds and fruits, the child can be led to acquire a natural idea of sex or rather the idea that sex is a perfectly natural and not a mysterious thing. With increasing years the knowledge of the fertilizing of flowers by insects may be succeeded by that of the fertilizing of insects by each other. Then, through the sexual relations of animals to those of human beings the steps are easy, and the child will learn to look upon the propagation of species as something quite natural, and the sex problem for him will be robbed of that mystic secrecy, that odor of forbidden sweets, which engenders lascivious thoughts and the delight in obscene stories, and keeps up that obsession of morbid desire, not unmixed with dread, which haunts a considerable portion of the life of nearly every youth.

Similar information, together with that concerning the function of menstruation, should be imparted by mothers to their daughters, but at a later age, since in them the sexual idea does not, as a rule, very long antedate puberty.

Who can doubt that if a majority of physicians would adopt this course, teaching in addition the greatness of self control and the dignity and beauty of a pure life, as well as the degradation and dangers of vice, twenty years hence would see a remarkable change in the health as well as in the composite character of the nation?

You may smile at these ideas, and call them Utopian, and assert that the physician is too much overworked already; but it is his lasting glory that he has reduced the dangers of many formerly fatal diseases to a minimum, that diphtheria, hydrophobia, and variola have been largely shorn of their terrors, and that even the "white plague," tuberculosis, is in a fair way to lose its grip upon the lives of ten per cent. of the human race.

Why not, then, this new, unrewarded and certainly for a time misunderstood and unpopular crusade for the salvation, not merely of health and life, but of character?

348 UNIVERSITY AVENUE.

A DISCUSSION OF SOME IMMEDIATE AND SOME REMOTE CONSEQUENCES OF CRANIAL INJURIES, BASED ON THREE CLINICAL HISTORIES WHICH ILLUSTRATE THE EXTRADURAL, SUBCORTICAL, AND INTERMENINGEAL TYPES OF INTRACRANIAL HÆMORRHAGE.*

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(Continued from page 107.)

CASE II.—History. *Penetrating stab wound of the skull; subcortical, postcentral hæmorrhage, with contralateral sensory disturbances and visual word blindness; operation, with evacuation of clot and faradization of cortex; rapid disappearance of all symptoms except astereognosis.*

On April 29, 1903, about four o'clock in the afternoon, George D., a bartender, forty-two years of age, was stabbed with a heavy jackknife on the left side of

the cranium. The knife was about 10 in. long, and was supposed to have penetrated to its full length. Though feeling some what weak and unsteady, he was able to walk with assistance to a neighboring house, where, after a time, he lost consciousness. Later on—he does not know after how long an interval, but it was "after dark"—he came to himself and was helped upstairs to bed. There was no headache, dizziness, nausea, or vomiting at any time; no convulsions. He was kept in bed for two days, during which time he experienced a sensation of "pins and needles" over his entire right side, and the corresponding arm and leg were completely helpless; there was also some confusion in speech, so that the names of things and persons were often miscalled; there was, however, no hindrance to articulation. On the third day he began to regain some power of awkward movement in the right leg, sufficient to let him get up alone and bear his weight upon it; he could also move the arm, though in less degree. He found, at the same time, on endeavoring to read a newspaper, that he had completely lost the power of recognizing written words.

The patient visited the dispensary on April 27th, just a week after the injury; there he was seen by Dr. H. M. Thomas, who secured his prompt admission to the hospital. He was a well built and well nourished man, with pulse persistently slowed to the neighborhood of 60 beats per minute, and a subnormal temperature registering at times as low as 97°. There were no subjective sensations of discomfort in the head, nor any external evidences of intracranial pressure. An examination of the eyegrounds was negative and there was no shrinkage of the visual field for form; the color field was not plotted. He was naturally an intelligent and quickwitted fellow, and seemed in no way to have had his mental activity dulled by the injury. Aside from the points of neurological interest, the physical examination was practically negative. The hand and arm and the lower leg were cold, clammy, and bluish in color with a boggy suggestive of œdema.

A thorough and repeated study of his symptoms was made by several observers, particularly by Dr. H. M. Thomas, Dr. C. W. Young, and the writer, and from the copious notes made at the time, the following essential points have been taken.

On the left side of the head, anterior to the parietal eminence, there was a scalp wound, two cm. in length, covered by a fresh scab. This wound (Figs. 11 and 12), which was somewhat obliquely placed, lay directly behind the middle of the Rolandic fissure, which, according to prescribed measurements, had been carefully marked out on the head. A line erected perpendicular to Reid's base line from the external auditory meatus passed directly through the centre of this oblique wound at a point eleven cm. above the meatus and seven cm. from the midlongitudinal line. The pupils were equal and their reactions normal; there was no evidence of any cerebral nerve lesion. The only apparent disturbance with the patient's mental processes lay in the fact that he was unable to recognize letters and could with difficulty read only a few common words.

By far the most remarkable features of his case, however, were the sensory paralyses which involved the entire right side of the body. His right arm and right leg were held in awkward positions, and with his eyes shut he was totally unaware of the attitude that they had assumed. All movements of the right arm or leg could be carried out, though somewhat awkwardly, provided the patient was allowed to observe them. Thus, the grasp with the right hand was powerfully made, though the act was slowly performed, and the patient experienced some difficulty in "letting go" when once the hand had closed. With an effort he could close his fist, and even a greater effort was necessary to extend the fingers once more. Separate movements of indi-

* The Wesley M. Carpenter Lecture, delivered at the New York Academy of Medicine, October 18, 1906.

vidual fingers could not be made. There was a complete absence of sense of position in space, and with the eyes closed he had no knowledge whatsoever of what the observer had done with one of these extremities.

He could stand fairly well and could walk, although his gait resembled in a measure that of a hemiplegic, with dragging of the right foot; and with each step involuntary throwing movements occurred in the arm.

nature in the other extremity on the same side. If, while recumbent, an effort was made to raise the right leg from the bed (some exertion being necessary for this act), his right arm at the same time was elevated. The same thing was true when standing or, as shown in the accompanying photograph, when sitting (Fig. 13). The reverse of this action also occurred, for, when attempting to elevate or flex his right arm, provided



FIG. 10. CASE II.—Skull showing field of operation; position of stab wound in dura and cortex with subcortical clot; excitomotor area determined by unipolar faradization.

All movements of the right side were accompanied by a coarse ataxia. He could stand on both feet with his eyes shut without wavering, but even with the eyes open he was unable to stand on the right foot alone. The loss of postural sense affected even the musculature of the face and tongue.

He gave a most striking example of homolateral associated movements. Every volitional movement of the right arm or leg, if forcibly made or if resisted by the observer, and whether made in flexion extension or rotation, led to an involuntary movement of the same

the movement was resisted, his leg would be raised from the bed or flexed at the same time. Similar associated movements were carried out during efforts to hyperextend either the arm or leg. Thus, when lying on his face in bed during the endeavor to elevate the leg from the bed the right arm would invariably be extended from the shoulder. Even when his attention was called to them he was unable to restrain these associated movements, and with his eyes closed he was uncertain whether his volitional effort resulted in any movement whatever, either in arm or leg.

Over the entire right side of the body, in addition to this loss of the sense of movement, and of position in space, there was a dulling of sense of touch, with almost complete anaesthesia on the extremities. Likewise, the same perception for pain was almost entirely lost.

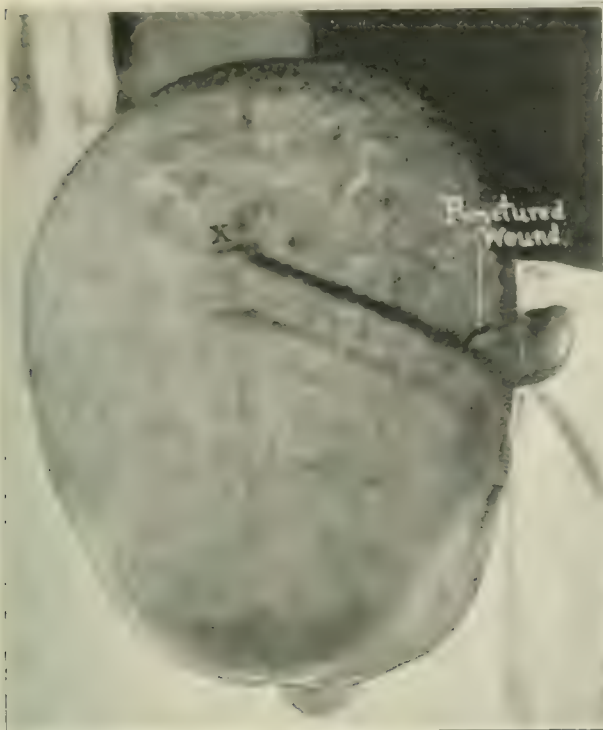


FIG. 11. CASE II.—Upper view of head to show relation of supertentorial wound of scalp to central fissure drawn upon scalp according to prescribed measurements. X indicates superior Rolandic point.

pletely lost in arm and leg, and partially so over the trunk and face, where he was unable to distinguish between the head and point of a pin, though contact was there appreciated. The dulling of sensation even involved the mucous membrane of the mouth and nose.

The pressure sense was abolished, and he was unable to appreciate differences in the weight of objects over either extremity or over the chest or abdomen. This was shown most delicately by the constriction band of the blood pressure apparatus, of whose presence on the arm and changes in pressure he was totally unaware.

There was complete inability to recognize the form or consistency or even the presence of objects placed in the hand, even though, with his eyes shut, he succeeded in closing the fingers over them.

He experienced great difficulty in recognizing taste qualities on the right side of the tongue. Gustatory impressions, though present, were not sufficient to enable him to distinguish between sweet, sour, bitter, or acid; qualities which were immediately recognized on the left half of the tongue and correctly named.

The deep reflexes were present on both sides and were equal, both at knee and ankle. The superficial reflexes were abolished on the right side with the one exception that occasionally a suggestive extensor response in the great toe could be obtained on deep plantar stroking. All superficial reflexes, plantar, anal, cremasteric and abdominal, were active and normal on the left side.

The special examination in regard to the speech mechanism showed that the patient had complete understanding of, and could repeat, even difficult sentences. He could tell time accurately; count money without difficulty. He could recognize and name all simple objects. He read figures fairly well, though with an occasional

mistake. He could sometimes read a short, simple sentence, but was not able to appreciate the meaning of sentences composed of more than a few words. He was totally unable to name letters. Could not hold a pen in his right hand, but when endeavoring to write with the left he got the letters wrong, even in his own name, recognizing that they were wrong. He could write nothing at dictation. In copying, which he did with difficulty, he transposed written characters into printed characters. He wrote numbers fairly well at dictation, although at times he made mistakes in them.

From the above quite frequent upon the following and the results of the examination it was concluded that the patient was suffering from a cortical lesion; and from our knowledge of the mechanism of fractures we presupposed that, in addition to a wound of the brain, the penetrating blade had caused a splintering of the inner table of the skull, with depression of fragments which of themselves were partially responsible for the symptoms. It is a commonly accepted surgical principal that all punctured fractures of the skull should be immediately operated on, for the stated reason as well as to lessen the danger of meningitis or abscess from the chance introduction of foreign substances. The period, however, during which there is danger of infection had passed, and had we been assured that there was no depression of fragments, an operation at that time likely enough would not have been undertaken.

The case is chiefly interesting from the stand-



FIG. 12. CASE II.—Lower view of head to show relation of supertentorial wound of scalp to central fissure.

point of cerebral topography as well as of cortical localization, the details of which possibly had best be deferred until the operative findings have been noted. The anatomical situation of the external wound practically corresponded, by

surface measurements, with the middle genu of the central fissure, although this did not necessarily indicate where the brain was wounded, since, as we shall see, the scalp and skull were obliquely penetrated. The symptomatic evidence of trouble pointed chiefly to the postcentral sensory areas in the parietal lobe—if we are to believe that the primary registration of sensations occurs there—and to the visual word centre of Kussmaul nearby in the angular gyrus.

It might have been supposed, from the hemiplegic character of his symptoms that there was either a cortical or subcortical lesion of the pyramidal tract as well, but to my thinking, the course of events disproved this, and I believe the

was no increase of deep reflexes, and also it may be foretold that free and natural volitional movements immediately returned *pari passu* with the early postoperative improvement in sensory perception.

It formerly was my custom, as a preliminary measure for cranial explorations, to shave the head and mark out on the scalp the lines which correspond with the Rolandic and Sylvian fissures. Many rules have been given for the establishment of these lines and their employment in cranial operations dates back to the days when few operations were done, except in case of involvement in one way or another of the motor cortex; days when the Rolandic fissure was supposed to run practically through the centre of the motor territory; and days, when the effort was made, through a small trephine opening, to expose some particular motor centre, which, from signs of paralysis or irritation, was evidently involved in a focal lesion.

A comparative study of the topographical lines described by Reid, Cunningham, Thane, Chipault, Broca, Taylor and Haughton, Poirier, Krönlein, and others, has shown that they possess in most respects, for the average adult, close correspondence and considerable accuracy, particularly in the establishment of the upper and lower ends of the Rolandic fissure; but owing to the great individual differences in its form, brought about chiefly by the varying degrees of prominence of the genua, the intermediate parts of the fissure may lie anywhere from one to two centimetres (the width of a convolution) either anterior or posterior to the straight line drawn from the superior Rolandic point, at an angle of from 67° to 74° with the median line. Hence, inasmuch as it is the intermediate portions of the motor field that we usually expose—for the superior Rolandic point is inaccessible, owing to the lateral expansions of the sinus, and, according to our present methods of exploration, the lower point as demonstrated on the scalp is turned back and concealed by the broad bone flap, so that it cannot be of great use in orientation—such preliminary delineations are of very little service. Our present knowledge also of how narrow a field on the exposed part of the cortex is occupied by the motor centres shows how blind our earlier methods of exploration used to be. With a large area of exposure, contrary to the opinion which has been expressed by some, one can usually recognize the central fissure by its form, by the genua, by the ascending cerebral veins, and by other topographical aids, and if doubt exists as to whether one or another convolution is precentral, it can be determined in a moment by modern methods of cortical stimulation.

The power of visualization of deep structures which comes with constant practice, not only in the operating room, but also in the anatomical laboratory, and which is merely the application of a knowledge of anatomy in three dimensions, should enable the operator to see through the skull and determine with definiteness sufficient for all practical purposes where the main fissures lie. Otherwise he operates at haphazard, and I believe that dependence upon the superficial de-



FIG. 13. CASE 11. Photograph of patient taken during effort to raise right leg. Note associated elevation of arm. Patient, with eyes closed, is unaware of extent of movement of leg, and totally so of position of arm.

seeming paralysis was due merely to the temporary shutting off of sensory impulses. This may have been a factor in producing the homolateral associated movements (*Mitbewegungen*) which were unusually outspoken in his case. Contralateral associated movements are much more frequently observed.⁸ Though all sense of position was lost the patient was able, in an awkward fashion, to carry out almost all movements of the hand, arm, and leg with little, if any, loss of strength, provided he was allowed to observe the movements. The reflex act of walking he performed fairly well, for it is an act probably controlled, as Horsley has shown, by subthalamic centres, even when cortical connections have been severed. It is to be noted, too, that there

⁸ Curschmann. *Beiträge zur Physiologie und Pathologie der*
Deutsche Zeitschrift für Ner-
venheilkunde, vol. 31, p. 1, 1906.

lication on the scalp of the various fissures is more often misleading than helpful; an operating neurologist should by training be able to visualize the main fissures of the brain with practically as great accuracy as he could determine them by rule of thumb measurements.

One further point in regard to the preparation for a craniotomy may perhaps deserve mention. It is the custom of many surgeons to have the head shaved and a provisional effort made to render the scalp aseptic the day before the operation—some even insisting on a repeated performance of this sort. I believe these precautionary measures are not only unnecessary, but injudicious. The patient is made uncomfortable; few hospital orderlies are able to shave a scalp without making some small lesions, and a close shave, and the application of antiseptics usually results in sending the patient to the operating room with some small points of infection from hair follicles and a sore scalp. It is our habit to have the patient's head carefully shaved just before the anæsthetic is administered—and in a critical case this is a duty assumed by the operator himself—the anæsthetic is then administered on the operating table in the position in which the operation is to be performed, and just as soon as the primary stage has passed, the head is scrubbed and prepared; then with a scalpel the outline of the proposed flap is scratched on the scalp; a layer of gauze wet with bichloride is thrown over the entire head; the tourniquet is applied and finally all but the small operative field is covered by the protecting towels or sheets. Unless the flap be so outlined, the covering in of the field of operation may so conceal the head that one's orientation is lost. I earnestly believe that, in operative work upon the brain more than anywhere else on the body, the surgeon must follow his patient through every detail of preparation, position on the table, anæsthetization, etc., if he will avoid the surgical calamities which sometimes come to these cases out of a clear sky; for there can be no doubt that in many respects it is the most difficult and at the same time most delicate field of operative endeavor.

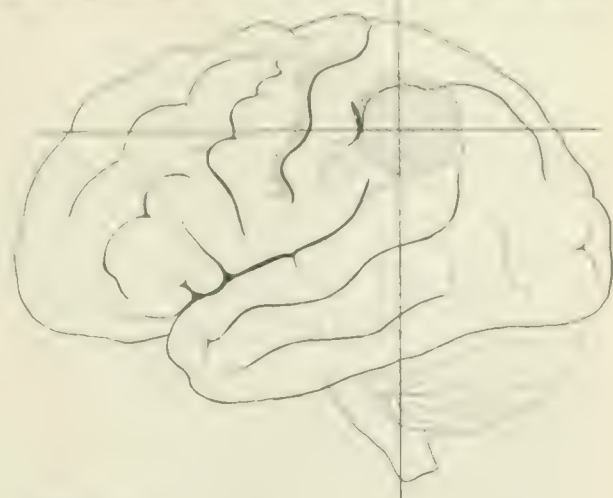
Some of the principles of technique which I have laid down heretofore and in this place may seem finicky to many surgeons, but our excessive precautions must receive consideration in view of our results, if for no other reason, for we have never had an infection, deep or superficial, in our long series of craniotomies, and our immediate operative accidents have been practically nil.

CASE II (Continued).—Operation. *Exploratory craniotomy; evacuation from the postcentral area of a large superficially placed subcortical clot; faradization of motor cortex.*

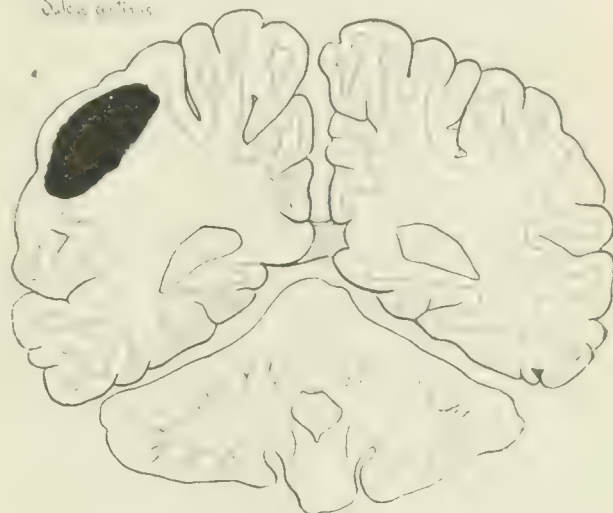
Under a tourniquet a large osteoplastic flap was turned down, the scar of the stab wound being practically at its central point. The area enclosed within the omega shaped opening in the bone was sufficiently large to have widely exposed the paracentral convolutions from the superior genu down to the Sylvian fissure, but it proved unnecessary to open the dura to this full extent (Fig. 10).

Somewhat to our surprise there was no depression whatever of fragments from the inner table of the skull; merely a fine punctured wound showed where the

bullet had penetrated. The *Mind* had evidently been a short one, directed posteriorly, and the *Made*



Sulcus centralis



Sulcus centralis



FIGS 14, 15, 16.—Showing the approximate situation of the clot in relation to the cerebral convolutions of the external surface as well as on coronal and horizontal sections.

had perforated the dura two centimetres or more behind the overlying wound in the scalp.

It was apparent on palpation of the dura that there was an increase in local tension, and posterior to the punctured wound there could be seen through the dura a bluish discoloration suggesting the presence of a local clot. By an incision concentric with the incision for the osteoplastic flap the dura was opened and reflected. This disclosed an incised wound in the cortex, and out of this wound fragments of an old, black, blood clot immediately began to extrude themselves. Surrounding and behind the cortical wound the surface of the brain over an area about three centimetres in diameter was discolored to a bluish tinge, showing where the extravasation had taken place. Slight pressure over this area sufficed to empty the pocket, and about an ounce of old clotted blood was expressed from the cortical wound. The hemisphere immediately receded to its proper level and no longer showed any tendency to protrusion. The situation of the clot is approximately shown in the accompanying sketches of sections of the brain (Figs. 14, 15, 16).

The patient's condition being good, the cortex, so far as it was exposed, was then faradized. There was no difficulty from the topographical relations alone in recognizing the central fissure, owing to its well marked genua, and the first point of stimulation just above the central genu elicited a motor response in the hand. Anterior to the central fissure no point of the exposed cortex, except at the far lowest end of the convolution, failed to give reactions to the unipolar electrode. Movements in the wrist, thumb, and fingers were elicited from the convolution above the central genu. Opposite to this prominent landmark movements in the neck were obtained, and below it, movements of the face, shown as contraction of the orbicularis, elevation of the ala of the nose and upper lip, retraction of the lower lip and twitching of the platysma. In this patient was a well marked inferior genu, below which centres for the jaw and tongue were demonstrated. As usual no response whatever was obtained on stimulation of the convolutions posterior to the central fissure. Stimulation of the most anterior part of the exposed cortex gave movements of the right eye (toward the right) with no observable movements of the left eye. Associated movements of the head to the right were not noticed and may have escaped observation, as the head was already turned to the right and lying on a hard pillow.

Having this double assurance of the situation of the central fissure, it was possible to tell just what relation the incised wound of the cortex bore to it. The anterior edge of the wound was about one and one half centimetres posterior to the nearest part of the fissure, and almost directly behind the middle genu.

The dura was accurately resutured in place, the bone flap put back and the scalp wound closed by careful approximation with interrupted sutures.

The patient made a good recovery from the anæsthetic, was not nauseated, and in a few hours his mind was sufficiently clear to enable us to make sensory tests which showed that improvement in his condition had already taken place.

Comment.—The features of this case pertaining to cortical localization are of unusual interest, and side by side we have examples of two of the various methods through which our knowledge of the separate representation of cortical function has been slowly acquired, namely, (1) the focal symptoms produced by a lesion, the precise situation of which had been demonstrated at operation; and (2) the responses called out by electrical excitation of the cortex.

My good fortune in being at work in Professor Sherrington's laboratory while he and Grünbaum were making their important studies in delineat-

ing the motor cortex of the anthropoid brain, and in being privileged to assist in their experiments, gave me an early familiarity with their precise methods of observation, methods which for the past five years I have invariably put into practice whenever stimulation of the cerebral hemisphere, exposed by operation or injury, has been needed for purposes of localization, or has seemed justified in the interests of physiological investigation.

All told, there have been a few more than fifty cases, in only one of which—a patient with a subcortical tumor involving the pyramidal tract—have I failed to elicit from the precentral gyrus definite responses of the same character as those obtained from the anthropoid cortex; and the impression that clean cut, sharp responses are brought out with greater difficulty and require a stronger current in man than in the lower animals is erroneous and probably based on the faulty technique of earlier observations.

A few of the precautions which are necessary for the successful elicitation of these responses may be mentioned: In the first place, it is essential that a unipolar electrode be employed, for it was in this way that Sherrington and Grünbaum were able to obtain a finer localization than their predecessors, and thus to avoid many of their errors. The electrode which I have used for clinical purposes is made by passing a fine platinum wire through the centre of a piece of rubber tubing of small calibre, which in turn fits closely in the lumen of a piece of glass tubing about eighteen inches long, the terminal cuffs of the rubber core being folded back over both ends of the glass tube. The contact end of the wire should protrude about three inches from this glass handle; its tip should be blunted and the wire coiled (Sherrington) so as to make a delicate spiral spring, and when prepared in this way the electrode cannot produce a lesion of the cortex, no matter how hard it is pressed against the surface. Such an electrode can be sterilized and handled by the operator, the connection being made by an attendant who fits into the other end of the rod the terminal plug which commonly ends the connecting wire of the battery. The other electrode should be large and flat, and is connected with the body elsewhere, our usual custom being to have it bandaged to the outside of the thigh on the same side of the body as that to be operated on.

It is essential in the second place that the subarachnoid fluid be evacuated. This may be done by carefully tearing the membrane with a needle in some nonvascular spot where it bridges over the sulci between two convolutions. When the fluid escapes the membrane will settle down closely over the convoluted surface; otherwise, if there is an abundance of fluid in the subarachnoid spaces the effects of the stimulation will be widely spread and the results confusing from diffusion of the current.

Furthermore, the stage of anæsthesia is an important factor. On the one hand, under deep narcosis, so strong a current is required to produce responses that several centres are likely to be stimulated at once and a complex spreading move-

ment is produced, on the other hand, if the degree of narcosis is too light voluntary movements may confuse the observation.

In close accord with Sherrington's findings in the ape (Figs. 18, 19, 20) have been our own in man; and Krause, Frazier, and other surgeons have recorded similar corroborative experiences. Near the sulcus centralis there is practically no point of the precentral convolution, except at its lower tip, that will not give responses; the anterior border of the excitomotor strip fades away without a sharp outline. Centres only a millimetre or two apart will lead to quite different movements, and it is for this reason that the old bipolar method led to obscure results, owing to diffusion of the stimulus. The centres for the lower extremity have been exposed and stimulated only once in my series, for, owing to their protected position under the lateral expansions of the longitudinal sinus into which the midcerebral veins enter, and where there are vascular adhesions associated with the Pacchionian granulations, they are most inaccessible. Until I had succeeded on one occasion (a tumor at the upper end of the postcentral convolution abutting on the sulcus centralis) in uncovering this area, I had been led to doubt the reports made by many of direct excitation rather than diffuse stimulation of the leg centres in man. At best, however, it must be granted that in man their exposure, even on the external surface, is difficult; whereas the centres on the mesial surface of the hemisphere are entirely beyond reach. Responses in the trunk and neck have been elicited from points opposite to the superior and the inferior genua, respectively, and I am under the impression that, as in this case, there is often a well marked genu still lower down, above which lie the centres for the face, while those for tongue, jaws, palate, etc., lie below it. The same thing is even better seen in Case III.* I have spoken, consequently, of the so called "inferior" genu as the "middle" genu.

In a few cases of cortical extirpation for focal epilepsy it has been possible to show, in accordance with Sherrington and Grünbaum, that excitomotor centres extend on its anterior surface to the very depth of the sulcus centralis; furthermore, that the paralyses which follow such extirpations from the precentral convolution, though marked at first, are not long enduring. In one case of Jacksonian epilepsy beginning with a sensory aura in the hand, a segment of the postcentral convolution was removed at a level opposite to the motor centres for the hand; there resulted a considerable dulling of cutaneous sensation over the hand with slight awkwardness in movement of the fingers, a disturbance of postural sense rather than a definite paralysis. Extirpation of segments from the precentral convolution is not followed by anæsthesia.

*It seems to me—I do not know that the view is original—that the formation of these valuable landmarks, the genua, is the natural outcome of the excessive grouping of cells (just as the cervical and lumbar enlargements are made in the cord) in the areas presiding over movements of upper extremity, of lower extremity, and of face. This causes a lateral widening of the convolution opposite to these areas and leads to a sinuous outline of the central fissure, which originally was straight. In the intermediate areas presiding over the relatively unimportant movements of the trunk and of the neck there is no such aggregation of cells, and consequently there are, in some cases, apparent projections (the genua) from the postcentral convolution opposite to these narrow fields.

With the same strength of current required to produce reactions from the true "motor cortex" I have never been sure of eliciting any movement whatsoever from other parts of the hemisphere. Once I thought that definite movements of the eyes were obtained from stimulation of the occipital pole, and only in this patient under discussion have movements been obtained from the anterior "head and eyes" area, though, as has been stated, no movement of the head accompanied the ocular response. Evidently these centres, if they are to be considered "motor" at all, are less excitable and represent movements of quite another order from those obtained on the precentral convolution or motor strip proper.

As in the lower animals it is very easy in man, to elicit epileptiform convulsions from any point of the excitomotor cortex if the current be too strong or too long applied, and when centres have once been brought to this degree of irritability a subsequent stimulation of less strength may suffice to set off a similar motor discharge. It is my impression, too, that convulsive movements are more readily obtained from the cortex of epileptics, as in Case III, than of those not subject to fits, but of this I cannot be positive. The convulsion, of course, always spreads from the centres primarily stimulated with a definite Jacksonian "march."

Let us now turn to the question of sensory localization. One hesitates to enter into the discussion as to whether there is a cortical sensorimotor area in Munk's sense or a topographical separation of the motor and sensory fields, for it has divided experimentalists, as well as clinical neurologists, into opposing camps; but even those who are most extreme in their views regarding the separate localization of function in cortical areas must acknowledge the intimate physiological relation between receiving sensory stations and discharging motor stations.

It may be said, however, that since Fritsch and Hitzig first succeeded in demonstrating that there was an excitomotor cortex, the proper interpretation of this finding was obscured by the imperfect methods of their followers which led to the view that the motor field was of wide extent and lay on both sides of the central fissure. This, of itself, was sufficient to mislead those interested in cerebral physiology into believing that there was an overlap between the fields of sensory registration and motor discharge. Since the papers by Sherrington and Grünbaum, which have so unequivocally limited the actual excitomotor cortex to a narrow strip anterior to the Rolandic fissure, confirmatory observations from the cytological, embryological, and clinical side have rapidly followed, and a considerable readjustment of our ideas in regard to the sensorimotor cortex has been necessitated. Notable among these contributions have been the splendid studies of Alfred W. Campbell¹⁰ on the histology of the cortex, those of Paul Flechsig¹¹ on myelinization.

¹⁰Campbell. *Histological Studies on the Localization of Cerebral Function*. Pp. 169. Cambridge University Press, 1907.

¹¹Flechsig. *Einige Bemerkungen über die Untersuchungsmethoden der Grosshirnrinde insbesondere des Menschen*. *Beilage der mathematisch-physikalischen Klasse der Königlich-sächsischen Gesellschaft der Wissenschaften zu Leipzig*. January 11, 1904.

and the numerous papers of Charles K. Mills based on clinical observations.

In neurological experimentation upon the lower animals the study of anæsthesia of the cortical type in particular is unsatisfactory to a degree, since anæsthesia is a subjective matter and its interpretation necessitates the intermediation of speech between patient and observer. Hence it is with clinical cases that one gains especial insight into disturbances of the sensory areas. Cases of cortical anæsthesia, however, unassociated with evidence of disturbance in motility have been rare¹² and cases which, like the one cited, possess the definiteness of an experimental observation, are especially few and far between. Our clinical data in regard to the subject has, for the most part, been acquired from patients possessing pathological lesions which, in many cases, have first or last actually involved the pyramidal tract; and it is but natural that the study of these cases, particularly before we were aware of the circumscribed field occupied by the motor cortex, led many to believe that motor and sensory paralyses could not occur separately. It largely depends, to my thinking, upon what we are to consider motor paralysis, for there is no doubt but that a shutting off of sensation must affect the volitional carrying out of purposeful movements which depend so greatly upon afferent impulses. Much the same thing has been shown experimentally in regard to the movements of an extremity after division of the sensory fibres passing from it to the cord; thus as demonstrated by Sherrington, when all the dorsal roots to the upper extremity, for example, have been divided, even though the ventral (motor) roots remain intact, the limb hangs practically helpless.

CASE II (Continued).—Postoperative Notes. *Complete recovery.*

On the very evening of the day of the operation evidence of improvement in the patient's paralyses had begun to show itself. The blueness, coldness, and sweating of the right hand and foot had disappeared, and the extremities were alike in temperature and appearance. He called attention to the fact that he could move the hand and foot with considerable freedom, and insisted that he had "natural feeling" in them once more.

On the following day it was found that the arm and leg were moved readily without the stiffness and ataxia that had been present before. It was found that he could distinguish pain, temperature, and touch in the right arm and leg, and had already begun to recognize words and letters, though there was still some confusion in making out their meaning. He could not read a sentence of any length or complexity aloud, but thought that he could get the sense of it better than before.

On the third day (May 7th) the wound was dressed, the sutures removed, and the incision supported by collodion gauze strips over a silver foil protection. The following notes were made on his condition at this time. "Temperature sense over the entire right side seems to be everywhere as acute as on the left. There is little, if any, difficulty in the recognition or ability to locate promptly the prick of a pin anywhere on the right side of the body. There persists, however, some slight dulling of the pain sense in the fingers and toes. The same is true for the sense of touch, delicate tactile

stimuli being appreciated over the entire right side with the exception of the hands and feet, where there remains some hypæsthesia."

"The affected muscle sense, on the other hand, remains unimproved, and the patient has no ability to appreciate the position in which the arm or leg is placed. He cannot distinguish between forcible extension or flexion of the fingers, wrist or elbow, toes, ankle, or knee. He seems, however, to have a better idea of position in space, as with his eyes closed he is able to find his right hand with his left better than before. The return of sensation is evident from the fact that the foot is now very sensitive to plantar stimuli; whereas before only a deep stroke of the sole would elicit a response, now a delicate touch calls forth promptly the normal plantar flexion of the great toe. There still remains some evidence of the associated movements, though they are considerably less marked than before, and this would indicate that they are in some way linked with disturbances of muscle (postural) sense rather than with the forms of cutaneous sensation, which had even at this early time been almost completely restored."

May 8th. A marked improvement in muscle sense noted on this date; patient is able to distinguish between flexion and extension of elbow and wrist, and of knee and ankle, but is unable to tell as yet the position of the fingers or toes.

May 10th. With the exception of a slight dulling in hand and foot to tactile impression tested with a hair æsthesometer, cutaneous sensation is everywhere normal, and there is no appreciable difference between the two sides of the body. There persists some disturbance of muscle sense, and the stereognostic sense remains as before the operation—totally abolished. The patient is able to move about and care for himself. He stands readily, walks without difficulty, and with no trace of the original stiffness and awkwardness of the gait, and says: "I can, of course, walk better now because I can feel the floor." He is able to hold and examine objects placed in his hand, but for the most part is unable to name them. He cannot distinguish between objects even of different shape or texture. He guessed that a pocket knife was a piece of money; that a folded handkerchief was a pencil. He is able to hold a pencil and can write his name, the letters of the alphabet, and many words at dictation, though they are somewhat awkwardly formed.

By the end of another week, May 17th, there was no evidence of disturbance of motion of any kind on the right side. Careful tests for muscle sense and sense of position showed no difference in the two sides. The associated movements had entirely disappeared. Appreciation of all forms of common sensation were equally acute and accurately localized on the two sides. He says that he can read as well as he ever could. Stereognostic sense has returned in the foot, and he readily tells the difference between a crossed pencil and its blunt end; between round and irregular objects, etc. In the hand, however, total astereognosis persists.¹

During this immediate postoperative period the patient was thoroughly examined almost daily by Dr. Thomas. At this time, in addition to the stated observations, he noted that "in reading aloud the patient sometimes hesitates and confuses words, although seeming to understand them. He writes without difficulty; figures readily and accurately. His gait is normal, his muscular strength is equal on the two sides, and there

¹ Various observations on taste were made throughout this early postoperative period, but inasmuch as I am able to offer no explanation for them, the results of these observations have not been included in the text. Certainly the primary taste centre was in no way affected, but the patient was rarely able to name the character of any of the four cardinal taste qualities. He seemed to receive a gustatory impression, but was unable to tell what it was. On the left side of the tongue he could name promptly the quality of the substance used.

¹² The question has recently been given a careful study by Friedrich Müller, *Volkmann's Sammlung Klinischer Vorträge, Innere Medizin*, No. 118, 1905.

is no longer any difficulty in relaxing the hand after he has firmly grasped an object. The deep reflexes are equal on the two sides, but only obtainable by reinforcement. Differences in slight degrees of pressure are quickly appreciated on the right side. Plantar responses, as well as reflex movements from other cutaneous stimuli, are readily elicited and alike on the two sides. Muscle sense is normal. The stereognostic sense alone shows evidence of the original lesion, with no sign of improvement as yet."

The patient was given a position as one of our hospital orderlies a month after his operation, and remained under our immediate notice for a long period of time. He finally regained the power of recognizing objects in the right hand, so that after a few months there was little, if any, difference between the two sides. With the exception of this one form of sensory disturbance, all of his symptoms had vanished within two or three weeks after the operation. When last thoroughly examined (October, 1903) there was no trace of disturbance of any kind. He remains (September, 1906) perfectly well.

Comment.—We have seen that in our patient not only the sense of position in space, of movement, and of pressure (sensation of the deeper structures), were absent, but also that cutaneous sensibility for touch, temperature, and pain was lost over the contralateral half of the body in the form usually assumed by sensory paralyses of cortical origin, namely, a total loss over the extremities shading off in some degree as the trunk is approached; also that the lesion involved the visual word centre in the angular gyrus. In addition, there was present a certain disability of movement which may clinicians might regard as a partial paralysis and an evidence of pyramidal tract involvement.

A series of cases of cortical anæsthesia that cannot be detailed here have led me to the opinion that a sufficient lesion of the hemisphere posterior to the sulcus centralis (Rolandi) with no precentral lesion whatever may produce motor symptoms which, however, are unaccompanied by degeneration in the pyramidal tract, and hence should not be regarded as a motor paralysis in the common acceptance of the term.

In one of these cases there was situated in the upper part of the parietal lobe near the central fissure, a small infiltrating glioma which caused no increase in tension and consequently none of the underlying symptoms of brain tumor. Localizing symptoms alone were present, and they were closely akin (barring the word blindness) to the sensory symptoms shown by the patient whose history has been detailed above. The motor symptoms, however, were much more marked, and she had very little volitional use of her hand. All movements of the right side were carried out awkwardly and stiffly, though she could walk fairly well; and the same homolateral association of movements between arm and leg that have just been described were present in her case. She died as the result of a secondary hæmorrhage (dural) after a successful extirpation of the tumor. No degenerated fibres whatsoever were present in the pyramidal tract in sections taken from various levels of the spinal cord. There were a few degenerated fibres in the dorsal columns, representing the scant degeneration at a distance (retrograde) such as one sees after experimental extirpation of cortical areas posterior to the excitomotor field in the lower animals.

After the evacuation of the clot in the case under discussion we have seen that practically nor-

mal motility returned before there was a complete restoration of sensation (although in rapid sequence normal sensory perception for the various forms of stimuli was regained), leaving a pure astereognosis which became limited to and persisted in the hand for some months.

Before leaving this case I desire to say a word in regard to the operative treatment of subcortical hæmorrhages and those of spontaneous origin in particular, for I still believe that, with proper methods, in trained hands, surgical intervention in certain cases of apoplexy is a rational measure, not only for purposes of decompression to ward off urgent pressure symptoms, but to hasten recovery by removal of the clot. My three experiences which have been recorded elsewhere were most encouraging, though they were limited to moribund patients. The usual capsular clot occupies a definite position and can be approached without great difficulty, and when once reached will extrude itself, owing to the cerebral pressure which is occasioned by its presence. The history of the patient here given shows definitely with what celerity all symptoms, except those due to an absolute destruction of tracts, may disappear after the removal of a subcortical clot.

(To be concluded.)

REPORT OF A CASE OF GONORRHŒA OF THE MOUTH.

By SAMUEL M. HYMAN, M. D.,
New York.

In spite of a quite noticeable increase in the numbers of those habitués who indulge in the buccal form of sexual gratification, gonorrhœa of the buccal cavity is so infrequent in its occurrence as to be an ample apology for its report when it does occur.

Miss M. F., eighteen years of age, French-Irish descent, had come to me complaining of "terrible pain and burning in the mouth and cheeks." After much questioning, she admits to practicing buccal as well as natural intercourse.

Subjective Symptoms: She suffers from pain, burning, and a feeling of heat and rawness of the mouth. She avoids meals, as she fears the intense pain caused by swallowing either liquid or solid food, especially the latter, when quite some bleeding occurs. Her mouth feels parched, even though there is increased expectoration of a foul odor and containing traces of blood. The tongue is swollen and painful. No incubation period could be established; her symptoms commencing with dryness of the mouth, followed by all the others within twenty-four hours after. Constant nausea is also present.

Objective Examination: Uvula, soft palate, and cheeks are found covered with a milky white membrane, showing bleeding spots present here and there within it. This membrane is nonadherent, and on removal shows beneath a red inflamed surface, resembling the scarlatinal blush. The tongue is red and swollen, patient being unable to protrude it completely. Gums are spongy, markedly retracted from the teeth, and bleed freely on handling. Buccal temperature is 99.7° F.; temperature in the axilla being only 98.2° F.; pulse and respiration are normal. Genital gonorrhœa is absent.

Microscopic Examination: The pseudomembrane is seen to consist of mucus, epithelial and pus cells, within and around which are groups of staphylococci and dip-

lococci, the latter having all the staining and morphological characteristics of the gonococcus of Neisser.

Treatment: Calomel, 10 grains at bed time; while locally were made applications of silver nitrate, commencing with 1:250 and increasing to 1:50 daily, with gradual amelioration of symptoms from the start; and total disappearance of exudation on the fifth day. From the fifth to the tenth day patient was given gargles of boric acid, saturated solution, and alum 1:100; after which time patient was discharged as cured.

606 EAST NINTH STREET.

EMPHYEMA OF SOME OF THE ACCESSORY SINUSES OF THE NOSE COMPLICATED BY AN ORBITAL ABSCESS.*

By JOHN GUTTMAN, M. D.,
New York.

Read before the American Medical Association, etc.

Notwithstanding the fact that affections of the accessory sinuses of the nose are comparatively not rare, still their presence, especially in their latent chronic form, is often overlooked, because their subjective symptoms such as headache, dizziness, etc., are of such a general nature that their cause might be looked for in the pathological condition of some other organ, such as the stomach, kidneys, nervous system, etc.

The objective symptoms, on the other hand, can only be properly diagnosticated by an expert, to whom the patient is usually referred by the family physician, after he had excluded all possible diseases of other organs, which might be the cause of the trouble.

When the affection of the accessory sinuses of the nose is in the acute stage or is complicated by an affection of another organ, as in our case, with an orbital abscess, the prompt recognition of the nature of the disease becomes less difficult. The history of the case is briefly as follows:

A girl fifteen years old, of good family history, was in perfect health up to her present illness.

September 21st. She began to complain of toothache which was relieved by some medicine obtained from a drugstore, so that she could sleep that night.

September 22nd. In the morning the toothache had recurred, and at the same time the patient became feverish, and had a severe chill; the cheek began to swell, and the physician who was called in, ascribed the swelling of the cheek to be due to a "gumboil," and accordingly incised the gum.

September 23rd. Another physician was called in and he had the offending tooth extracted, but as the swelling of the cheek began to spread to the eyelids, I was called in consultation and on examination found the following conditions: Temperature 103° F., pulse 110; the right cheek and the upper and lower lids of the eye on the same side markedly swollen; very marked chemosis of the conjunctiva protruding under the swollen eyelids; the eyeball was bulging forward, and its movements were considerably diminished; the region of the inner canthus was red, swollen, and sensitive to pressure; vision of the right eye was about 15/200; the interior of the eye showed a hyperæmia of the disk and examination of the nose revealed a foul smelling discharge exuding from the right middle meatus of the nose.

On the following morning I had the patient call at my office where I made an exploratory puncture of the

antrum of Highmore and found pus present. I then performed a radical "antrum operation" by removing a large part of the anterior wall of the antrum, breaking through its interior wall and leading into the middle meatus of the nose. The next day I removed the anterior part of the middle turbinated body, entered the ethmoidal sinus and evacuated a great deal of dead bone and foul smelling pus. After that I opened the orbital abscess through the inner canthus of the lid, and enlarged the communication between the abscess cavity of the orbit and the ethmoidal sinus by breaking through the lamina papyracea, which had already been partially destroyed by the suppurative process, thus securing better drainage.

Three days later I allowed the external wound to heal and at the present time a small scar only is visible. After five days the foul discharge had ceased; the hyperæmia of the disc disappeared and vision became normal.

The case is interesting on account of the foudroyant onset of the disease which, had not prompt surgical procedure been resorted to, threatened not only a vital organ such as the eye, but also the patient's life.

The virulent pus might not only have penetrated the eyeball, and destroyed it, but could also have entered the cranial cavity through the optic canal or the cribriform plate of the ethmoid and set up a brain abscess. The whole process made very rapid progress; forty eight hours only having elapsed from the beginning of the toothache to the swelling of the eyelids. It is not very probable that the primary cause of the onset of the disease is to be found in an inflammation at the root of the tooth, which spread to the maxillary sinus, from there to the ethmoidal sinus, and thence to the orbital cavity.

In a similar case reported by me in the *Annals of Ophthalmology* in January, 1900, I expressed the belief that the cause of the disease was solely due to the carious bicuspid teeth, that the inflammation was set up by the teeth from which an empyema of the antrum had developed, and this led to a purulent inflammation of the adjacent sinuses, but upon more mature deliberation it seems to me that it is more probable that the patients were suffering from a latent chronic empyema of the ethmoidal sinus, which gave no noticeable subjective symptoms, and which spread to the maxillary sinus. The empyema of the antrum brought about a decay of the root of the tooth, and at the same time the latent smouldering inflammation flared up in a very acute form, by some unknown virulent agent, forming ultimately an orbital abscess.

54 ST. MARK'S PLACE.

Origin of Hæmaturia.—An approximate determination of the origin of a hæmaturia may be obtained by noting the following points: If pure blood is followed by clear urine, the origin is in the urethra; if the patient first passes urine, then blood, the source of bleeding is probably in the bladder; if urine evenly mixed with blood is voided, the kidney is probably responsible for the hæmorrhage; if long, fine clots resembling worms are passed, these usually are from the ureter.—*American Journal of Surgery*, November, 1906.

* Presented at the Section in Laryngology and Rhinology of the New York Academy of Medicine, October 24, 1906.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at bi-month intervals. So far as they have been decided upon the further questions are as follows:

LXII.—How do you treat acute gonorrhea? (Closed January 15, 1907.)

LX.—How do you treat old gonorrhea? (Answers due not later than February 15, 1907.)

LX.—For what purposes and in what manner do you use opium in preference to any of its constituents or derivatives? (Answers due not later than March 15, 1907.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED) that the answers be short; if practicable, no one answer to contain more than six hundred words.

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of \$25 for the best essay submitted in answer to question LXVII has been awarded to Dr. J. Ballagi, of Homestead, Pa., whose article appears below.

PRIZE QUESTION NO. LVII.

THE USE OF MERCURY IN SYPHILIS.

By J. BALLAGI, M. D.,
Homestead, Pa.

Considering the probable grave consequences of syphilitic infection: An early, energetic, and persevering treatment of a syphilitic patient is imperative.

In mercury we possess an effective and reliable drug against syphilis. In certain stages of the sickness it is the only and specific remedy. Its speedy healing action, when well employed, is an indisputable fact. So the question remains only: Which is the best mode to use it?

Barring the unscientific mercurial fumigations, plasters, or in special cases only available medicated baths, three different methods are used. Internal administration, external application by rubbing it into the skin (inunctions), and hypodermic (intramuscular) injections.

The internal administration is comfortable and easy for the patient, clean and painless. But that is about all the praise it deserves. The effect of any mercurial preparation given "per os" is slow, the dosage uncertain. You do not know if your patient is taking all the mercury you did prescribe to take. You do not know how much of it is absorbed. Mercury, taken internally, very easily ruins the digestion, causes stomatitis, diarrhoea, etc.

Inunctions are better in almost every respect. Their effect is quicker and more stable. With due precaution mercurial poisoning can be avoided. They do not disturb the digestion. On the other hand, they are very dirty, often irritate the skin and cause dermatitis. The dosage is uncertain. Inunctions very often cannot be em-

ployed at all in private practice, out of social rea-

From my experience I look upon the hypodermic (intramuscular) injections of mercury as the most successful method of mercurial treatment. They are rather new. Scarenzio (in Italy) was the first to use them in 1868. To-day the injection method is pretty well known everywhere and rapidly spreading. About twenty to twenty-four different mercurial preparations are used. All of them can be placed in one of the following three groups, namely: 1, Metallic mercury in oily suspension; 2, involuble; and, 3, soluble mercurial compounds.

The metallic mercury we can leave out of consideration. It has no advantage over the salts and it is too dangerous. On account of that it is but seldom used.

I began to treat syphilis with injections of insoluble mercurial compounds; first, with the mild chloride, and later with salicylate. But noting that, on account of the irregular absorption of the mercury, their effect is sometimes not sufficient, sometimes again accumulating, I went over to the soluble salts. The best of them is the bichloride. I made about 1,000 injections of bichloride without any mishap.

The advantages of the bichloride injections are: In every case where mercury is indicated they can be used. So, except very young infants, the injection of bichloride of mercury has no contraindication whatever. Their effect is quick, reliable; the dosage is accurate; with due aseptic manipulation they never cause abscesses; when used in proper quantities and intervals they do not cause mercurial poisoning; at least, not more than any other mercurial medication. The doctor has the patient perfectly under control. He cannot get more or less mercury, but just the desired quantity. He cannot refill the prescription or lend the copy to another friend. Their only drawback is the pain. Some persons do not complain at all, others feel a dull pain two to three days after each injection. But the pain is never so bad as to prevent the patient from attending to his business.

I use the following prescription:

R Hydrarg. bichl. ridi. (ãã 250 grammes (40 grains);
Sodii chl. ridi.
Aquæ dest.,.....50 grammes (12 fluid drachms).
M. ft. 5 per cent. bichl. sol. for injections.

After washing the skin first with soap and water, then with alcohol, I inject a full Pravatz syringe holding 1 c.c. (15 minims) between the muscles of the buttock. The needle must be thrust in perpendicularly so deep as a one and a half inch long needle will go, pushing out the contents while withdrawing the needle. No massage or dressing necessary, when a few drops of blood are oozing out (what seldom occurs) I put on a bit of cotton for a few minutes. Needle and syringe are to be washed out with hot water before and after each injection, using separate needle for each patient. One injection is to be given once a week, and in all, according to the severity of the symptoms, from six to ten injections. I give four more injections after ten to twelve months again, if there are any symptoms

or not. Ulcers, etc., are to be treated locally, and the precautions we usually prescribe when giving mercury are to be fulfilled.

I begin with the injections as soon as the diagnosis of the primary tone is certain. There is no reason to wait for secondary symptoms.

438 FIFTH AVENUE.

Dr. L. W. Bremerman, of New York, writes:

During recent years much discussion has arisen concerning the use of mercury in cases of syphilis, as to method to be employed, and when and in what form the drug had best be administered. These questions are still open for controversy, but I will endeavor to briefly present the consensus of opinion held by the greater majority of syphilographers.

It is stated by some that it is best to wait until the appearance of secondary symptoms before beginning antisyphilitic treatment for the purpose of corroborating the diagnosis, and because of the mental effect upon the patient. It is my opinion that if the initial lesion be a typical hard (Hunterian) chancre, irrespective of history—for almost always the incubation period is unknown—together with glandular involvement, particularly in the cervical chain and the epitrochlears, it is best to begin with the administration of mercury at once, instructing the patient as to the nature of the disease, length of time required for cure, and necessary personal hygienic precautions.

Two very important points here present themselves as to the administration of mercury in this disease: First, should the treatment be continuous, intermittent, or symptomatic? Second, how long should the treatment be continued? Each method has its advocates, some preferring continuous, some intermittent, and others symptomatic. To decide which is best is difficult, because to secure statistics relative to the number of tertiary cases which follow any one of the methods is impossible, owing to the fact that to arrive at any definite conclusion the patient should be under observation for at least twenty years.

The objections advanced as to the continuous and intermittent methods are that they do not prevent relapses, and that the patient becomes so saturated with the drug that when symptoms do appear it requires large amounts of mercury to combat the pathological conditions. The symptomatic method has many followers and depends entirely upon the presence or absence of symptoms. No symptoms, no treatment. Symptoms appearing, push treatment until they disappear. My practice is to combine the intermittent with the symptomatic, beginning the treatment as soon as diagnosis is positively made and continuing it for at least six months unintermittently. The patient is directed then to gradually decrease the amount of mercury each day until he has entirely ceased to take it. For one month thereafter I allow no mercury, unless, of course, symptoms should develop, when the treatment is immediately resumed. At the expiration of one month another six months' period of

medication is directed, followed by a month's rest and so on until the patient is discharged as cured.

The opinion as to the duration of treatment varies greatly from one to five years, usually two years. However, it is my belief that it is better to use the intermittent and symptomatic treatment for three years after the disappearance of all symptoms.

Mercury may be administered in five ways: First, internal medication; second, inunctions; third, fumigations; fourth, intramuscular injections; fifth, intravenous injections. Results may be obtained by any of these, and each has its exponent. Personally, I advocate in the ordinary case internal medication. This is convenient to the patient and is advantageous to the physician, because it is wise to dispense the drug in the office in certain desired proportions, which will last the patient for a specified time. This brings the case frequently to the office, under continual observation, and the dose may be regulated as symptoms indicate. Internal medication is best given in the form of a tablet or pill. The tablet of mercuriol, 1 grain (the trade name for mercury nucleinate), has proved most efficacious in my practice and if, as occasionally happens, this form of the drug produces untoward symptoms, I usually substitute either tannate of mercury or the French protiodide. Most of the other combinations of mercury frequently produce grave gastrointestinal symptoms. It is my practice to push the medication rapidly, until the symptoms are eradicated, and then keep the patient on the minimum dose that will absolutely control the lesions.

Inunctions are very efficacious in their action. The great objection to them is due to their uncleanliness and the fact that skin irritations are likely to occur. Inunction is the rubbing into the skin of a certain amount of medicinal ointment at stated periods for a definite length of time. The rubbing should be accomplished in the following manner: First, on back; second, on arms; third, on calves; fourth, on thighs, beginning again then on back. Patients usually complain of this treatment because of uncleanliness and difficulty of keeping the disease secret. In my experience I have found that an ointment composed of one part mercury, one part lanolin, one half part olive oil, proves most serviceable, producing the best results in every sense of the word. I, however, only resort to inunctions after failing to secure results by other methods, or when the lesions present are of a grave nature and I wish to secure rapid mercurial effect. In such cases it is my custom to combine internal medication with inunctions, watching the patient carefully for indications of mercurial poisoning.

The third method is fumigation, accomplished by placing from ten to forty grains of calomel in a metallic dish in a water bath, then arranging same over a spirit lamp, the patient sitting on a chair under which stands the apparatus described. He is then wrapped in a blanket which reaches from his neck to the floor and surrounds him completely. In about one half hour the calomel is volatilized and absorbed by the skin

by reason of the profuse sweating produced by the vapor bath. This should be practiced two or three times a week until results are manifest. This method is only recommended where other treatments fail.

The administration of mercury by the intramuscular mode has recently many followers, due to the fact that it is the most scientific and accurate manner of using the drug, inasmuch as the patient must apply to the surgeon for treatment, and he, the surgeon, can inject specified and definite amounts as frequently as symptoms indicate. The injections are made with a long needle and syringe directly into the deep muscular structure of the buttocks, alternately, once a week or oftener, as the particular case demands. To my mind the disadvantage of the intramuscular injection lies in the induration and abscess formation which is likely to occur in the buttocks and sometimes the excruciating pain to the patient. Abscesses may, as a rule, be avoided, however, by strict antiseptic precautions. I have been unable to find a preparation which does not produce pain and frequently, after two or three injections, the patient will discontinue all treatment, possibly drifting into the hands of some charlatan. A great many preparations have been advanced for use in intramuscular injections, but the best of these is the salicylate of mercury in a menstruum of oil of petrolatum or lanolin in the proportion of one to ten, dose ten minims.

With the last method, intravenous injection, I have had no experience, but from observation of reports on cases treated in this matter I assume that good results may be obtained. Intravenous injections are given directly into the veins of the arm daily until symptoms disappear. It is painless, and statements are made that it cures lesions which resist all other methods. The great danger in this treatment is the possible risk of thrombosis and infection. The cyanide of mercury in the proportion of one per cent. is injected in doses of about twenty minims.

In conclusion, my belief is that if a suitable form of mercury could be prepared so as to make intramuscular injections painless this would be the ideal method of treating syphilis.

(To be continued.)

Correspondence.

LETTER FROM LONDON.

The Hospital Question.—King Edward's Hospital Fund.—Medical Women and the London College of Surgeons.

LONDON, January 5, 1907.

The hospital question is very much alive at the present time among us. The medical profession are holding meetings to discuss the abuse of hospitals and the means of preventing it; the British Medical Association has a committee specially appointed to find a solution of a problem which has vexed the minds of doctors here for many years; administrators of public charities and hospital managers are also debating the matter. So far the discussions have done nothing but to show with discouraging clearness the great

gulf that is fixed between the medical and administrative staffs of hospitals and the general practitioners, and between the latter and the public. Naturally each of these classes looks at the question only from the point of view of its own interests. The physicians and surgeons want to have cases, and the administrators are eager for numbers that will make a brave show in their reports and attract donations; neither concern themselves much about the financial capabilities of the patient. The general practitioner, on the other hand, complains that people that could well afford to pay him for his services prefer the gratuitous ministrations of the hospital. His agreement, briefly put, is that of the Frenchman charged with some mental confusion in respect of property, *faut vivre*. To which the public replies with the magistrate, *je n'en vois pas la nécessité*. The truth of the matter is that the general practitioner in London and other large towns finds himself in conflict with economic laws, and has to suffer the consequences. Of course he does not suffer them gladly. He insists that the hospitals should give up their outpatient departments, which, he says, pauperize the sick whom they relieve. He would probably say that hospital charity, unlike mercy, cursed him who gave and him who took. There is no doubt that a bitter feeling against consultants is growing up among general practitioners, and it cannot honestly be denied that there is cause for their discontent. It is unfortunate, however, that in their discussions and in their letters to the medical journals and to the newspapers they lay themselves open to the imputation that their zeal to prevent pauperization is based on purely selfish considerations. They do not understand that the public has an equal right to put its own interests first. It appears to be forgotten that the public does not exist for the profession, and that it can scarcely be blamed for securing what it, rightly or wrongly, considers to be the best treatment on the easiest terms. Another point that is overlooked is that in the public interest it is the duty of the hospitals, not only to relieve suffering, but to advance medical science, and this cannot be done without a large field of practice. It is difficult to see how the conflicting interests involved in this perennial controversy are to be reconciled; the only solution would appear to be a reduction in the number of general practitioners, accompanied by an elevation of the standard of knowledge and skill among those who can justify their right to professional existence, that will enable them to compete successfully against the hospitals.

There are for London three great hospital funds, of which the wealthiest is the King Edward's Hospital Fund, which by recent bequests has come into possession of moneys amounting to more than five million dollars. It is now applying to be incorporated by act of Parliament. The proposal was sprung by the president on his council almost at the moment Parliament was rising for the Christmas recess. It was probably hoped that the bill would go through a House whose mind was on other matters, unopposed and

almost unnoticed. In view of the amazing provisions of the bill, it is not surprising that it should have been thought expedient to attempt to rush it through. It is proposed that "all real and personal property now belonging to or held by any person or persons in trust for the fund shall constitute a general fund, of which either the capital and income thereof, or any part of such capital or income as the president of the corporation in his uncontrolled discretion may from time to time think fit, shall be applied (a) in or toward the support or benefit of all or such one or more, to the exclusion of the others, of the hospitals of London as the said president in his like discretion shall think fit, and whether such application shall be for the general or any special purposes of any particular one or more of such hospitals of London; (b) in giving aid or assistance generally to all or any one or more of such hospitals of London as the said president in his like discretion shall think fit; and (c) generally in doing all such other things as are incidental or may be thought conducive to the attainment of the best interests of the hospitals of London, or any one or more of them, or of the persons or any of them for whose benefit such hospitals exist, which the said president in his like discretion shall determine."

The term "hospitals of London" covers any present or future hospital, convalescent home, nursing home, or nursing institution, lying-in institution, dispensary, medical mission society for the provision of surgical or medical aid or appliances, and any institution for the rest, relief, or cure of sick persons as shall be situate within the County of the City of London. The direction, control, and management of the affairs and property of the corporation and the application of all moneys, property, and income of the corporation are vested in the president, who has power to appoint and at pleasure remove the members of the general council, trustees, treasurers, and other officers; to appoint and dissolve councils and committees other than the general council; to make, vary, and rescind by-laws, rules, and regulations for the management and administration of the affairs and property of the corporation; to direct the mode of collection of moneys for the corporation and the distribution and allocation of such moneys and of all property and income of the corporation to or for the benefit of all or such one or more, to the exclusion of the others, of the hospitals of London as he in his uncontrolled discretion shall think fit, and generally to determine the manner in which such moneys, property, and income shall be dealt with and applied for the purposes of the act; to determine whether any institution proposed to be benefited is or is not within the limits of the objects of the corporation as defined by this act, and generally to do or direct to be done all acts and things which in his discretion he may deem conducive to promoting and effecting the objects of the corporation. In short, the president is invested with absolute powers over the distribution of the fund; the definition of the word "hospital" leaves him free

"at his uncontrolled discretion" to bestow all the money on an institution having little or nothing of the character of a hospital or on one which may be objectionable in other ways. Thus it is conceivable that a clever woman running a small institution for invalid officers or broken down parsons might at some time capture the whole fund or a great part of it for the purposes of her own "charity." The medical profession, which actually does the work of charity, is utterly ignored in the bill. It is well known that the King is anxious to do nothing to wound the susceptibilities of a profession to which he is himself under deep obligations, and it is impossible to believe that he will approve of a measure which places the Heir Apparent in a position of uncontrolled authority over a fund in the disposal of which they claim a right to be heard. In any case no British Parliament would dare to pass such a bill in the face of any strong opposition.

Women are now admitted to medical degrees by every university in the United Kingdom, except those strongholds of Toryism, Oxford and Cambridge, and by all colleges except those of London. In 1895 a request made on their behalf was rejected by the College of Surgeons. The women are now knocking again at its doors. They have addressed a petition to the president setting forth that the number of women now on the *Medical Register* is 750 as against 200 in 1895. The students of the London School of Medicine for Women now number 169, and the efficiency of the teaching is shown by their success at the University of London. It is pointed out that a considerable number of women are now on the staffs of various hospitals throughout the country, and many hold resident posts in such hospitals. They also hold appointments under various public bodies, for instance, in the post office, in poor law infirmaries and asylums, under the Central Midwives' Board, and under the Education Department of the London and provincial County Councils. In London there is a general hospital for women, of 60 beds, officered entirely by medical women, and there are similar hospitals in other towns. Women are established in practice in all the larger and many of the smaller towns throughout the United Kingdom, and the recognition which they have gained among their fellow practitioners is shown by their appointment on the staffs of several provincial hospitals. In India women hold medical appointments in hospitals under the government, and under the rulers of native states; in the hospitals of the Countess of Dufferin's Association for supplying Female Aid to the Women of India; and in those belonging to all the missionary societies, not only in India, but also in China, in Persia, and in Africa. In Egypt medical women hold appointments in the government school at Cairo, and under the Sanitary, Maritime, and Quarantine Council. In view of these facts, the hope is expressed that women will be admitted to the examinations and diplomas of the college. The council of the college had, it is understood, spontaneously taken the matter into consideration before the women renewed their request. It is

probable, therefore, that they may at last be able to penetrate into the paradise of the gates at which they have so long stood like disconsolate Peris.

Therapeutical Notes.

Ointment of Salicylic Acid and Turpentine.—Pouchet (*Progrès médical*, November 17, 1906) uses the following combination as a counterirritant and absorbent application to rheumatic joints:

R Acidi salicylici,
Olei terebinthii rect., { ññ 10 grammes;
Adipii
Adipii benzoinati, 70 grammes;

Scurvy in Children Produced by Commercial Sterilized Milk.—Comby reported to the Société médicale des hôpitaux (*La Tribune médicale*, October 27th) a peculiar case of scorbutus in an infant, which at the outset had all the appearances of acute articular rheumatism, and subsequently developed pseudoparaplegia. The condition appeared to be attributable to feeding the infant upon sterilized milk; and was cured by change of food and appropriate treatment.

Treatment of Diphtheritic Paralysis by Antitoxines.—Mongour, in a communication to the Société de médecine et de chirurgie de Bordeaux (*Journal de médecine de Bordeaux*, November 18, 1906) called attention to the successful use of antidiphtheritic serum in cases of diphtheritic paralysis. He mentioned several instances in addition to others already published, in which the use of antitoxine had rapidly terminated paralytic lesions to refute the statements of certain other clinical observers who had claimed that this serum had no effect on paralytic phenomena. He reaffirmed his conclusions of four years ago, when he published reports of similar cases.

Scabies of Animal Origin in Man.—Bossellini in *Giornale italiano delle malattie veneree della pelle*, through *The Journal of Cutaneous Diseases*. The author describes two cases of scabies in an old man and in a boy contracted from an ass. Another case in a man contracted from a mule. In the three cases the eruption was principally upon the extensor surfaces of the arms and trunk, and was papulovesicular, intensely itchy, and in the boy the eruption on the legs was urticarial in type, with a tendency to form bullæ. There were no lesions between the fingers and no burrows. Another case was in a man contracted from scraping a hog affected with a pruriginous affection of the skin. In this case the eruption started on the hands, arms, legs, and spread almost over the entire body, and was very much the same type of an eruption as in the other cases. No burrows or acari could be found after most careful search in any of the men, but the animals all revealed the presence of abundant acari. An experimental infection was carried out from scales taken from the hog and placed in the bed of a child in the hospital for ringworm. An urticarial type of

eruption at once developed upon the arms, legs, and back. No burrows nor acari were found. The rash lasted ten to fifteen days, completely healing. The author resumes the facts that *Sarcoptes hominis* do not produce any persistent lesions when carried to domestic animals, and that *Sarcoptes equi*, indistinguishable from *Sarcoptes ovis*, cause a papulovesicular eruption upon man, but never burrow or remain longer than ephemerally. *Sarcoptes suis* may cause a more or less serious cutaneous lesion in man. *Sarcoptes canis*, according to Fröhner, of Berlin, causes definite burrows in man, and that this author has succeeded in extracting the acarus.

Incompatibility of Drugs.—In an article (*Le Progrès médical*, November 24, 1906) on Prescription Writing, Professor Pouchet gives the principal chemical incompatibilities as follows: 1, Acids and alkalies; 2, tannin and alkaloids; 3, tannin and salts of iron; 4, salts of iron and mucilages; 5, metallic soluble salts and alkaline sulphides; 6, albumin, with alkaloids, alcohols, or acids; 7, albumin, with soluble salts of mercury; 8, organic matters, with chlorates, permanganates and bichromates (for example, chromic acid with alcohol); 9, calomel, with iodides, cyanides, acids, alkalines, alkaline earths, and commercial sodium benzoate; 10, sodium diphosphate and also sodium arseniate, with salts of the alkaloids (strychnine, quinine, etc.); 11, sodium borate, in watery solution, with salts of the alkaloids, particularly cocaine hydrochloride; 12, alkaline iodides, with paralydehydrate; 13, thymol iodide and iodoform, with silver salts and mercurial salts; 14, orthoform, with silver nitrate; 15, salts of insoluble acids, with strong acids, especially sodium benzoate; 16, sodium bicarbonate in a mixture, with galenic preparations containing acids or alkaloids; 17, antipyrin, with chloral hydrate or sodium salicylate; 18, alkaline iodides, with alkaloids or glucosides; 19, camphor, with phenol or chloral; 20, iodine, bromine, sulphur, with ammoniacal preparations or with mineral salts; 21, ammonium or sodium fluoride, with lime water; 22, iodine, with oil of turpentine; 23, sodium persulphate, with chlorides, bromides, and iodides; 24, ether containing peroxides instantaneously decomposes iodoform, the solution striking a red color from this reaction; 25, resinous tinctures, with aqueous solutions; 26, sodium arseniate, with iron salts (as in the preparation of an arsenioferated wine of cinchona); 27, syrup of bitter orange peel, with acid phosphate of calcium and commercial lactophosphate of lime, or chlorhydrophosphate of lime (syrup coagulates); 28, disodic phosphate, combined with potassium phosphate forms a deliquescent mixture; 29, iodine (dissolved with the aid of potassium iodide or other solvent), with sodium thiosulphate (hyposulphite); 30, calcium hypophosphite, with potassium chlorate, or any other compound which easily gives up its oxygen and forms an explosive mixture; 31, iodol, with yellow oxide of mercury, forms a explosive mixture; 32, diachylon or lead plaster is incompatible with pyrogallol, chrysophanol, chrysarobine, and salicylic acid.

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THE CAMPAIGN AGAINST TUBERCULOUS
DISEASE.

Organized effort is as a rule wonderfully successful in moving the public to appreciation of its interests and recognition of its duties. Excellent work in this direction is done with regard to the prevention and cure of tuberculous disease, especially pulmonary consumption, by various associations, but the subject needs to be brought to the public attention continually. We are glad, therefore, to learn that the Committee on the Prevention of Tuberculosis of the Charity Organization Society of the City of New York has announced its intention of issuing once a week to various publications circulars setting forth afresh such information and such appeals as it may be thought judicious to disseminate, the idea being that the journals will publish them in whole or in part. The plan seems to us highly commendable.

We have received the first of these circulars. It reviews with satisfaction the work accomplished during the year 1906, with some special reference to the State of New York, in which, as it says, there are annually 14,000 deaths from an almost entirely preventable disease, pulmonary consumption, estimated to represent a pecuniary loss of \$30,000,000. Great value is ascribed to the popular exhibitions that have been held here and elsewhere as means of impressing upon the people the facts connected with the nature of tuber-

culous disease, the agencies by which it is spread, and the means of its prevention and cure. Stress is very properly laid upon the necessity of strict care in dealing with tuberculous sputum, for there must be no relaxation of effort in that matter, though we suppose the committee will soon lay before the public such deductions as it may arrive at from recent experimental work relating to the frequency of infection by other channels than the air passages.

IMMIGRATION AND INSANITY.

At the recent New York State Conference of Charities and Correction, held in Rochester, Dr. Thomas W. Salmon, of the United States Public Health and Marine Hospital Service, presented an instructive paper entitled The Relation of Immigration to the Prevalence of Insanity in New York State. According to Dr. Salmon, on the 30th of September, 1905, one in 363 of the native population of the State was in an institution for the insane, and one in 190 of the population of foreign birth. The immigration that has taken place in recent years seems to have contributed largely to the increase of insanity in the State, though the Italians, who have figured prominently among the immigrants of those years, have been comparatively free from pronounced mental disease.

In many instances insanity actually existing at the time of the immigrant's arrival escapes detection, but it is hoped that their number will be reduced by the operation of the detention pavilion which is to be built in connection with the Immigrant Hospital on Ellis Island, for there persons suspected of insanity may be kept under observation extending over a longer period of time than is now practicable. Thus the number of actually insane immigrants admitted may be materially lessened. But this will not affect the subsequent outbreak of insanity among immigrants, and under present arrangements the insane cannot be deported unless their malady has made its appearance within two years of the time of their landing. There are difficulties in the way of establishing the right to deport them in individual cases, and humane considerations are always at work, and always should be, to induce hesitation as to such a procedure.

Besides actual insanity, the medical inspectors seek to detect "constitutional mental inferiority or instability" and hereditary predisposition to insanity, and they certify to great numbers of instances of these conditions, but it is the practice of the immigration authorities to admit most of the immigrants ascertained by the medical officers to be burdened with these undesirable pecu-

liarities. It seems as if the practice in this respect might be changed with advantage. It is certainly more humane to turn an immigrant back on his attempt to land than to deport him after insanity has subsequently developed, when perhaps he has formed ties which it appears cruel to break.

SOME VERY IMPERFECT ABLUTIONERS.

A prominent English ecclesiastic is reported to have stated publicly on a recent occasion that there was only one bath tub in a densely populated district in London to which he ministered, and that that one tub was his own. This statement is not so remarkable itself, though very striking, as the reverend gentleman's asseveration, confirmed by competent observers, that the people in question do not bathe in any way, save on rare occasions. The women are said to be worse than the men in this respect, though it is intimated to their credit that on account of their filthiness they would be ashamed to submit to an inspection of their persons. An instance is cited in which a married couple used the same bedding every night for thirty years without its being once renovated. We are told that in multitudes of tenements the only general ablution that ever takes place is practised once on a newly born child and again on the corpse of any deceased member of the family. We suppose that these people really do wash their faces and hands, though the reports do not so state.

This is indeed a horrible state of things. We cannot imagine that it is wholly due to repugnance to water "inside or outside," as has been suggested. We prefer to believe that it is to be attributed, in great part at least, to a lack of decent facilities for bathing, including, it is to be feared, a scanty supply of water. It is not alone the consequent accumulation of extraneous dirt that accounts for the filthiness of these people; that of dead and obstructing elements of the skin and that of decomposing excretions have to be taken into account. It must be, we suppose, that these vile and noisome accumulations are usually kept within certain bounds by the attrition attendant upon the bodily movements, but even this saving process must be reduced to a very low minimum in cases of confinement to bed by sickness. In any event the normal depurative action of the skin can hardly fail to be greatly interfered with, and it would be strange if some morbid consequences of this impairment of natural and necessary functions on the part of the skin did not make themselves felt in a heightened susceptibility to disease and a diminished resist-

ing power. Observations on these points might well engage the attention of our London brethren. A practical sanitary lesson for our own people is that of the danger to the public health from any great curtailment of the water supply to the dwellers in tenement houses, whether by inadequacy of the general supply or by forcing the poor to stint themselves in the matter of water in consequence of the employment of meters.

THE EARLY DIAGNOSIS OF TYPHOID FEVER.

It has been known as a clinical fact for years that in typhoid fever the gallbladder is almost always implicated, and, as far back as in 1894, F. Fischer showed that the development of the typhoid fever organism was enhanced by the addition of substances containing bile. Closely following upon his work, bacteriologists have made it a commonplace that the typhoid organism can readily be obtained from the gallbladder. It seemed, however, to have been reserved for Conradi to demonstrate that this peculiar relation could be turned to account in the early diagnosis of this disease, and about a year ago he announced his technique, making use of a small quantity of bile, and his well known litmus-lactose-agar medium. Conradi's research has been widely confirmed, particularly by the investigations of Forner, Keyser, Müller, and others.

In a recent issue of the *Münchener medizinische Wochenschrift* (December 4, 1906) Conradi speaks of the availability of the ordinary Widal agglutination tubes for this purpose. His technique, as here announced, is as follows: From 0.05 to 0.2 cubic centimetre of blood which has been collected in a sterilized capillary tube for purposes of the Widal test is placed in a tube containing five cubic centimetres of ox gall to which ten per cent. of peptone and the same amount of glycerin have been added. This bile medium is sterilized for two hours in a steam sterilizer. After from ten to twelve hours, during which time the coagulum from the capillary tube is softened and broken up, from 0.1 to 1 cubic centimetre of the inoculated mixture is planted on the author's well known litmus-lactose-agar medium, when typhoid organisms are readily identified.

Conradi, in his most recent communication, reports that in an investigation of sixty patients suffering with typhoid fever, in at least forty per cent. a diagnosis of that disease could be made within the first week of its existence, and he believes that if a larger quantity of blood were used the diagnosis of at least fifty per cent. of the cases could be arrived at by this method. Inasmuch as the method here outlined adapts itself to carry-

ing on both the Widal agglutination and the bacteriological tests, it would seem, if Conradi's allegations are corroborated, that a distinct advance had been made in the early diagnosis of typhoid fever.

PSUDOHYSTERICAL ORGANIC PARALYSIS.

It is becoming more and more evident from year to year that the diagnosis of hysteria is a serious trap for the unwary. The occurrence of hysterical signs in many organic conditions is often all too definite and has proved a delusion and a snare. Recently Babinski has reported, before the Paris Neurological Society, an interesting history of a patient with a cerebral tumor which emphasizes the difficulty and offers some ideas relative to the early diagnosis of such tumors as well.

One knows, as a matter of fact, that a destructive lesion of the pyramidal tract is usually followed by an immediate modification of the cutaneous reflexes, and, later, almost inevitably an exaggeration of the tendinous reflexes. In the patient under consideration there was a slight disturbance of speech, followed suddenly by right hemiparesis, to account for which a diagnosis of cerebral arteritis with thrombosis and hæmorrhage of the right psychomotor zone and of Broca's convolution was made. Three months later Babinski found the patient in much the same condition, without modification of the reflexes, with feeble contractures, but having presented epileptoid crises of the right side. After having eliminated hysteria, by reason of the lack of suggestibility on the part of the patient and of the absence of all previous hysterical manifestations, and on the strength of other personal observations, he made a diagnosis of cerebral tumor. Massive mercurial treatment proving of no service, syphilis could be excluded, and a proposition for surgical intervention was made. Unfortunately the advice was not followed at that time. A year and a half later an operation was performed and a tumor weighing 310 grammes, non-adherent to the cerebrum, was enucleated. The operation having been so long delayed, the patient died. Since lumbar puncture was negative and since certain symptoms usually considered pathognomonic of cerebral tumors did not come on (papillary œdema and optic neuritis) until a year later than the time when the diagnosis was made, this was particularly difficult.

Thus a cerebral tumor may give rise to contractions, though very slight, and advance to a marked degree without the reflexes suffering the least perturbation. This is a character which

one knows belongs to hysterical paralyses, and, as a matter of fact, the resemblance between the two varieties is such that Babinski proposes to designate this symptom under the term pseudo-hysterical organic paralysis. This type of paralysis is encountered in many patients suffering from slight organic changes in the nervous system, and all too frequently the diagnosis of hysteria is made.

THE INTERMEDIATE HOST OF *FILARIA PERSTANS*.

At the meeting of the Council of the American Society of Tropical Medicine, held on Friday evening, December 28, 1906, the secretary read a letter from Dr. F. Creighton Wellman, of Benguela, West Africa. Dr. Wellman says that he has been working for two years on the life history of *Filaria perstans*, and that he believes that he has demonstrated that the tick, *Ornithodoros moubata*, is the intermediate host. This is an interesting and important announcement. Dr. Wellman is entitled to a great deal of credit for having persistently worked at the problem until he has reached what appears to be a definite conclusion.

SPACE FOR CONVENTION EXHIBITS.

Many months ago we suggested that excessive charges were sometimes made for floor space for exhibits in connection with large medical meetings, and expressed the fear that thus the goose that laid the golden eggs might be killed. That our anxiety was not without reason seems to be shown by a paragraph in a circular recently issued to the members of the American Surgical Trade Association by their president, Mr. William Lentz, of Philadelphia. "I ask your consideration and assistance," says Mr. Lentz, "in the important matter of medical convention abuse, which I intend making a feature of in my annual report. You are all aware of the exorbitant prices charged exhibitors for space and the detriment to our business by the exhibits of firms whose goods and methods can never merit the approval of the American Surgical Trade Association. Medical organizations must sooner or later recognize this if they desire our support at their meetings. This is one of the subjects where medical ethics has been long overlooked." It will be prudent, we think, for medical societies to pay heed to such a statement by the presiding officer of so important an organization as the American Surgical Trade Association. The members of the association will undoubtedly sustain their president in the stand that he has taken in this matter, and we know that the feeling expressed by him is not confined to the surgical instrument trade.

H. Skillern; treasurer, Dr. Collier L. Bower; censor, Dr. Charles J. Codman. Members elected to the Medical Society of the State of Pennsylvania for district censor, Dr. Albert M. Eaton. The following were elected delegates to the Society for the year 1907: Dr. Louis H. Adler, Jr., Dr. Judson Daland, Dr. Samuel G. Dixon, Dr. George W. Burr, Dr. M. Howard Burr, Dr. Wilmer Krusen, Dr. Charles K. Mills, Dr. J. W. McConnell, Dr. Robert L. Pittfield, Dr. Jay F. Schamberg, Dr. J. Gurney Taylor, and Dr. William M. Welch. The following were chosen as alternates: Dr. Charles W. Burr, Dr. Henry W. Cattell, Dr. F. Mortimer Cleveland, Dr. Charles A. E. Codman, Dr. Albert M. Eaton, Dr. Frank Embery, Dr. Joseph Farley, Dr. Samuel P. Gerhard, Dr. John J. Gilbride, Dr. R. Max Goeppe, Dr. William H. Good, Dr. William S. Higbee, Dr. John H. Jopson, Dr. A. O. J. Kelly, Dr. Henry Leffmann, Dr. C. B. Longenecker, Dr. George P. Müller, Dr. William H. Parke, Dr. Horace K. Regar, Dr. R. C. Rosenberger, Dr. John M. Swan, Dr. W. Hersey Thomas, Dr. James B. Walker, and Dr. T. H. Weisenburg. Twenty-two new members were elected.

The Health of Philadelphia. During the week ending January 12, 1906, the following cases of transmissible diseases were reported to the bureau of health:

	Cases.	Deaths.
Malaria, 1894.....	1	0
Typhoid fever.....	342	27
Scarlet fever.....	39	1
Chickenpox.....	68	0
Diphtheria.....	85	19
Cerebrospinal meningitis.....	3	2
Measles.....	17	0
Whooping cough.....	23	6
Tuberculosis of the lungs.....	71	70
Pneumonia.....	112	108
Erysipelas.....	7	0
Septicæmia.....	2	0
Cancer.....	17	26
Tetanus.....	1	0
Mumps.....	16	0
Anthrax.....	1	0

The following deaths from other transmissible diseases were reported: Tuberculosis, other than tuberculosis of the lungs, 7; dysentery, 1; diarrhoea and enteritis, under two years of age, 21. The total deaths for the week were 646, in an estimated population of 1,500,595, corresponding to an annual death rate of 22.39 in a thousand of population. The total infant mortality was 125; under one year of age, 94; from one to two years of age, 31. There were 39 still births, 18 males and 21 females. The temperatures were as a rule low, the minimum temperature being 22 degrees, recorded on the 10th; the maximum, 65 degrees, recorded on the 7th. The total precipitation was 0.39 inch.

BOSTON AND NEW ENGLAND

Personal.—After thirty-four years of service as visiting physician to the Boston Lying-in Hospital, Dr. William L. Richardson has resigned.

Bequest to Quincy, Mass., City Hospital.—By the will of Caroline Beale \$5,000 is given to this hospital to establish a permanent free bed in memory of the father and sister of the testatrix.

The Mortality of Connecticut.—According to the State Board of Health's *Monthly Bulletin* for December, 1906, the total number of deaths during the month was 1,480. This was 184 more than in November, and 162 more than in December of last year, and 205 more than the average number of deaths during December for the five years preceding. The death rate was 17.8 for the large towns, for the small towns 17.3, and for the whole State 17.6. The deaths reported from infectious diseases were 251, being 16.9 per cent. of the total mortality.

BALTIMORE AND THE SOUTH

Personal.—Dr. J. Thomas Kelley, of Washington, has been appointed clinical professor of gynecology and associate professor of gynecology and abdominal surgery to the Georgetown University Hospital.

The Richmond (Va.) Academy of Medicine and Surgery.—The subject for discussion at a meeting of this academy, held on Tuesday evening, January 22nd, was Movable Kidneys. Etiology and Pathology were discussed by Dr. R. C. Bryan, and Dr. L. C. Boshier discussed Symptoms, Diagnosis, and Treatment.

The Patrick Henry Medical Society held a meeting at Martinsville, Va., on Monday, January 14th. The following officers for the ensuing term were elected: President, Dr. B. F. Tatum, Hunter, Va.; vice-president, Dr. R. R.

Lee, Martinsville, Va.; secretary and treasurer, Dr. J. Russell Perkins, Spencer, Va. The next meeting of the society will be held at the home of Mrs. J. H. Lee, Martinsville, Va., April 5, 1905.

physicians, as members of the board of regular medical examiners: Dr. J. B. S. Holmes, of Lowndes county, and Dr. F. D. Patterson, of Randolph county, for a term of three years each, dating from January 7, 1906, and Dr. C. R. Anthony, of Spalding county, for a term of three years, dating from January 7, 1907. He also appointed provisions to the following physicians as members of the eclectic board of medical examiners: Dr. S. A. Brown, of Murray county, and Dr. J. V. White, of Butts county, for a term of three years each, dating from January 6, 1906, and Dr. Charles H. Field, of Cobb county, for a term of three years, dating from January 7, 1907. Dr. Field was appointed to succeed the retiring member of the board, Dr. Robinson, of Atlanta.

CHICAGO AND THE WEST.

The Medical Inspection of Schools in Cincinnati.—Cincinnati is undergoing the exciting complication of her first medical inspection of schools under the health office.

The Obstetrical Society of Cincinnati at its annual meeting elected the following officers for the coming year: President, Dr. William Gillespie; vice-president, Dr. M. A. Tate; recording secretary, Dr. J. H. Landis; corresponding secretary, Dr. E. S. McKee; treasurer, Dr. L. S. Colter.

Charitable Bequest.—Under the will of David L. Howell, of Hamilton, Ohio, the Mercy Hospital of Hamilton is to receive \$50,000, for the endowment of an obstetrical ward for the free use of the poor women of Hamilton. This bequest is effective at the death of the only sister of the testator.

Personal.—The medical profession of Cincinnati, as well as the laity, are indignant over the dismissal of Dr. C. R. Holmes, who was serving in an advisory capacity to the board of public service in regard to the building of the new city hospital. Dr. Holmes has devoted a great deal of time, money, and ability to the work and is thus summarily dismissed without as much as a thank you.

The Park Region District and County, Minnesota, Medical Society, which includes counties of Douglas, Grant, Otter Tail, and Wilken, held a meeting at Fergus Falls, on January 11, and elected officers for the ensuing year as follows: President, Dr. J. C. Serkland, Rothsay; first vice-president, Dr. P. G. Cowing, Ashby; second vice-president, Dr. J. L. Berthold, Perham; secretary, Dr. O. M. Haugan, of Fergus Falls. Papers were read by Dr. G. G. Eitel, of Minneapolis; Dr. W. L. Burnap, of Pelican Rapids; Dr. P. G. Cowing, of Ashby, and Dr. Armstrong, of Breckenridge.

Statement of Mortality of Chicago for the Week Ending January 12, 1907, compared with the preceding week, and with the corresponding week of 1906. Death rates computed on United States Census Bureau's figures of midyear populations—2,107,620 for 1907, 2,049,185 for 1906:

	1907.	1907.	1906
	Jan. 12	Jan. 12	Jan. 12
Total deaths, all causes	399	672	582
Annual death rate per 1,000	17.29	16.95	14.89
Sex			
Males	191	401	338
Females	208	272	244
Age			
Under 1 year	117	128	107
Between 1 and 4 years	64	62	38
Between 5 and 14 years	7	9	36
Between 15 and 64 years	75	234	282
Over 65 years	154	150	119
Leading causes of death			
Apoplexy	9	9	16
Bright's disease	1	14	14
Bronchitis	22	27	19
Consumption	1	62	63
Cancer	28	27	24
Cholera	12	16	9
Diphtheria	19	15	11
Heart diseases	54	47	40
Influenza	17	6	4
Intestinal disease	26	31	27
Measles	6		
Nervous diseases	34	25	16
Pneumonia	117	137	114
Scarlet fever	11	13	8
Suicide	5	1	14
Typhoid fever	1	6	9
Unknown cause than suicide	1	58	28
Whooping cough	8	6	1
Acute infectious diseases	100	120	120

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

1. *Some Blood Cultures in Children and Their Significance.* By R. C. ROTCH and HENRY CHAMBERLAIN LOW.
2. *A Physician's Creed, Past and Present, as to the Physiology of the Heart.* By WESLEY MILLS.
3. *The Limit of Proprietorship in Materia Medica.* By SALOMON SOUS COHEN.
4. *Results of Improved Technics in Otological Surgery.* By W. SOHIER BRYANT.
5. *Duties of Municipality and State in the Control of Tuberculosis.* By G. WALTER HAYNES.
6. *Duty of Railroads in Transportation of Tuberculous Passengers.* By JOHN R. HAYNES.
7. *The Value of the Sanatorium in the Crusade Against Tuberculosis.* By CLARENCE L. WHEATON.
8. *Aerotherapy and Solar Therapy in the Home Treatment of Tuberculosis.* By S. A. KNOFF.
9. *Résumé of the Complete Gastric Analyses in Sixty-one Cases of Indigestion.* By ALBERT WOLDERT.

1. **Some Blood Cultures in Children and Their Significance.**—Rotch and Low have been especially impressed with the value of blood cultures in children, especially in such cases where the histories were indefinite and misleading. In cases of this kind a blood culture is the only definite means by which it can be determined whether sepsis is or is not present, and the aetiological factor may be established. Their method consists in taking the blood from a vein in the elbow under absolute precaution against contamination; the culture is then immediately inoculated with the blood. The vein at the elbow was found to be the most convenient place. The authors had 680 children under the age of thirteen years, who were examined with regard to the possibility of easily obtaining sufficient blood for a culture, 39 per cent. were positive and 61 per cent. negative. In the first four years the positive cases were 21 per cent. and the negative 79 per cent. In the second four years the positive cases were 72 per cent. and the negative 28 per cent. And in the last group, which included the five years from 8 to 13, the positive cases were 86 per cent. and the negative 14 per cent. This seems to show that though the younger the child, the less likely will a blood culture be possible; yet in a large number it is possible, and it should be attempted when any important information may be obtained.

2. **A Physician's Creed, Past and Present, as to the Physiology of the Heart.**—Mills observes that, physiology having developed almost exclusively in connection with the study of medicine, researches up to about twenty-five years ago were carried out practically only on mammals and the frog. About this time, possibly owing to the influence of the doctrines of organic evolution, the science began to be more comparative, and in no region more than in cardiac physiology. During this new epoch researches were carried out not only on various animals, but on the turtles and tortoises, the frog, the fish, the lizard, the alligator, the snake, the newt, etc., together with many invertebrates. The result was that early in this epoch the view that the muscle of the heart was subject to its nerves in very much the same way as ordinary skeletal muscle, gave place to a doctrine in which muscle was as much exalted as nerve had previously been. Certain researches on the mammalian heart emphasized this dependence on an immediate and adequate blood supply. Other researches both on lower vertebrates and on mammals made it clear that the vagus existed chiefly to spare the heart as well as adapt its work to the needs of the rest of the body; while still others emphasized its importance as the trophic nerve of the heart as distin-

guished from the accelerator nerves which tended to exhaust its resources. Recent investigations have brought into prominence the importance of the nerve elements in certain, if not all, groups of animals, thus strengthening the neurogenic theory of the origin of the heart beat. During the greater part of the period covered by the last twenty years the question of an independent rhythmic power for each part of the heart has been kept prominent, and of late this, with differentiation of the various properties of heart muscle, has been made the foundation of attempts to apply modern cardiac physiology to cases of heart disorders, notably the various forms of arrhythmia. From his own experiments and his observations the author comes to the conclusion that the heart beat is not due in the higher vertebrates to any one factor exclusively; but that chemical, muscular, and nervous factors all enter into the result, and that the exact share each takes it is impossible to determine at the present time; but for practical purposes, as well as for theoretical explanations, whether the normal or diseased heart be considered, it is very important to bear in mind that the nervous system is behind all nutrition, that of the heart included.

4. **Results of Improved Technics in Otological Surgery.**—W. Sohier Bryant gives a summary of the means and measures which encourage earlier operations with the hope of prolongation of life, a shorter convalescence and lessened expectation of a secondary operation, while they make the outlook favorable for more efficient hearing and absence of deformity: 1. Complete operation. 2. Use of efficient bone instruments and curtailment of useless polishing of the bone. 3. Rational disposal of the soft parts. 4. Preservation of the sound conducting mechanism in selected radical cases. 5. Ligation of the jugular vein as high up as infection will allow before opening sinus and exenteration of the jugular bulb. 6. Management of brain abscess by the open method. 7. Blood clot, drained blood clot, and his modification of the drained blood clot in the simple mastoid operation. 8. Reik's "protective sheet." 9. Blood clot in cases of epidural abscesses. 10. Cosmetic results of the blood clot, drained blood clot, and evened up bone wound. 11. Lessened shock and jar. 12. Shortened convalescence. 13. Elimination of secondary operation. 14. Avoidance of accumulated cicatricial tissue to interfere with the sound conducting mechanism.

6. **Duty of Railroads in Transportation of Tuberculous Passengers.**—Haynes suggests that as a protection for the public, purchasers of railroad tickets when coughing should bring a certificate from the health department, stating the cause of cough. If the intended traveller is a consumptive a special car at a special train should be provided. Such cars should be specially constructed and furnished. Disinfections and cleansing must be thoroughly carried out. These suggestions have been submitted to the passenger agents of two large transcontinental lines and they declared them practicable and feasible, provided the various State health authorities or boards place tuberculosis on the list of contagious diseases. This would give the railroads the legal power to refuse tickets to any one suspected of having tuberculosis or any other contagious disease unless authorized by the health officer of the community where the ticket is sold.

9. **Resume of the Complete Gastric Analyses in Sixty-one Consecutive Cases of Indigestion.**—Woldert remarks that hydrochloric acid secreted by the stomach is only one of the many factors which should be considered in order to treat indigestion correctly. In his series of sixty-one cases he found the following conditions present with reference to hydrochloric acid: This acid was normal in 16.66 per cent., consequently the amount of hydrochloric acid as the evil factor was not present, but the real cause which did harm lay fur-

ther back than the abnormal secretion of this acid. In 57 per cent. of the entire series he found that there was an excess (above 0.073 per cent.) of hydrochloric acid, and in such cases, of course, the administration of this drug could only have added additional insult to the existing injury. The hydrochloric acid was below normal (0.04 per cent.) in 11 per cent. of the cases, while in 14 per cent. of the series of cases the hydrochloric acid was totally absent. In those patients, who, in the absence of malignant disease, were found suffering from an entire absence of hydrochloric acid, the administration of this acid has had no effect in restoring the hydrochloric acid to the normal. Another class of cases is that in which the free hydrochloric acid will be found totally absent (temporarily), only to return again under proper treatment. Such condition is evidently due to some form of obscure neurosis not yet determined. These cases will often be found to be puzzling to the physician, and for many days, or perhaps weeks, one will be undecided as to whether gastric cancer is present. In his 61 cases of indigestion the free hydrochloric acid was found to be totally absent nine times, or 14 per cent. of the entire series. He has been able to make a diagnosis of gastric cancer in but one instance of this series, and he wishes to give warning that one should not jump to the conclusion that cancer of the stomach is present, merely because the free hydrochloric acid is totally absent.

MEDICAL RECORD.

January 1, 1907.

1. The Diagnosis and Surgical Treatment of Gastric and Duodenal Ulcer and Their Complications,

By A. A. BERG.

2. "Rheumatism" and Its Treatment, By F. J. WALTER.

3. Tuberculosis in the Consumptive, By J. MOORE BLEYER.

4. A Medical Study of a Morphinomaniac.

By T. D. CROTHERS.

5. Public Control of Disease Through a National Department of Health.

By HAROLD W. WRIGHT.

2. "Rheumatism" and Its Treatment.—Walter concludes his article on rheumatism in saying that the various infections will account for every form of so called "rheumatism" except muscular, and that is an intoxication. This intoxication accompanies or precedes most articular and some nerve infections. The term "rheumatism" is a misnomer, but must be retained for a time, until real facts are appreciated by the profession and laity. Better diagnosis will bring intelligent treatment. Intelligent treatment means the use of combined methods and a thorough working knowledge of the case. This should consist of prophylaxis, better understanding between patient and physician, with attention in the main to social conditions, dietetics, exercise or rest, as indicated, elimination by proper baths, fresh air, the right cooperative mental attitude, and in some cases climate. Autointoxication with faulty elimination is directly responsible for these conditions. That it is necessary for physicians to make a greater study of the toxic effects of leukomains and to lay more on the findings in the urine of the products of indigestion. An examination of the urine is important in every case for these products of metabolism as well as albumin, casts, and sugar. Heredity has no effect except as establishing social conditions followed by the family. The importance of baths and the precedence of hot mud packs over other baths for equalizing the circulation, stimulation of glandular activity, and elimination. The avoidance of a sedentary life and also of great muscular fatigue, the latter being a cause of muscle pains in children and workmen. Alkaline waters and drugs hold a large place as anti-acids and antiseptics to the intestines, though they are greatly abused. Hot baths must not be given in dilated hearts, high blood pressure, arteriosclerosis, tuberculosis, and great emaciation, though they are in-

dicated in autointoxication without such complications.

3. Prognosis in the Consumptive.—Bleyer gives the following conditions in which we may confidently hope for a successful result in tuberculosis, especially when they are all present at the same time: 1. The disease in the stage preceding any evidence of a lesion, or when the tuberculous lesion is very small and isolated at the apex of one lung. 2. The progress of the disease has been slow, so that there have been slight evidences of failure of the general system during many months, and with no evidence of a recently accelerated rate. 3. The original state of the constitution was moderately good. 4. The age of the patient is from about twenty years to middle life. 5. The existing state of the health is moderately good, so that, by careful regulation, a due amount of nitrogenous food and of exercise may be taken with comfort. 6. The rates of pulsation and respiration do not vary materially from those in health. 7. Cheerful willingness to obey the prescribed directions, and such pecuniary and domestic circumstances that the whole arrangement necessary to the treatment of the case may be carried out. 8. Due freedom from anxiety, and removal from whatever conditions are unfavorable to the restoration of health. 9. Continuous breathing of fresh air, with all hygienic accompaniments, etc. The following are unfavorable conditions in the general system which affect the prognosis: 1. When the powers of the general system are greatly enfeebled. 2. When the capability of reaction is found by experience to be very small. 3. When the appetite, digestion, or assimilation is very defective, and particularly when certain kinds of fats, milk, and other kinds of animal food cannot be sufficiently taken, even after careful training. 4. When food, clothing, or proper shelter is deficient in any marked degree. 5. When there is oppressing anxiety. 6. When such a patient cannot be removed from injurious conditions, such as foul or heated air, exposure to cold, and sedentary occupations. 7. When self abuse or other degenerate practice in either sex is or has been largely practised, or when there are confirmed habits of excessive indulgence in alcoholic liquors or tobacco. 8. When the system is highly sensitive, so that the whole organization is in a state of perpetual unrest, or when it is so deficient in nervous sensibility and activity that it does not respond readily to the ordinary stimuli. 9. When the patient is younger or older than the limits mentioned. 10. When from any cause the patient will not, or cannot obtain change of climate, providing the case is a typical one for that special treatment, and will not, or cannot, steadily pursue the prescribed plan of treatment.

5. Public Control of Disease Through a National Department of Health.—Wright wishes to add a few remarks to an essay of Professor J. Pease Norton on this subject. He comes to the conclusion that present methods of practice hinder the physicians from pursuing their vocation in the spirit appropriate to it. There should be a national bureau of health, having subordinate bureaus in every community of about a thousand inhabitants. At the head of these bureaus are physicians who have proved their ability to deal with public health problems; men who are wholly devoted to the greatest good of humanity by the prevention of disease. Those of the central bureau have the right to select their subordinates from successful civil service examinees, according to the standing and personal qualifications of the latter. All physicians are therefore licensed only by the central bureau and are in the employ of the same. Furthermore, all the hospitals should be under the control of the national department and one hospital is supplied for each community or district, containing a certain number of peo-

bottle making distended, and conclude that such work or exercise is more subject to be a strain than those employed in other work.

7 and 8. Achondroplasia.—Rankin, Mackay, Lunn, and Clark report cases of achondroplasia, a form of dwarfism, concerning the etiology of which nothing is known. It resembles both rickets and cretinism, but is readily distinguished from both. Its prominent symptoms are: A congenital origin; an abnormally large vault to the cranium; depressing of the root of the nose; prognathus; arrested development of the long bones of the extremities with exaggeration of their normal curves; normal development of the trunk; beaded ribs and enlargement of the ends of the long bones from diaphysial and epiphysial changes; decentralization of the midpoint of the body which is invariably above the umbilicus; characteristic wheel spoke appearance of the hands (*main en trident*); excess of adipose tissue; protuberant abdomen; lordosis; smooth pliable skin with an abundance of glossy hair; normal mental condition; and a tendency to other congenital malformations, especially high arched palate and inguinal hernia.—Porter reports three cases of achondroplasia, in a father and two adult sons; another son, who was drowned, had the disease. The father stated positively that his brother and his father had suffered from the same affection. So that the disease had appeared in six members of a family constituting three generations, and had appeared only in the male sex. In the three generations no females were produced. Consanguinity of parents, or syphilis, played no part. The diagnosis in the adult is easier than in children, and less important, as no treatment is called for.

LANCET.

January 5, 1907

1. Removal of the Gallbladder (Cholecystectomy),
By J. BLAND-SUTTON.
2. The Pathology of the Liver in Cardiac Disease and Its
Clinical Lesions, By R. N. SALAMAN.
3. Intraperitoneal Bleeding From an Uterine Fibroid,
with Acute Distension of the Abdomen, Abdominal
Section; Removal of the Fibroid; Recovery.
By W. B. CLARK.
4. Hyperplastic Tuberculous Pericollitis, By F. S. KIDD.
5. The Localization of Potassium in Malignant Tumors,
By R. CATTLEY.
6. Some New Methods for the Determination of Uric
Acid, Including a Simple Clinical Process,
By A. F. DIMMOCK and F. W. BRANSON.
7. Bronchiectasis in Childhood, with Some Observations
on the Condition Known as Honeycomb Lung,
By C. R. BOX.
8. Some Observations on the Treatment of Epilepsy in the
Insane with Strontium Bromide, By J. M. BENNION.
9. An Outbreak of Typhoid Fever Due to Eating Clams
From a Polluted Source, By J. F. BEALE.
10. Absence of the Uterus in Three Sisters and in Two
Cousins, By L. N. BOSTON.
11. A Short Review of the Results Achieved by the Japa-
nese Army Medical Service During the Russo-Japa-
nese Campaign of 1904-05, By Professor KOIKE.

2. The Liver in Heart Disease.—Salaman, from a study of the pathology of the liver in cardiac disease, deduces the following points: 1. Under conditions of cardiac stress the liver will draw off a large volume of blood from the right auricle. 2. After a time certain changes will take place leading to fibrosis which very materially affects the distensibility of the liver. 3. The fibrotic process, by increasing the force of the liver's recoil, prevents the use of the latter as a reservoir in which blood may accumulate. 4. In complete compensation there is no engorgement of the liver and no back pressure. 5. Whilst the liver may be looked upon as a sponge-like safety valve to the heart, continued use of this safety valve action leads to its own abolition. The liver is directly or indirectly the cause of three kinds of pain: 1. Referred superficial tenderness

consequent upon extreme distention of the liver. 2. Tenderness of the liver itself on palpation. 3. The liver itself is painless, but the whole abdominal surface is tender on deep pressure, due to distention from ascites and peritoneal irritation. With the onset of cardiac distress the liver comes to the rescue and enlarges up to its physiological limits without giving any signs; then as enlargement exceeds this limit referred pain appears. When the blood drawn off in the now fully distended liver is insufficient to relieve the heart failure the blood is thrown, as it were, further back in the inferior vena cava, and œdema of the feet is the natural consequence. If the heart is relieved and the liver allowed to disgorge some of its blood and to return to the limits of its physiological safety valve action, the œdema vanishes.

4. Hyperplastic Tuberculous Pericollitis.—Kidd calls attention to the existence of a peculiar form of tuberculosis, affecting segments of the intestinal tube, and characterized by thickening of the wall of the intestine. This thickening consists of firm connective tissue and fat, affects the submucous, muscular, and subserous coats of the bowel, and seldom shows either tubercles or caseation. The ileocecal region is the most common site of the disease, but it may be found at times in any part of the large bowel, especially the sigmoid flexure and rectum, and less commonly in the ileum. Any disease which lowers the general resistance of the organism may predispose to the condition. The morbid anatomy points to the presence in the gut wall of some mild and slowly acting poison which stimulates the local connective tissue, fat, and endothelial cells to multiplication—a poison leading to hyperplasia rather than to cell destruction. The disease may be latent and only found at an exploratory cœliotomy. At other times there are symptoms of chronic intestinal obstruction with acute exacerbations, and with or without palpable tumor. Appendicitis may be suggested, or there may be obscure symptoms of colic with a sudden attack of purulent peritonitis, localized, or diffuse. The tumor itself may simulate malignant growth, actinomycosis, excessive exudate from appendicitis, or fecal tumor. Apart from excision, or after excision, the treatment follows that usually adopted for tuberculous lesions, perhaps combined with injections of tuberculin. The existence of this condition should be kept in mind by those who operate on the large gut, so that the patient may reap the benefit of a correct diagnosis.

7. Bronchiectasis in Childhood.—Box tells us that the lungs of children and sometimes of adults, occasionally present a peculiar cystic appearance well designated by the term "honeycomb lung." This is a condition of bronchiectasis following usually bronchopneumonia. The condition may be bilateral or limited to a part of one lung; the cavities are multiple, more or less spherical, and generally larger towards the periphery, where they may project as small blisters under the pleura. They vary in size up to the diameter of a pea, and may be of three different kinds: some are bronchiolectases, some are atriectases combined with emphysema, and some are formed by necrosis of lung tissue. Pleural adhesion plays no part in the initiation of the condition. The cardinal symptoms in advanced cases are cough, dyspnoea, and copious expectoration. The fingers are usually clubbed. The cough is paroxysmal, and is often induced by change in position on the part of the patient. As a rule, it is present winter and summer alike. The expectoration consists of tenacious, greenish, airless pus, which rarely becomes fetid. Tubercle bacilli are absent, and fever may or may not exist. The general nutrition is usually well maintained and the facial aspect somewhat congested. The commonest complication of bronchiectasis in childhood is

recurrent pulmonary inflammation. Sepsis with fœtid sputum is uncommon. In the advanced stages the condition is frequently confounded with empyema and pulmonary tuberculosis. As regards treatment, the routine procedure should consist in regularly emptying the cavities as far as possible, and the administration of such drugs as are excreted by the lung and presumably exert an antiseptic influence on the bronchial tubes and their contents. The cavities are best emptied by inversion, the patients leaning over the side of the bed, with the hands resting on the floor. The drugs yielding the best results are garlic, creosote, turpentine, and cod liver oil.

8. Strontium Bromide in Epilepsy.—Bennion has used strontium bromide in the treatment of epilepsy in the insane, and arrives at the following conclusions: 1. Strontium bromide, as a rule, acts better in controlling the number and severity of the fits than the mixed bromides of sodium and potassium. 2. Strontium bromide rarely causes depression. 3. Rashes were absent in all his cases. 4. It acted best and most consistently in the female patients, in all of whom the action of this drug, as regards controlling the fits, was far superior to that of the mixed bromides. 5. The maniacal symptoms of the male patients while taking strontium bromide were not influenced to any perceptible degree. 6. The mental condition of the female patients seemed to improve. 7. Considering the severity of the type of epilepsy observed, it is reasonable to suppose that with a milder form of epilepsy than is usually met with in an asylum an even greater benefit would be derived from the administration of this drug. 8. All those having epileptics under their care should give the bromide of strontium a fair trial.

LA PRESSE MEDICALE.

December 29, 1906.

1. Pernicious Anæmia of Syphilitic Origin, By MARCEL LABBE.
2. Antituberculous Vaccination, By STAMEN GRIGOROFF.
3. A New Way to Perform Colpoperineorrhaphy, By J. DUVERGEY.

1. Pernicious Anæmia of Syphilitic Origin.—Labbe quotes from literature, and reports a case which he met with in a woman, seventy-three years old, which in his opinion establishes the existence of a pernicious anæmia of syphilitic origin. He is inclined to ascribe the anæmia to the changes wrought in the bones and their medullæ.

2. Antituberculous Vaccination.—Grigoroff has produced a vaccine from the bodies of tubercle bacilli which he has found experimentally to immunize animals against tuberculosis.

3. Colpoperineorrhaphy.—Duvergey describes, with the assistance of twelve illustrations, a modification of this operation, which seems to him preferable to the method in which it is usually performed.

BERLINER KLINISCHE WOCHENSCHRIFT.

December 13, 1906.

1. Acokanthera Schimperii as a Remedy in Cardiac Disease, By F. LEWIN and E. STADELMANN.
2. Acquired Forms of Chronic Acholuric Icterus with Splenomegaly, By H. STRAUSS.
3. Concerning a Vesical Calculus with Waxy Nucleus, Clinical History and Contribution to the Question of the Diagnostic Application of the X Rays in Cases of Urinary Concretions, By A. ROTHCHILD.
4. Concerning Primary Cancer of the Appendix Together with Remarks Concerning Revision of the Appendix in Every Laparotomy (Concluded), By TH. LANDAU.
5. Carbonic Acid Gas and Illuminating Gas, By TH. A. MAASS.

1. Acokanthera Schimperii as a Remedy in Heart Diseases.—Lewin deals first with the history and chemistry of the varieties of acokanthera and of the glu-

coside ouabain, which as he states are of no value in its medical application. He then passes to the biological action and finds that this drug is the most powerful cardiac poison known. It strengthens the systole, increases the work of the heart, and thereby causes greater fullness of the arteries and an increase of the blood pressure. Stadelmann finds clinically that the pulse seems to be uninfluenced in many cases, particularly in cases with aortic insufficiency, while in other patients, particularly those with mitral insufficiency, the pulse becomes stronger and more regular, but that this is by no means the rule and that often, even in cases in which the drug would seem to be indicated, the pulse remains unimproved. The quantity of urine is increased, and in this respect the similarity of the action of this drug to that of digitalis cannot be mistaken. As the urinary secretion is increased the general condition becomes improved, the dyspnœa, cyanosis, catarrh from engorgement, tumefaction of the liver, transudates, and œdema disappear. No unpleasant after effects were noticed, except an occasional vomiting of the medicine.

2. Acquired Forms of Chronic Acholuric Icterus with Splenomegaly.—Strauss reports two cases, one that of a man, twenty-seven years of age, who had been jaundiced for twenty-three years; the other a woman, twenty-five years old, who had been jaundiced for an uncertain number of years. In both cases the stools were always brown and the urine yellowish or reddish. The objective conditions common to each were jaundice, great enlargement of the spleen, very slight enlargement of the liver, brown stools, absence of bilirubin, but presence of urobilin in the urine, and a tendency to disturbances in the intestinal canal.

3. Vesical Calculus with Waxy Nucleus.—Rothschild describes a case of this nature, and considers the x ray pictures of great value in the diagnosis of such conditions.

4. Primary Cancer of the Appendix.—Landau says that the clinical picture of carcinoma of the appendix is identical with that of appendicitis, and that when recent and uncomplicated it calls forth no symptoms which may cause its presence to be suspected. He also urges that in every laparotomy the condition of the appendix should be inquired into, and whenever changes can be seen or felt, or when the history indicates that it has previously been inflamed, it should be removed.

5. Carbon Dioxide and Illuminating Gas.—Maass describes the symptoms of poisoning by each of these gases, and presents the following differentiation. In carbon dioxide poisoning the characteristic symptoms are: 1. Coma in varying degrees. 2. Continuance of dyspnœa from the beginning of the experiment to the commencement of asphyxia. 3. Rarity of severe convulsions and tetanus, frequency of attacks of convulsions lasting sometimes for minutes. 4. Gradual onset of paralysis of the lungs and asphyxia. 5. Appearance of the carbon dioxide spectrum. 6. Blood in general cherry red, right heart overfilled with black blood. In poisoning with illuminating gas the symptoms given are: 1. Muscular weakness with transient paralyses of the extremities, together with only a slight comatous numbness. 2. The almost constant occurrence of general convulsions. 3. The absence of respiratory dyspnœa and the presence of spasmodic respiratory movements with expiration. 4. Overfilling of almost all organs, especially the brain and the meninges of the brain and spinal cord, with red blood which has undergone toxic changes, and circumscribed alveolar emphysema of the lungs without œdema.

December 17, 1906.

1. To Ernst von Bergmann on His Seventieth Birthday, December 16, 1906.
2. Goitre and Its Treatment, By O. HILDEBRAND.

3. A Tumor of the Occipital Lobe of the Brain Cured by Operation. By H. OPPENHEIM and F. KRAUSE.
4. Diagnostic Puncture of the Brain. By M. ASCOLI.
5. A Short Contribution to Brain Surgery. By E. SENGER.
6. An Enormous Renal Calculus Removed by Operation. By JOHNSON.
7. Casuistic Contribution to the Surgical Treatment of Abdominal Contusions. By A. STERN and TH. E. DOLAN.
8. Morphine-Scopolamine Narcosis. By B. KORFF.
9. Modification of the Beckmann-Schäfer Apparatus to Control the Blood for Diagnostic Purposes. By F. EICHLER.
10. Hemiplegia. By LESSING.
11. Wundheilung von Bergmann. By JOACHIMSHAL.

2. **Goitre and Its Treatment.**—Hildebrand describes the clinical picture of goitre, its treatment, operative and nonoperative, the not infrequent appearance of malignant forms of goitre in the shape of carcinoma or sarcoma, the prognosis of which is extremely bad, and concludes that as one does not know where and when a malignant growth may develop in a benign goitre every benign goitre which is giving trouble should be operated on in the absence of a distinct contraindication. In young people iodine treatment is certainly indicated, but in adults operative measures are preferable whenever real trouble is being caused and the goitre is growing, according to the observations of the patient.

3. **A Tumor of the Occipital Lobe of the Brain.**—In the report of this case Oppenheim furnishes the clinical history and Krause the description of the operation. The patient was a man, thirty-five years of age, who presented a complex of symptoms which indicated the presence of a tumor in the occipital region. A square section of bone was resected from the left side of the occipital bone and an egg shaped tumor measuring 32 by 55 by 58 mm. was removed from the occipital lobe. The tumor proved histologically to be a spindle celled sarcoma. The patient recovered.

4. **Diagnostic Puncture of the Brain.**—Ascoli reports six cases in which the brain was punctured for diagnostic purposes. A certain amount of good information may be obtained at times in this manner, as is evidenced by one case in which the diagnosis made after the brain puncture was "cystic tumor of the right cerebellum, probably of glaucomatous nature," and the autopsy revealed a "gliosarcoma of the right cerebellum containing a smooth walled cyst as large as a walnut." Otherwise the results obtained do not seem to the reviewer to have been eminently satisfactory, because the diagnostic points cleared up were not of great practical importance.

6. **Enormous Renal Calculus.**—Johnsen reports a case in which he removed by laparotomy a renal calculus, which weighed 339 grammes, was 14.1 cm. long, 33.5 cm. around its greatest longitudinal circumference, and 28.5 cm. around its greatest breadth.

7. **Surgical Treatment of Abdominal Contusions.**—Stern and Dolan report two cases of traumatic rupture of the intestine without injury to the abdominal wall. Laparotomy was performed in each case. One patient recovered.

8. **Morphine-Scopolamine Narcosis.**—Korff again urges the use of the mixture of morphine and scopolamine which he is accustomed to use, which consists of scopolamine hydrobromide 0.0012 and morphine muriate 0.03, and suggests as a name for this mixture "scopomorphine."

ZENTRALBLATT FUER CHIRURGIE

January 5, 1907

1. Simplification of Total Resection of Thorax for Empyema. By C. BAYER.
1. **Simplified Method of Thoracotomy for Empyema.**—Bayer speaks of the dangers—especially of hemorrhage and shock—in operating upon long neglected

cases of empyema. His procedure is as follows: He makes his incision along a line which gives practically no bleeding, which penetrates only the skin and connective tissue, goes between the muscles and cuts only an unimportant one and permits rapid access to all the ribs, all circumstances of importance to patients in bad condition. An incision starting about two fingers' breadth behind the anterior axillary line crosses this imaginary line close to the anterior insertions of serratus anticus major from the third to the tenth ribs. The incision avoids all large bloodvessels and with the exception of cutting a few fibres of external oblique muscle, no muscles are cut. He removes the necessary ribs subperiosteally and opens the fistulous portion of the pleura with the actual cautery. If it should be necessary to remove the second rib also, the arm is elevated, the pectoral muscles are strongly retracted forwards, and the skin incision slightly lengthened. The operation, according to the author, can be very rapidly and very easily performed, and is very useful, as well, in providing suitable drainage.

ZENTRALBLATT FUER GYNAEKOLOGIE

January 5, 1907

1. Entrance of a Piece of Gauze, Left in the Abdomen at Laparotomy, Into the Bladder. By W. STÄCKEL.
2. Encircling of the Body by the Umbilical Cord and Its Disadvantages After the Birth of the Head. By E. HOLZBACH.
3. A Case of Decapsulation of the Kidney in a Case of Puerperal Eclampsia. By O. POLANO.
1. **Gauze in the Bladder.**—Stäckel narrates an interesting case of a young woman who presented herself with a vesicoabdominal fistula, some months after the performance of a very difficult laparotomy for diseased and adherent appendages, during which the bladder had been injured and repaired. Ten days after the operation, the patient passed into other hands and the gauze overlying the vesical wound which had been left in for drainage, was not removed. Stäckel found by cystoscopic examination a polypoid substance in the bladder covered by much mucus and many urinary crystals. No cystitis was present. With a small forceps he removed the mass easily through the urethra, which proved to be the forgotten gauze. He points out two phases of the case which make it interesting. One is the fact that it is the first case of its kind which had been subjected to cystoscopy; the other lies in the presence of a foreign body in the bladder for a long time without provoking cystitis, a proof that the bladder wall must itself be injured to subject itself to inflammation, independent of the introduction of infectious organisms. Stäckel points out that the exit of a foreign body left in the abdomen accidentally by way of the bladder is extremely rare.

3. **Renal Decapsulation in Eclampsia.**—Polano describes the case of a thirty-eight year old multipara who developed eclampsia thirteen hours post partum. The patient was treated according to the usual routine methods, but no improvement resulted. When it was evident that she was getting worse in all respects—pulse, quantity of urine, etc.—it was decided, on the eleventh day post partum, to perform decapsulation of both kidneys. This was accomplished without difficulty, and the patient's condition at once improved. The pulse dropped to 100, and was of better quality, and the quantity of urine increased decidedly. The patient died nineteen hours after the operation of pulmonary oedema. Polano expresses himself as satisfied with the result of the operation, the patient's death not being due to the procedure; but he feels that he waited too long before resorting to it. He speaks in favor of timely decapsulation of the kidneys in cases of this character.

ZENTRALBLATT FUER INNERE MEDIZIN.

Jahrgang 35, 1907.

1. Examination of the Heart in the Left Lateral Position,
By L. BRAUN.
2. Atropine and Morphine as Antispasmodic Injections of
the Cervical Sympathetic,
By K. FANTZSCHER.

2. **Attempted Abortion with Fehling's Solution.**—The subject reports the case of a young woman, a hospital nurse, pregnant two months, who attempted to induce abortion by injecting into the uterus one gramme of Fehling's solution. She reported her act within half an hour. The symptoms she then presented were extreme anxiety, coolness of the skin, and decided slowness of the pulse. There was no bleeding. The following day the pulse had become improved, there was considerable vomiting and the urine was extremely dark. The urine gradually became bloody, and at the end of five days showed many casts. All the toxic symptoms gradually disappeared, but no abortion took place. The author is in doubt as to whether the pregnancy had been interrupted. According to his statement, this is the first recorded instance of a human being poisoned by copper introduced hypodermically or into the uterus—methods which may be regarded as identical. The patient received 0.341 of a gramme of sulphate of copper, the lethal dose of which is from ten to twenty grammes. It is known, however, that 0.6 of a gramme by mouth can give rise to symptoms of poisoning.

THE ARCHIVES OF PHYSIOLOGICAL THERAPY.

December, 1906.

1. Radiographic Measurement of the Diameters of the Female Pelvis and New Technique in Radiographing Vesical Calculi,
By GEORGE E. PFAHLER.
2. A New Direct-Reading X Ray Meter,
By GEORGE C. JOHNSTON.
3. Note Relative to the Estimation of Röntgen Dosage,
By HENRY G. PIFFARD.
4. The Tube in Röntgen Therapy,
By ENNION G. WILLIAMS.
5. Further Experimental Research Concerning the Direct, Indirect, and Secondary Rays,
By LEWIS GREGORY COLE.
6. The Teaching of Röntgenology in Medical Colleges,
By VERNON J. WILLEY.

2. **A New Direct-Reading X Ray Meter.**—Johnston states that in his invention the fluorescence induced or produced upon a tungstate of calcium or other screen is employed as indicating the quantity of the x rays emitted. The fluorescent screen is placed in a light tight box or container. Facing the fluorescent screen is placed a selenium cell, which cell, as is well known, has the property of changing its ohmic resistance to the passage of electrical currents with relation to the presence or absence of light waves. Such a cell when kept in total darkness protected from light of all kinds, may have a resistance of several hundred ohms, yet upon permitting light, natural or artificial, to strike upon the cell, its ohmic resistance falls almost instantly to a great degree and the variation in ohmic resistance thus produced bears a direct relation to the intensity of the light. If, therefore, there be placed in series with such a cell as described, a galvanometer or milliamperemeter, a source of electrical current such as an ordinary so called dry battery, a variable rheostat providing a means of introducing more or less ohmic resistance into the circuit, and the rheostat, the measuring instrument, and the selenium cell be balanced, a point will be found at which the ohmic resistance of the rheostat, the connecting wires, the selenium cell, and the measuring instrument will exactly balance the electromotive force of the battery cell and, no current passing, the measuring instrument (galvanometer or milliamperemeter) will stand at zero. If now, however, the container having within it the screen and the selenium cell be placed in the path of the x ray pro-

ceeding from an excited x ray tube, the screen will become luminous in proportion to its distance from the source of the rays and the quantity of rays striking it, the container will be illuminated, the selenium cell under the influence of this light will change its ohmic resistance, in proportion to the light, a current will flow proportionate to the change in ohmic resistance of the selenium cell, and the current flow will be measured and indicated on the dial of the galvanometer or other instrument employed for the purpose of making this electrical measurement, and the reading of this instrument will increase or diminish directly as the variation in intensity of the fluorescence upon the screen, which fluorescence is dependent upon the activity of the x ray tube in emitting those rays which have the power of inducing such fluorescence upon the screen so constructed.

3. **Note Relative to the Estimation of Roentgen Dosage.**—Piffard remarks that it occurred to him to measure the intensity of the electrostatic field surrounding a Crookes tube during an exposure, thinking that it might possibly be a convenient means of estimating the energy which was being given off. To do this, he took a brass ball about one and one quarter inches in diameter and supported it about four inches from the wall of the tube, and just within the circle of rays issuing from the anterior hemisphere. The ball was then connected by a conducting cord about eight feet long to the charging device of an electroscope. As soon as the current passed through the tube, the aluminum needle or foil indicated the charge, and the angle was easily read off on the scale. For this purpose, he found both Braun's electroscope, which is graduated in volts, or his own, which is graduated in degrees of an arc, very convenient, and he observed that the angle varied directly with the current passing through the tube. It further showed whether the tube was running steadily or not, and also indicated any notable change in the vacuum. He has not as yet been able to give the matter a thorough therapeutical test, in so much as he does not frequently use x rays, and he presents the matter now as a preliminary note, in order that those who use the rays more frequently may ascertain its practical value in this connection.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting of December 17, 1906.

The President, Dr. T. E. SALTERTHWAITE, in the chair.

A Safety Lock on the Obstetric Forceps for the Prevention of Dangerous Compression of the Fœtal Head.

—This modification of the forceps was devised by Dr. A. ERNEST GALLANT, who stated that Edmund Chapman was the first Englishman to report on the use of the Chamberlen forceps, the novelty and excellence of which consisted in the fact that the two blades were separable. This was in 1733, and three years afterward Chapman published a description of his own improved forceps, the two portions of which were united together by means of what had since become known as the English lock. Dr. Gallant's contention was that the great danger inherent in this form of lock lay in the fact that after the instrument was locked, and pressure applied, the lateral pressure exerted by the uterine and vaginal walls on the convex surface of the blades forced them together to a degree which was highly dangerous to the fœtal head, especially at those portions of the latter within the grasp of the tips of the blades, and thus frequently caused depression, fracture, or intracranial hæmorrhage. Of this undue pressure, which had hith-

erto been, only liable for the accidental derangement. He then presented two devices for avoiding this otherwise uncontrollable pressure.

Immediate Repair of the Soft Parts After Labor.—Dr. HENRY C. COE read this paper. There was little room for discussion or opinion among obstetricians, he said, as to the advisability of repairing lesions of the soft parts after labor; but writers by no means agreed as to the best time at which the operation should be performed, and they did not all adopt the same technique. He did not purpose to consider rupture of the uterus, because he was inclined to divide these injuries into two classes: one in which abdominal section was indicated (usually followed by supravaginal amputation), and the other in which simple drainage offered the best prospect of recovery. His own observation had led him to conclude that unless the radical operation was clearly indicated, laparotomy and suture of moderate tears were seldom necessary or advisable.

Immediate repair of lacerations of the cervix was still a mooted question. In the presence of arterial hæmorrhage there could be no doubt that it should be controlled at once by the passage of deep sutures. He did not believe it was necessary to repair every lacerated cervix at the time, but it was now his custom in every case of difficult delivery (high forceps or extraction) to be prepared to suture immediately the extensive bilateral tear, which was to be expected. With the present aseptic technique, primary union was to be looked for, and drainage from the uterus was not interfered with, if the operation was properly performed. This was very simple. A large, half curved, blunt pointed needle, threaded with No. 2 or 3 chromic gut, was passed through both lips of the torn cervix at once, each being grasped with a bullet forceps. By elevating the anterior vaginal wall with a large retractor or Sims's speculum the parts could be perfectly exposed. The speaker preferred to operate as soon as the placenta was expelled, instead of putting the patient to the annoyance and nervous shock of a second anaesthesia at some subsequent time. Of course there are cases in which her condition would render it unadvisable to add even a few minutes to the anaesthesia. Lack of assistance, bad light, and other complications incident to private practice might also prevent the accoucheur from repairing a torn cervix, except to actually save life. The class of cases in which extensive tears were apt to occur were those in which no one should attempt a difficult obstetric operation without the assistance of a colleague. As to ultimate results, his experience had almost invariably been gratifying, as shown by the normal involution of the uterus and the condition of the cervix months and years afterward. There was, moreover, a certain satisfaction, both to the patient and to the obstetrician, in feeling that no future plastic work was necessary.

With regard to lacerations of the vagina, he wished to emphasize the fact that often their extent was not fully realized until the parts were fully exposed with a speculum and retractor. This applied especially to occipitoposterior cases in which the head was rotated with the forceps. Not only were deep and ugly rents produced under the most skillful management, but too often they were only partially sutured, with the result that healing by granulation took place, and extensive cicatrices were left. It was important not only to expose the entire length of the tear, but also to keep the field of operation clear by placing a tampon against the cervix. A running suture of chromic gut, passed deep beneath the torn surfaces (extreme care being taken not to open the rectum), controlled the hæmorrhage and often resulted in perfect union. Not only the posterior, but also the anterior wall should be ex-

amined, for many lesions of the latter were overlooked. Hirst was right in holding that many cases of cystocele could be prevented by recognition and immediate repair of injuries to the anterior vaginal wall. Dr. Coe went on to say that he had nothing to add to what he had written in his paper on Immediate Repair of Injuries of the Pelvic Floor, published in the *Transactions of the American Medical Association*, 1905.

xxix, and would only reiterate his opinion that it was best to do the right thing thoroughly, having ever in mind that the object of the operation was not merely to suture raw surfaces, but to go deeper and pick up the torn fascia and muscles outside the vaginal tube. It was now a truism that the submucous lacerations of both the anterior and posterior walls were of far greater importance than the visible superficial tears, and, even in the absence of the latter, the careful accoucheur now sought to prevent subsequent cystocele, proctocele, or prolapsus by performing at once the operations which it had been the practice to do months later to correct these conditions; provided always that the condition of the patient was such as to warrant fifteen minutes' additional work after the completion of delivery.

It was too often the practice to repair a torn sphincter after a difficult labor, in which there had been much bruising of the soft parts, in a hurried and perfunctory manner; but such imperfect technique simply invited failure, and it was better not to attempt to unite the torn sphincter and rectal wall at all until a month or six weeks later. For his own part, however, he expected to secure proper union, and he held himself alone to blame if it did not occur, provided the nurse attended carefully to the patient's bowels. A nonabsorbable suture was indispensable in all immediate operations. It was the speaker's practice to use silkworm gut to hold the torn ends of the sphincter in apposition, and to reinforce this with a buried suture of chromic gut or kangaroo tendon. Forcep injuries to the vestibule should not be overlooked, as they so often were. Profuse venous hæmorrhage might result, but it was readily controlled by sutures.

Dr. CHARLES JEWETT said that in injuries to the pelvic floor he had often operated as late as a week after, with the most satisfactory results. There were certain advantages in the later operation, for immediately after labor everything was distorted, and by waiting a little this state of affairs would have passed away, we could have a better light, and the patient would be in better condition. With much of what Dr. Coe had said he was wholly in accord.

Dr. F. FOERSTER said that as to the matter of immediate operation it was necessary to consider not only the condition of the patient, but her surroundings and the conveniences for operating. The latter were bad in tenement house practice. In regard to lacerations of the cervix, many which seemed very serious, immediately after their occurrence, often healed naturally.

Dr. F. R. OASTLER thought that from the large number of women met with who had had lacerations of the cervix during labor, yet suffered no inconvenience, we must conclude that in the large majority of instances this accident gave rise to no subsequent symptoms. As regarded perineal lacerations, he did not believe that relaxation of the perinæum was caused by these tears, but that this was due to the weakening of the muscles resulting from the impaction of the fetal head. These lacerations, whether extending through the sphincter or not, should be repaired at once whenever this was possible.

(To be continued.)

Book Notices.

Cell and Serum Immunity. By Professor PAUL EHRLICH, Privy Councillor and Director of the Royal Institute for Experimental Therapy, Frankfurt on the Main, Germany, and by his collaborators. With Several New Contributions, including a Chapter Written Expressly for this Edition by Professor Ehrlich. Translated by Dr. CHARLES BOLDUAN, Professor of Bacteriology and Hygiene in Fordham University, etc. First Edition. New York: John Wiley & Sons, 1906. Pp. xi-586.

Some two years ago, in response to requests from many workers in immunity, Professor Ehrlich collected in a single volume the more important papers on that subject that had been published by himself and his collaborators; and he wished to show clearly that his theory of immunity rested on so broad an experimental basis that it was practically identical with a summary of generalizations derived from a large mass of experimental data. With one exception, each of the forty-one chapters that form the present volume is a translation of some paper published in German or French current medical literature since 1899. Six of these papers were written by Ehrlich, eleven by Ehrlich and a collaborator, and the remaining twenty-four by other investigators.

Ehrlich states that Behring's discovery of antitoxine suggested new paths in the study of immunity, as it appeared that further progress could be attempted in two ways—one, that had practical therapeutic results in mind, consisted in bending all efforts to producing various curative sera; the other consisted in investigating the nature of immunity phenomena to discover their underlying general principles. The latter investigation suggests that the immunity reaction is merely a repetition of certain processes of normal metabolism.

Ehrlich maintains that the toxic metabolic products of bacteria, the bacteriolysins, hæmolysins, and cytotoxines, produced artificially, and the majority of the ferments, probably always produce their effects by the coaction of two active groups in the molecular. One of these effects a union with the substance to be acted upon, while the other produces the characteristic effect. He states that his theory has developed essentially on the basis of chemical conceptions, as he has been more and more impressed with the idea that in a study of the fundamental biological phenomena the significance of morphological structure is far less than that of the chemistry involved. He does not believe that the phenomena observed in toxins and antitoxines bear any relations to the processes of colloid chemistry; for an interpretation of the immunity reaction from the standpoint of colloid chemistry is based on external analogies. "Structural chemistry has not only served to explain all the phenomena in immunity studies, but has also proved a valuable guide to indicate the lines along which further progress might be made." Those who wish a full presentation of this important subject will find the volume most useful.

Consumption; Its Relation to Man and His Civilization; Its Prevention and Cure. By JOHN BESSNER HUBER, A. M., M. D., Fellow of the New York Academy of Medicine; Visiting Physician to St. Joseph's Hospital for Consumptives, etc. Philadelphia: J. B. Lippincott Company, 1906. Pp. 13-536.

The author gives in this book a comprehensive exposition of the effect which consumption has had upon civilization and a consideration of its relation to human affairs. "Manifestly, medical science cannot cope alone and unaided with this difficult and prodigious world problem. Many forces, economic, legislative, sociological, humanitarian, must be enlisted." The book

is, therefore, written not only for the use of the physician, but also for that of the layman. The author is well known in his profession, and some of the chapters of the book have appeared in the leading medical journals.

The book is divided into fifteen parts. The author takes up the history and literature of tuberculosis, its description in art and literature, in part one, the specific cause and predisposition are treated of in the second and third parts, and the sociological viewpoint and the home influence in parts four and five. The prevention follows in part six, and the treatment in parts seven and eight. The American sanatoria are described in part nine and the European in part ten, and a general view of these institutions with their aims is found in part eleven. Parts twelve and thirteen are dedicated to the obligations of government, community, and family. Parts fourteen and fifteen, finally, give a résumé, scientific, and sociological. In nine appendices are treated subjects pertaining to the tuberculosis question, such as disinfection, hydrotherapy, rules and regulations for sanatoria, the cost and hints for building and equipping sanatoria, etc. That Dr. Huber is eminently capable of treating the tuberculosis question is evinced by the arrangement of the whole book and the treatment of the single subheads.

"Jeder Mensch hat schliesslich ein bisschen Tuberculose" is only too true, or, as Hippocrates words it, "the most dangerous disease and the one that proved fatal to the greatest number, was consumption (page 40)." The truth of this saying has been known to us for many centuries, but it was left to the nineteenth century to find the cause of the dreadful disease: Pasteur and Koch (page 51) are the axes around the names of whom our knowledge turns. The same century saw the growth and development of sanatoria. Trudeau (page 248) and Loomis (page 259), Brehmer (page 294), and Dettweiler (page 291) are here the pivots. May it be the blessing of our century to find a prevention against this scourge, if we cannot hope for a cure.

Elementary Manual of Regional Topographical Dermatology. By R. SABOURAUD, Director of the City of Paris Dermatological Laboratory, St. Louis Hospital. English Translation by C. F. MARSHALL, Late Assistant Surgeon to the Hospital for Diseases of the Skin, Blackfriars, London. With 231 Illustrations in the Text. New York: Rebman Company, 1906. Pp. vi-660. (Price, \$5.)

As indicated by the title, this work is a practical manual and not an exhaustive treatise. It is intended as a guide to the general practitioner in his routine work. It is original in classifying the various skin diseases topographically, each region of the body being represented by a chapter which deals with all the cutaneous diseases common to it, whether isolated upon that particular region alone or as part of a general affection. The descriptions are briefly but accurately given and worded in a way that produces interesting reading. Bacteriology receives careful consideration. What is said about treatment deals mostly with hygienic measures and with formulas for local use. Electricity is modestly represented by occasional reference to the high frequency currents, the galvanocautery, electrolysis, Finsen's phototherapy, and the Röntgen rays. In giving directions for the use of the latter, the Holtz-knecht scale and the pastiles of Sabouraud and Noiré, appliances of precision employed to a greater extent abroad than in this country, are constantly mentioned.

The table of contents consists of outline drawings of the body, each region being numbered. These numbers represent the pages on which a description of the region and its diseases may be found. If a physician should meet with a cutaneous disease which he did not know to be scabies, he might not know what special articles in his textbook to consult. It is supposed, how-

ever, that he might observe the predilection of the eruption for the hands, wrists, genitals, or some other part, and turn to the chapters dealing with those regions after consulting the above mentioned diagrams, thereby finding a description of the disease. After all the regions of the body have been carefully considered, space is given to the generalized skin diseases, which are classified according to their characteristic lesions, such as squamous, papular, vesicular, pustular, urticarial, etc. Finally, a chapter is devoted to the chronic infectious skin diseases as manifestations of syphilis, leprosy, glanders, etc. In a work of this character considerable repetition is necessary, but in this instance there is much less than one would suppose. An index, although not necessary, would certainly add to the value of the work.

BOOKS, PAMPHLETS, ETC., RECEIVED

The Toxins and Antitoxins and Their Antibodies. By Em. Porzi-Escot. Authorized Translation. By Alfred I. Cohen, Ph.D. First Edition. New York: John Wiley & Sons, 1906.

Prevalent Diseases of the Eye. By Samuel Theobald, M. D., Clinical Professor of Ophthalmology and Otolaryngology in the Johns Hopkins University, etc. Philadelphia: W. B. Saunders Company, 1906.

Physical Chemistry in the Service of Medicine. Seven Addresses. By Dr. Wolfgang Pauli, Privatdocent in Internal Medicine at the University of Vienna. Authorized Translation by Dr. Martin H. Fischer, Professor of Pathology at the Oakland College of Medicine. First Edition. New York: John Wiley & Sons, 1907.

Tropical Medicine. With Special Reference to the West Indies, Central America, Hawaii, and the Philippines. Including a General Consideration of Tropical Hygiene. By Thomas W. Jackson, M. D., Lecturer on Tropical Medicine, Jefferson Medical College, Philadelphia. Philadelphia: P. Blakiston's Son & Co., 1907.

Surgery. Its Principles and Practice. By Various Authors. Edited by William Williams Keen, M. D., LL. D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Philadelphia: W. B. Saunders Company, 1906.

The Technics of Operations Upon the Intestines and Stomach. By Alfred H. Gould, M. D., of Boston. Philadelphia: W. B. Saunders Company, 1906.

Organic and Functional Nervous Diseases. By M. Allen Starr, M. D., Ph. D., LL. D., Sc. D., Professor of Neurology, College of Physicians and Surgeons, Medical Department of Columbia University in the City of New York, etc. Second Edition. Philadelphia: Lea Brothers & Co., 1907.

Atlas and Textbook of Human Anatomy. By Dr. Johannes Sobotta, Professor of Anatomy in the University of Würzburg. Edited, with additions, by J. Playfair McMur-
rich, A. M., Ph. D., Professor of Anatomy in the University of Michigan. Two Volumes. Philadelphia: W. B. Saunders Company.

Official News.

Public Health and Marine Hospital Service
Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the month ending January 28, 1907:

Places.	Date.	Cases.	Deaths.
Arkansas—Fort Smith.....	Dec. 1-15.....	2	2
Georgia—Augusta.....	Jan. 1-8.....	11	11
Illinois—Galesburg.....	Jan. 5-12.....	13	13
Illinois—Sandwich.....	Dec. 1.....	1	1
Illinois—Viola.....	Oct. 1-Jan. 8.....	5	5
Indiana—Indianapolis.....	Dec. 30-Jan. 6.....	2	2
Indiana—South Bend.....	Jan. 5-12.....	3	3
Louisiana—New Orleans.....	Jan. 6-12.....	6	6
Michigan—Detroit.....	Jan. 5-12.....	1	1
Missouri—St. Joseph.....	Dec. 29-Jan. 5.....	7	1
New York—New York.....	Jan. 5-12.....	3	3
Wisconsin—La Crosse.....	Jan. 5-12.....	1	1
<i>Smallpox—Foreign.</i>			
Africa—Cape Town.....	Dec. 1-8.....	2	2
Brazil—Pernambuco.....	Nov. 15-30.....	26	26

Canada—Nova Scotia, Colchies the Continent	Jan. 7.		Present
Cambodia—New Cambod. and French	Jan. 7.		Present
China—Chongking	Nov. 1.	1 from Ss.	Rangoon
China—Shanghai	Nov. 24-Dec. 2.	1	
Cuba—Habana	Jan. 8.		1
		1 from Ss.	Kompaen ex 1
Cuba—Habana	Jan. 7.		1 from Ss.
			Puerto Rico.
France—Paris	Dec. 1-19.	9	1
India—Bombay	Dec. 11-18.		1
India—Calcutta	Dec. 1-8.		1
India—Madras	Dec. 8-11.		1
Italy—Genoa	Dec. 1-19.	3	1
Netherlands—H. R. Cerdam	Dec. 20-Jan. 6.	1	1
			Imported.
Russia—Moscow	Dec. 8-15.	1	
Russia—Odessa	Dec. 1-19.	11	1
Russia—St. Petersburg	Dec. 1-19.	7	1
Russia—St. Petersburg	Dec. 16-22.	1	1
Spain—San Fellu de Quixols	Dec. 22-29.		
Syria—Beirut	Dec. 1-19.		1
			Tripoli
			Yellow Fever Foreign
Salvador, Republic of	Jan. 14.		Epidemic.
			Cholera Foreign
Philippine Islands—Manila	Nov. 18-24.	2	1
Philippine Islands—Provinces	Nov. 18-24.	59	45
			Cholera Foreign
India—Bombay	Dec. 11-18.		1
India—Calcutta	Dec. 1-8.		91
India—Rangoon	Dec. 1-8.		20
			Plague Foreign
Rach—Batavia	Nov. 25-Dec. 8.	6	1
China—Hongkong	Nov. 25-Dec. 1.	1	7
Egypt—Alexandria	Dec. 22-26.	1	2
Egypt—Kene	Dec. 22-27.	6	8
Egypt—Menoufieh	Dec. 21-27.	1	2
India—General	Nov. 25-Dec. 8, 16-21.		12,090
India—Bombay	Dec. 11-18.		1
India—Calcutta	Dec. 1-8.		12
India—Rangoon	Dec. 1-8.		12
Peru—Chicama Valley	Dec. 11.		14

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending January 14, 1907.

Brown, B. W., Passed Assistant Surgeon. Directed to proceed to Evansville, Ind., for special temporary duty, upon completion of which to rejoin station at Louisville, Ky.

GOLDBERGER, JOSEPH. Passed Assistant Surgeon. Bureau letter of November 13th amended so as to grant sixteen days' leave of absence instead of twenty-one en route from Mexico, Mexico.

GUITERAS, G. M., Surgeon. Leave of absence granted for seven days, from January 8th, revoked.

Gwyn, M. K., Passed Assistant Surgeon. Granted leave of absence for one month, from December 17, 1906.

LAVINDER, C. H., Passed Assistant Surgeon. Extension of leave of absence for seven days, from January 8th amended so as to grant five days only.

McBRIDE, CHARLES R., Pharmacist. Granted leave of absence for six days, from December 1, 1906, under Paragraph 210 of the Regulations.

McMULLEN, JOHN, Passed Assistant Surgeon. Directed to proceed to Boston, Mass., as recorder of board of examiners, upon completion of duty to rejoin station.

ROBINSON, D. E., Passed Assistant Surgeon. Directed to proceed to Baltimore, Md., reporting to Medical Officer in Command for duty and assignment to quarters.

ROGERS, EDWARD, Pharmacist. Relieved from temporary duty in Washington, D. C., and directed to rejoin station, Stapleton, N. Y.

RUCKER, W. C., Assistant Surgeon. Granted two days' leave of absence, from January 15th.

STIMSON, A. M., Assistant Surgeon. Granted leave of absence for seven days, from January 10, 1907, under Paragraph 191 of the Service Regulations.

STIMSON, A. M., Assistant Surgeon. Granted extension of leave of absence for seven days.

STONER, G. W., Surgeon. Directed to proceed to Boston, Mass., as chairman of board of examiners, upon completion of duty to rejoin station.

Boards Convened.

A board of medical officers was convened to meet in Balti-

more, Md., on January 12th, for the physical examination of cadets in the Revenue Cutter Service. Detail for the Board: Surgeon L. L. Williams, Chairman; Assistant Surgeon French Simpson, Recorder.

A board of medical officers was convened to meet in Boston, Mass., on January 14th, for the physical examination of an applicant for the position of constructor in the Revenue Cutter Service. Detail for the Board: Surgeon R. M. Woodward, Chairman; Acting Assistant Surgeon F. H. Cleaves, Recorder.

A board of medical officers was convened to meet in Boston, Mass., on January 14th, for the examination of an alien immigrant. Detail for the Board: Surgeon, G. W. Stoner, Chairman; Surgeon R. M. Woodward, Passed Assistant Surgeon John McMullen, Recorder.

Reinstatement.

Dr. John W. Tappen reinstated as an acting assistant surgeon January 12, 1907.

Casualty.

Pharmacist John Achenbach died January 12, 1907, at Port Townsend, Wash.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending January 19, 1907:

BANISTER, JOHN M., Lieutenant Colonel and Deputy Surgeon General. Ordered to proceed from Fort Riley, Kas., to Omaha, Neb., and report in person to the commanding general, Department of the Missouri, for temporary duty as acting chief surgeon of that department.

DAVISON, WILSON T., Captain and Assistant Surgeon. Relieved from duty at the Presidio of Monterey, Cal., and ordered to Fort D. A. Russell, Wyo., for duty.

FARR, CHARLES W., First Lieutenant and Assistant Surgeon. Arrived at the Army General Hospital, Presidio of San Francisco, Cal., for treatment, from Manila, P. I.

HARVEY, PHILIP F., Colonel and Assistant Surgeon General. Leave of absence extended one month.

WOODSON, R. S., Major and Surgeon. Relieved from duty at Fort McDowell, Cal., and ordered to proceed to San Francisco, Cal., and sail from that place on or about February 5, 1907, for the Philippine Islands. On arrival at Manila ordered to report in person to the commanding general, Philippines Division, for assignment to duty.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending January 19, 1907:

ABEKEN, F. G., Passed Assistant Surgeon. Detached from duty at the Navy Recruiting Station, St. Louis, Mo., and ordered to duty at the Naval Training Station, San Francisco, Cal.

BAGG, C. P., Surgeon. Detached from duty at the Naval Station, Guam, L. I., and ordered home to await orders.

BLOCK, W. H., Acting Assistant Surgeon. Resignation accepted, to take effect from January 13, 1907.

DECKER, C. J., Surgeon. Ordered to duty on the *Franklin*, Norfolk, Va.

DE LANCY, C. H., Passed Assistant Surgeon. Detached from the *Hancock*, Navy Yard, New York, N. Y., and granted sick leave of absence for three months.

DUNIGG, J. T., Assistant Surgeon. Appointed an assistant surgeon from December 20, 1906.

HART, G. G., Acting Assistant Surgeon. Detached from duty at the Naval Training Station, San Francisco, Cal., and ordered to the *Albatross*.

HIBBETT, C. T., Medical Inspector. Detached from duty on the *Franklin*, Norfolk, Va., and ordered to duty at the Naval Recruiting Station, St. Louis, Mo.

MCCULLOUGH, F. E., Surgeon. Detached from the *Albatross*, and ordered to duty at the Naval Station, Guam, L. I., sailing from San Francisco, Cal., February 5.

MINK, O. J., Assistant Surgeon. Ordered to duty at the Naval Medical School, Washington, D. C.

PECK, A. E., Passed Assistant Surgeon. Detached from the *Concord*, and ordered to the Naval Station, Olongapo, P. I.

RIGGS, C. E., Surgeon. Detached from duty on the *Pensacola*, Naval Training Station, San Francisco, Cal., and ordered to duty with the marine legation guard, Pekin, China, sailing February 21, 1907.

SELLERS, F. E., Assistant Surgeon. Detached from the *Mohican* and ordered to the *Cincinnati*.

STOOPS, R. E., Assistant Surgeon. Detached from the Naval Station, Olongapo, P. I., and ordered to the *Concord*.

STRAETEN, R. J., Assistant Surgeon. Appointed an assistant surgeon, from December 20, 1906.

TAYLOR, J. S., Passed Assistant Surgeon. Detached from duty with the marine legation guard, Pekin, China, and ordered home to await orders.

THOMPSON, J. C., Surgeon. Detached from the *Cincinnati* and ordered to the Naval Station, Olongapo, P. I.

Births, Marriages, and Deaths.

Births.

CLARK.—In Fort Oglethorpe, Georgia, on Saturday, January 12th, to Dr. John Alexander Clark, U. S. Army, and Mrs. Clark, a son.

Married.

FLOYD—ZENOBIA.—In Savona, N. Y., on Tuesday, January 1st, Dr. James Floyd and Miss Maybelle Zenobia.

LYSTER—WITHEMBURY.—In Glendale, Ohio, on Thursday, January 10th, Dr. Theodore C. Lyster, U. S. Army, and Miss Lua L. Withenbury.

RISLEY—ROBINSON.—In Philadelphia, on Wednesday, January 16th, Dr. Samuel D. Risley and Miss J. Louise Robinson.

VON WINTERNEHM—PATTERSON.—In Philadelphia, on Wednesday, January 16th, Dr. Rudolf von Winternehm, of Germany, and Miss Alice Patterson.

Died.

ADAMS.—In Manchester, New Hampshire, on Sunday, January 13th, Dr. Daniel S. Adams, aged sixty years.

ANNAN.—In Emmitsburg, Maryland, on Monday, January 14th, Dr. Robert L. Annan, aged seventy-six years.

BANKS.—In Chicago, on Saturday, January 12th, Dr. James N. Banks, aged ninety years.

BELL.—In Monterey, N. Y., on Saturday, January 12th, Dr. Robert Bell, aged ninety years.

BOLAND.—In Barnesville, Maryland, on Tuesday, January 8th, Dr. George Boland, aged eighty-two years.

BOOTON.—In Luray, Virginia, on Tuesday, January 15th, Dr. Theodore H. Booton, aged fifty years.

CABELL.—In Norwood, Virginia, on Monday, January 7th, Dr. Aylette J. Cabell.

FAULKNER.—In Moravia, Liberia, Africa, on Tuesday, December 11, 1906, Dr. Henry Clay Faulkner, aged forty years.

GRIFFING.—In South Butler, N. Y., on Sunday, January 6th, Dr. S. C. Griffing, aged eighty-five years.

HUBBARD.—In Plymouth, Massachusetts, on Saturday, January 12th, Dr. Benjamin Hubbard, aged eighty-nine years.

KNOWLES.—In Boston, on Monday, January 7th, Dr. William K. Knowles, aged fifty-six years.

KUCKEIN.—In San Francisco, on Thursday, January 10th, Dr. Franz Kuckein, aged fifty-seven years.

LEARNED.—In Chicago, on Wednesday, January 9th, Dr. C. F. Learned, aged twenty-five years.

LECOMPTÉ.—In Boston, on Sunday, January 13th, Dr. Walter A. Lecompté, aged thirty-six years.

LE HARDY.—In Savannah, Georgia, on Monday, January 7th, Dr. Julius Cæsar Le Hardy, aged seventy-five years.

WAGAR.—In Rochester, N. Y., on Monday, January 14th, Dr. Charles M. Wagar.

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Original Communications.

SOME COMMON MISCONCEPTIONS IN THE PATHOLOGICAL PHYSIOLOGY OF THE CIRCULATION AND THEIR PRACTICAL SIGNIFICANCE.*

BY THEODORE C. JANEWAY, M. D.,
New York.

Attending Physician to St. Luke's and City Hospitals.

In every advancing department of science our concepts require periodical revision, if they are to correspond to our enlarging knowledge of the underlying phenomena. In medicine, we must be alert indeed, if we would keep our mental pictures in harmony with the array of new facts which modern research is bringing to light. For this reason I have thought it might not prove unprofitable, to consider certain common misconceptions in the domain of the pathological physiology of the circulation, some of which have come down to us with the authority of past generations of clinicians, but have been disproved by the experimental studies of to-day; others, the unripe fruit of insufficient observation, and finding their corrective in an enlarged clinical experience. All have a direct practical bearing upon prognosis and treatment, which I hope duly to emphasize.

First, let me enter a plea for a larger conception of disease processes. "No treatment without diagnosis," is a truism for the educated practitioner. But is giving a name a diagnosis? Does even a thorough knowledge of the anatomical lesions of pneumonia explain the fever, the rapid pulse, the delirium? No more than a study of the anatomy of the lung elucidates the physiology of respiration. What does the autopsy tell of the tremendous chemical disturbances of diabetes? Anatomical pictures, normal and pathological, are the indispensable foundation; but every medical man must learn to think in physiological terms, if he is to have any conception of those intricate disturbances of function, which are the chief manifestations of disease. This is especially true of the more dangerous symptoms which arise, and which must be combated, if life is to be saved. Yet how seldom can we obtain a satisfactory description of the mode of death in a given case. In the hospital it is exceptional when any house staff can answer a question on

this point. It is fundamental to treatment that we should know whether death may come through failure of the heart muscle to maintain the circulation or from gradual paralysis of the respiratory centre, from œdema of the lungs or œdema of the glottis, from internal hæmorrhage or surgical shock. Let us, therefore, as clinicians be students of pathological physiology, and carry our thoroughness into our symptomatic treatment. Then our by-word shall be, "no rational symptomatic treatment without adequate physiological concepts." We will now turn to one misconception, hallowed by long usage, the alleged cause of more deaths than any other medical term, "heart failure."

Heart Failure:—As popularly employed, heart failure is merely a synonym for sudden death. Such palpable blunders as overlooking internal hæmorrhage or sudden cerebral apoplexy need not detain us here, but among well educated medical men, yes, even among teachers, and writers of textbooks, a use of the term prevails, which careful experiment has shown to be at variance with the facts. I refer to the so called heart failure in acute infectious disease. When a patient at the height of an attack of lobar pneumonia suddenly sits up in bed and falls back dead, almost every one of us has been accustomed to tell the family, and to believe in our own minds, that he died of sudden paralysis of the heart. If we should be questioned as to the pathology of the condition, we should probably answer that the heart muscle had undergone certain changes as a result of the action of the toxins of the pneumococcus, which markedly impaired its functional ability; that, in this weakened state, the muscular exertion of sitting upright made a sudden demand upon the ventricles which they were unable to meet, and in consequence they instantly became overdistended and stopped beating. This seems to me a fair statement of the usual physiological conception, in the minds of intelligent physicians, of this common and lamentable accident. It is plausible; it is certainly satisfying to the family. Perhaps some of you will say that the explanation is all a matter of theory anyhow, and does not concern practical men who know the danger and do everything in their power to prevent it. But what about the facts?

In the first place, what does ordinary clinical observation show us? Many of us have noted the vast difference between the phenomena during life and at the post mortem examination, in

* Address delivered at the annual meeting of the West End Medical Society, New York, December 22, 1906.

this type of heart failure and in true cardiac death from asystole. No venous stasis, no oedema, no cyanosis; but extreme prostration, a blanched, cold skin, and a rapid, ineffectual heart. When death is not instantaneous, as you will all agree, the appearance of the patient resembles that seen after severe hæmorrhage or in surgical shock. After death, the empty heart chambers form the most striking contrast to the engorged auricles and right ventricle, so conspicuous where there has been failure of a diseased heart. The microscopical examination, it is true, shows slight changes in the muscle cells, cloudy swelling, but rarely any significant inflammatory lesions; but the microscope tells us nothing of a muscle's functional ability.

This striking absence of the usual phenomena of heart weakness and the analogies to surgical shock have of late years made clinicians here and there question whether the cause of the circulatory failure did not lie in the vasomotor system, rather than the heart. We owe it to Romberg (1) and his pupils at the Leipzig clinic, notably Pässler, that this question was put to the only conclusive test, that of scientific experiment; and their researches, published seven years ago, should before this have changed even the popular conception of this form of circulatory disturbance. As an example of admirable experimental study of a clinical subject, their work is well worth a few minutes' consideration.

They studied the mode of death in rabbits inoculated with pneumococcus, bacillus pyocyaneus, and the diphtheria bacillus, and found that it occurred after rapidly developing collapse, in every way similar to the so called heart failure in man. They observed the mean carotid blood pressure at different stages of the disease, and discovered that it remained normal during the major part of the illness, only beginning to fall when collapse was impending. They then studied the blood pressure of two hundred and fifty rabbits, from the first evidence of collapse until death, and the effect on it of four procedures: (1) Abdominal massage, which increases the work of the heart by emptying the abdominal veins into the right ventricle; (2) compression of the aorta above the diaphragm, which causes maximum work of the heart by increase in peripheral resistance; (3) stimulation of the nasal mucosa by the Faradic current, which produces extreme reflex vasoconstriction if the medullary vasomotor centre is intact; (4) short asphyxia, which stimulates the spinal centres as well as the medullary. All the animals were autopsied and their hearts and other organs studied histologically.

Romberg and Pässler found, with the first signs of impending collapse in the animal's behavior, more rapid heart action and a slight tendency of the blood pressure to sink. The notable change, however, was a great falling off in the rise of pressure from sensory irritation of the nose, and some decrease in the asphyxial rise. The elevation of pressure after abdominal massage remained as great as in the normal animal. In many cases the reflex rise in blood pressure

was lost before there was any actual fall in the mean level; which was apparently maintained by increased heart force, in spite of vascular dilatation. When complete collapse set in, the blood pressure sank rapidly, no reflex rise could be produced even by asphyxia, but abdominal massage still caused a prompt elevation, showing practically normal reserve force of the heart.

In the pneumococcus and pyocyaneus animals, the heart, even during complete collapse, responded as well as a healthy one to compression of the aorta, with no loss of muscular power whatever. The diphtheria hearts were somewhat impaired in function, and on post mortem examination showed more evident parenchymatous degeneration (Pässler u. Rolly) (2). Even this, however, was of minor importance, the real cause of death in all cases being the complete loss of vasomotor tone; the animals, as it were, being bled to death into their own veins, and the heart stopping only because so little blood was returned to it.

Romberg and Pässler's conclusions have, in my opinion, never been controverted, and have been extended to other similar conditions, such as collapse in perforative peritonitis (Heineke) (3), and in phosphorus poisoning (Hasenfeld and Fenyvessy) (4). They clearly demand that we shall in most cases abandon the idea of cardiac death at the height of acute infectious diseases, such as pneumonia, typhoid fever, diphtheria, and the septic fevers; though sudden death during convalescence may be due at least in part to the later development of lesions in the heart muscle. In place of heart failure, we must write vasomotor failure, or collapse.

Now what is the practical significance of it all? First, does it not emphasize the value of careful observation of pulse rate and blood pressure in acute disease? We are all of us so accustomed to having temperatures charted that we cannot conceive of reading a column of figures to get the information that one glance at the graphic record affords. But so conventional are we that we laboriously scan the pulse figures at the bottom of the chart, if we do not neglect them entirely, and at the end have but a hazy idea of variations, which are at least as important as those of the fever. Could we not all profit by the general use of graphic records for everything of importance at the bedside, but most of all for the pulse rate? I have inaugurated such a system at St. Luke's Hospital this year, and my service gained greatly in interest and in the intelligent study of long or active cases.

As yet the clinical study of blood pressure in infectious disease has not yielded such brilliant results as in surgical shock. In typhoid fever, so far as my experience goes, it gives the most information. Low arterial pressure is the rule, and the depression of blood pressure is fairly parallel to the severity of the case. Pressures about 100 mm. are usual in mild cases, as low as 75 or 70 mm. in severe ones. These latter figures are to be regarded as of serious significance. The lower the pressure and the more rapid the pulse for a

considerable period, the more certain are we of a profound loss of vasomotor tone.

Hæmorrhage causes a distinct fall in pressure, and this, with a fall in temperature, may suggest the diagnosis before the blood is passed.

In pneumonia I have had results which were less easy of interpretation. The pressure often varies greatly from day to day. Here the effects of the dyspnœa, the restlessness and anxiety, confuse the picture. I do not consider that I have had sufficient experience of trustworthy routine observations, in these cases, to speak with authority.

You will remember that, in Romberg's animals, an actual fall in blood pressure did not occur until collapse was already present. The early indication was the loss of the reflex rise of pressure from sensory stimulation. I have made a few experiments with a view to some practicable clinical method of determining this, but so far without success. One thing is certain; a rapidly falling blood pressure, with an increasing pulse rate, is of the worst prognostic significance. The converse also holds true that rising blood pressure, with falling pulse rate, indicates a speedy favorable termination.

I think you will agree with me that the careful study of blood pressure in infectious disease offers a fruitful field for bedside research, and may in the future give a far deeper insight into the all important vasomotor changes than we now possess.

Therapeutically, the knowledge that danger lurks in the vasomotor apparatus and not in the heart seems to me of great practical import. Romberg and Pässler tested on their animals the various drugs used to combat collapse in man. Strychnine they found of no value whatever, just as Crile did in surgical shock. Digitalis exerted a temporary, caffeine and camphor, a somewhat more powerful beneficial effect through increasing the heart's output; but none were of great service. Barium chloride, which acts directly on the bloodvessels, like adrenalin, at once raised the blood pressure, even in the most profound collapse, but only delayed the inevitable result. The success of adrenalin in some cases of surgical shock when administered intravenously might seem to afford some hope, but the fight must be kept up so much longer in infections that this, too, fails us. Saline infusion may tide over an emergency, and its employment is rational.

What shall we say, then, of the indiscriminate drug giving we sometimes see? Most of all, what shall we think of the man who, in the presence of a dangerous loss of vasomotor tone, gives our most efficient vasodilator, nitroglycerin?

For the present, prevention must be our chief aim. This we accomplish by shielding the nervous system from all injurious external influences, and by the bath treatment. I have found a rise of blood pressure and fall in pulse rate quite as marked and quite as usual as the drop in temperature from tubbing in typhoid, when I have had the opportunity to observe it. This can only be interpreted as an influence on the vasomotor centres; and does it not seem rea-

sonable to attribute much of the benefit of this form of treatment to its assistance in maintaining vasomotor tone, and consequently improved nutrition of the great nerve centres?

Recently Philip Brown, of San Francisco, has reported a small series of cases of severe pneumonia in alcoholics, treated by Nauheim baths, with seemingly excellent results. His explanation is similar to the one described, and such observations should be tested more extensively.

THE HOT THERMOMETER. For 100 years we have turned to a very different type of circulatory disturbances, that characterized by a permanent elevation of blood pressure, or as it is often called, chronic arterial hypertension. It has been one of the unfortunate, though inevitable, by-products of our recently acquired ability to determine a patient's blood pressure in millimetres of mercury, that the sight of the column near the top of the tube has so often led to immediate endeavors to reduce the pressure at any cost. I plead guilty myself at once. It is only human. How many of us on a hot day, though we have suffered no personal discomfort, possess sufficient philosophy to withstand the knowledge that the thermometer is over 90° F.? Such blessings as the antipyretics, when intelligently used, have had their dark side and proved veritable boomerangs in the hands of unthinking practitioners. "Knowledge comes, but wisdom lingers," is as true of each of us individually, as of the race.

The belief that high blood pressure is in itself a danger to the patient, and should be attacked by every means in our power, has just enough truth to be a really serious misconception. There is another closely related fallacy; namely, that digitalis, because of its physiological effects in raising blood pressure, through increasing the volume and energy of ventricular systole and by vasoconstriction, should not be given to patients with hypertension. I have seen men brought near to the gates of death by the unwillingness of their physician to administer the one drug which can combat asystole, because of this fear of raising the blood pressure. The attitude of mind was admirable; but the reasoning was based on a misconception of the pathological physiology of hypertension, which is worthy of consideration.

Persistent high arterial pressure, one of the cardinal symptoms of chronic Bright's disease, is also found independently of nephritis in at least ten per cent. of all cases. Its causation in these cases is unknown, and the exact pathological physiology of the blood pressure in Bright's disease has been the subject of speculation and experiment for more than half a century. At the outset it must be admitted that no explanation of the origin of this well known phenomenon has met with general acceptance, though recent observation and experiment seem to be leading nearer a solution. In particular, Pässler's (5) researches are notable. By excision of one kidney and the removal of successive portions of the remaining one, he was able to bring about varying grades of renal insufficiency, uncomplicated by inflammatory or exogenous toxic in-

fluences. Animals thus operated on developed first, polyuria; then, high blood pressure, with secondary cardiac hypertrophy; finally, with higher degrees of renal inadequacy, toxæmic manifestations. Pässler argues from this that the anatomical changes in heart and vessels are secondary to the increased blood pressure, as most of us have believed, though a few have dissented; secondly, that the hypertension is due to widespread vasoconstriction, of toxic origin, from retained metabolic products. That a general increase in vasomotor tone is responsible for the hypertension agrees well with the facts of clinical observation. That its origin lies in chemical vasoconstricting substances is plausible; but the hypothesis of a reflex mechanism, such as Loeb (6), of Krehl's clinic, brought forward last year, cannot be eliminated. Of the causes of permanent high pressure without nephritis we must confess ignorance.

Complete and adequate concepts are therefore quite out of the question. Are we then left with no basis for our therapeutical attack on so important and common a condition? Not at all. Certain facts we know, both from laboratory and bedside experiment, and standpoints have been won, from which we may view certain aspects of the problem, if not the whole.

The most important of these is the conception of permanent high blood pressure as, in part at least, a compensatory manifestation. On this there is general agreement, even among those whose views as to its cause diverge (7). Is it not one of the great achievements of modern medicine that the natural defences of the human organism have been brought to light, and that we read between the lines, as it were, a new meaning in many pathological processes. Inflammatory lesions themselves are but the wall the tissues build against foreign invaders. The hypertrophied and dilated left ventricle, in aortic insufficiency, overcomes the mechanical defect of the valve. The hypertrophied left ventricle in chronic nephritis maintains the circulation in the presence of increased peripheral resistance.

The increased resistance and consequent hypertension, then, are they not wholly detrimental? Not necessarily. It is conceivable, yes, even probable, that with markedly diminished kidney area, a more rapid blood flow than normal must be maintained through the remaining kidney tissue, if excretion is to be kept at all adequate. This can only be brought about by a general rise in blood pressure. Again, in many, if not most patients with Bright's of long standing, secondary arteriosclerotic changes have taken place in the smaller vessels, which add a further permanent element of increased resistance. For the maintenance of sufficient capillary flow in the areas thus affected, heightened blood pressure is necessary. It is possible, though not proved, that the cases of chronic hypertension without nephritis are dependent upon such arterial disease in other important organs. Under such conditions hypertension is as much an evidence of the necessary protective powers of the organism, as when it appears in acute cerebral compression to prevent fatal anæmia of the medulla oblongata.

This view of the essential and regulatory nature of hypertension finds added support at the bedside. Have not many of you been impressed with the futility of all attempts in these patients to keep the blood pressure down with drugs? Yet they will respond promptly to single doses of the vasodilators. I could show many records illustrating this point, some of them indeed striking. Another common experience is that the steady downward progress with falling blood pressure, when heart weakness supervenes, is often made worse by arterial dilators. If improvement comes under digitalis, for instance, the pressure usually rises. These observations find their readiest explanation, if we believe that for such patients an average level of arterial pressure far above the normal is absolutely necessary to insure the requisite speed of capillary blood flow. For them the optimum pressure for the maintenance of a normal circulation may become 200 mm. or more, instead of 100 to 145 mm.

But you probably have another question ready to put to me. How do we know that all the elevation of pressure in a given case is necessary as compensation, or only part; the remainder representing an over effort of the organism, so often seen, or a functional hypertension superadded to an essential one? This is a very pertinent question. As a matter of fact such an added functional or temporary rise in pressure occurs more readily in patients with hypertension than in normal ones. Only careful and repeated examinations can help in distinguishing the two elements, of which one must be conserved, the other eliminated.

To come back to the practical application; how shall a wise physician act in the presence of marked hypertension? First of all he must institute preventive treatment, which shall limit further mischief, check the development of the underlying kidney lesion, and hinder secondary degenerative changes in arteries and heart. I can only touch on this in its larger outlines. Diet is most important, and should be carefully planned to attain physiological economy of nutrition, particularly of proteid metabolism. All kidney irritants and substances difficult of elimination in the urine must be interdicted. Von Noorden has shown the need for moderation in the total fluid taken. Alcohol is usually, though not invariably, unwise. Occupation requires supervision, since prolonged or arduous mental work and excitement tend to raise blood pressure strikingly. On the other hand, hard physical labor entails too much strain on the already hypertrophied heart. Moderation is the desideratum; sufficient congenial occupation and moderate physical exercise are valuable means of prolonging life. One frequently sees active men of affairs, who give up all business rather suddenly, go to pieces more rapidly than would have been expected had they kept under full steam. Where exercise is not well borne, on account of beginning heart weakness or for any reason, massage is needed to keep up the venous and lymphatic circulation and the muscular nutrition. I recall many examples of its favorable influence.

Tobacco is best sharply restricted, since it has

a marked hypertensive effect. Straining at stool must be forbidden, and the need for it forestalled by laxatives. Cold baths agree with some of these patients, but, as a rule, those of neutral temperature are better. Similarly, a warm climate for the winter is advantageous. With such a regimen one often has the gratifying experience of seeing a gradual fall in blood pressure, together with an improvement in the patient's strength and *being able*.

As to drugs, the iodides, in small doses, long continued, seem to belong among the preventive measures. Their action is little understood, but probably affects the nutrition of the vessels. Animals given adrenalin injections are said to develop arteriosclerotic changes more slowly when iodides are given simultaneously. They have no direct effect on blood pressure.

Where no symptoms of a threatening nature exist, these preventive measures alone are called for. Under such circumstances a systolic blood pressure of 200 mm.—yes, even of 250 mm. and over—is not incompatible with a number of years of comparative comfort and activity, particularly if the response to treatment is favorable and the patient cooperates heartily.

Of the dangerous accidents which befall persons with hypertension, such as cerebral or other hæmorrhage, uræmic convulsions, anginal seizures, acute pulmonary œdema, and the like, I need not speak here. In the presence of peril to life itself, the vasodilators must be used freely and without hesitation. One, however, should not stop at even large doses, if the symptoms continue; though blood pressure observations, when possible, are an excellent guide to dosage. Venesection, particularly in acute uræmia, has a marked hypotensive action. One simple therapeutic measure deserves special mention—rest in bed. In the exacerbations of a chronic nephritis, so common in hospital practice, bed and a milk diet often suffice to reduce the pressure strikingly, without any other treatment.

In the majority of our patients, however, the danger most to be dreaded lies in another quarter. It is the onset of gradual insufficiency of the left ventricle, with secondary failure of the right ventricle, general venous stasis, and all the phenomena of an uncompensated cardiac lesion. In fact, hypertension and an aortic stenosis are mechanically similar in their effect on the heart. Just under these conditions a failure to recognize the compensatory nature of hypertension and the necessity for its maintenance works the greatest harm. Beginning asystole often leads to a slight fall in pressure, which is considered evidence of improvement; or, if the patient is seen first with marked heart weakness and high blood pressure is found, which may still be below the level that individual requires, nitroglycerin and similar drugs are given, to "let up on the work of the heart," while digitalis is withheld. If digitalis be given and fail, it may prove, and often is, an inefficient preparation. One thing I am convinced of; that with the appearance of œdema and diminished urine, digitalis, best in the form of a freshly made infusion from good English

leaves is urgently indicated. In some cases where the blood pressure is very high it may be wise to give vasodilators at the same time, but never to the point of lowering the tension. Rest in bed and marked restriction in the quantity of fluid taken should never be forgotten. Under such circumstances a rise in blood pressure is to be welcomed as a sign of change in the right direction, and will usually coincide with the establishment of diuresis and the absorption of the œdema.

In concluding I am keenly aware of the fragmentary nature of this short study in a large field. Much of importance has been omitted, and perhaps undue emphasis has been placed on some matters of small moment. But if I have succeeded in stimulating your interest in the investigation of circulatory disorders as problems in pathological physiology, even by arousing your desire to prove me wrong, I have accomplished my main object.

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36 WEST FORTIETH STREET.

THE SURGICAL APPLICATION OF BLOOD EXAMINATIONS.*

By JOHN B. DEAVER, M. D.,
Philadelphia.

Although the information obtained from the examination of the blood is often most valuable both to the internist and the surgeon, yet a distinction must be drawn between the interpretation and application of the data obtained when considered medically and when considered surgically. To the internist the blood picture is often the sole criterion of a correct differential diagnosis, as for example, between pernicious anæmia and simple chronic anæmia on the one hand, and between myelogenous and lymphatic leucæmia on the other. To him, treatment of the condition confined as it is so often to rest in bed, dietary modifications, tonics, etc., may be regarded with more or less complacency. For the surgeon, however, the operative diagnosis is rarely so readily established by the blood picture alone, and to him falls the added responsibility of the question of an operation, which may mean life or death, a question seldom safely settled by examination of the blood. Let us consider, then, what proper estimate may be placed by the surgeon upon the results of blood examination.

Hæmoglobin and Erythrocytes.—Although there is no constant ratio between disease in the percentage of hæmoglobin and disease in the number of red blood cells, yet this fading in hæmoglobin is so often intimately associated with

* Read at a meeting of the New York Academy of Medicine, December 21, 1906.

changes either in the number or morphology of the red blood cells that it would be useless to consider the one apart from the other. In other words, the degree, but not the pathological unity of anæmia may be determined by the hæmoglobin loss alone.

Leaving the primary anæmias to the domain of the internist I shall consider the secondary anæmias that are more truly surgical and, for purposes of discussion, shall follow the classification of Lazarus¹ in dividing these anæmias into acute post hæmorrhagic anæmia and symptomatic anæmia.

Acute posthæmorrhagic anæmia is that following sudden, serious acute hæmorrhages as, for example, from ruptured extrauterine gestation sac, acute pancreatic apoplexy, ulceration or malignant disease of the gastrointestinal tract, ulcerating uterine tumors, pregnancy and traumata, and diseases directly involving the circulatory system. In such emergency hæmorrhages, of course the hæmoglobin estimation and red blood cell count can scarcely be of any immediate value to the surgeon, since his prime thought—except in lethal cases—is directly to check the bleeding if possible, and since, as Lazarus says, “the histological changes peculiar to acute anæmia are found, at the earliest, twenty-four hours after the hæmorrhage. Still, the determination of a number of corpuscles and the percentage of hæmoglobin would be occasionally of service.

Blood examinations in acute posthæmorrhagic anæmias are of more value after operation in indicating the rapidity with which the blood returns to normal. In these cases it is commonly observed that the number of red blood corpuscles is restored sooner than the hæmoglobin percentage.

Symptomatic or Simple Chronic Anæmias occur after small but frequently repeated hæmorrhages, and what concerns us more particularly, in association with or as the result of chronic suppurative processes and tumors.

Diagnostically, I have found the number and character of the red blood cells and the percentage of hæmoglobin so nearly similar in patients afflicted with chronic suppurative processes and in others with malignant tumors, as *per se* to be of no value. For instance, in pyosalpinx I have found the average hæmoglobin index to be about 54 per cent., while in carcinoma it was 59 per cent. In the same disease there was a leucocytosis in 27 per cent. of the malignant cases and in 67 per cent. of the tubal disease. Of far more importance in these conditions is the question of the wisdom of operation upon a patient whose hæmoglobin has reached a low level and whose red blood cells are diminished in number, dwarfed and deformed, because the possibility of parenchymatous and fatty degeneration of the heart and other organs in these cases, should always be borne in mind. I cannot too strongly emphasize that a patient whose blood has been impoverished to a great degree is generally in no condition to withstand an operation, and when corroborative of the clinical findings of an econ-

omy ruined by chronic disease, such a blood report is a warning of extremely poor recuperative powers. Too often in such cases has operation—added to the exhaustion incident to long continued suppurative processes or to the effect of saturation of the organism with septic toxins of malignant tumors—too often, I say, has an operation been performed unwisely and led to a lethal termination. Given in these cases a hæmoglobin percentage below 25, a paucity of small distorted red blood cells and a disease spoiled body, I consider the patient's condition provocative of the surgeon's most serious and sober contemplation.

Although isolated cases of survival of operation and improvement are found in the literature, yet their relative minority can furnish no basis upon which to support a refutation of the propriety of conservatism in such instances. If operate you will, be fearful lest you with your puny scalpel impersonate the winged messenger with his gigantic scythe.

Leucocytes.—To me the white blood cells have been a frequent source of perplexity. In their most useful relation as an aid to diagnosis in surgical affections, they have been often the *sine qua non* in the clarification of an obscure diagnosis, while at other times they prove utterly incompetent of the responsibility thrust upon them. Were it not true that in the majority of cases they fully come up to expectations, they would be of but little value to the surgeon. Often as I stand by the bedside the behavior of the leucocytes calls forth no comment or criticism, acting in perfect conformity with the clinical picture of the case; at other times their behavior would monopolize attention and study at the expense of the patient. It is just this fallibility which has prevented surgeons hailing the leucocyte count as an ever burning beacon light in the establishing of a diagnosis.

Normally, the white blood cells are uniformly distributed throughout the body in the connective tissue as well as in the circulation, in such numbers that a cubic millimetre of blood should contain about 8,000. Produced in the meshes of reticular tissue outside of the bloodvessels, in the lymph glands, and especially in the red bone marrow, they are separable into different varieties distinguishable by form, each form occurring in different relative percentages. They assume various duties, chief of which to us is that safeguarding the interests of the body, wandering about the tissues, alert at all times, and congregating in sufficient numbers at any point where bacterial invasion occurs. Except in the case of a few infectious diseases, the bacteria, as they multiply, attract more and more leucocytes and excite stimulation of the tissues wherein the blood cells are formed, leading to production beyond the normal, so that taken from any part of the body a cubic millimetre of blood will now show more than 8,000 leucocytes, or a leucocytosis. According to the modified theory of Metchnikoff, as expressed by Ehrlich and Lazarus,² the leucocytes combat the toxins produced by the invading microorganisms by excreting antitoxic

or bactericidal substances, and by their phagocytic power aided by the opsonic power of the blood serum engulf the bacteria. The mechanism of this reaction on the part of the organism is most satisfactorily explained at present by Ehrlich's side chain theory of immunity, which it is not necessary to discuss for our present purposes. Suffice it to say that if by neutralization the bacterial toxins be rendered inert, the work of the leucocytes is done, and they become reduced in numbers; but if enough antitoxine is not produced, the bacterial toxins, now unhindered, will sweep through the body impairing the integrity of all the body cells, inhibiting the further new production or leucocytes at their places of origin, so that now, too, the leucocytes are reduced in numbers.

Clinically, we may usually follow this biological phenomenon by comparing the number of leucocytes to the condition in which the patient is found shortly after the count was made, or, later, by comparing these various counts to each other and to the course of the disease, so that in this manner, ideally speaking, we should have a reliable indication of the presence of an inflammation and suppuration, and should be able to gauge its course and severity.

However, now and then a case occurs in which a bacterial invasion does not permit itself to be revealed by any such method, and thus I am compelled to employ such terms as "usually" and "should have." Should I be asked to explain the *modus operandi*, in these negative cases, I might reply in such indefinite phrases as "lack of resistance," "personal susceptibility," "impaired state of health," "idiosyncrasy," and so on, but instead I would resort to the subterfuge of answering a question by a question, and ask, for example, why in the Jewish race diabetes mellitus is so frequently encountered and tuberculosis so seldom, or why the Japanese are so immune to scarlatina and the negroes to malaria?

So that, with these reservations, leucocytosis will usually be found in infections leading to suppuration in any part of the body, whether it be an external abscess, an otitis media, an osteomyelitis, an invasion of the internal organs, or of the great serous cavities of the body, or what not, and it is with these latter conditions that I am particularly desirous of dealing with to-night, since in these cases the leucocyte count has a more important and broader field for usefulness.

Given a pus producing infection of, for example, the gallbladder, appendix, Falloppian tubes, or other portions of the abdominal cavity, I am always glad to see not only the presence, but also, when conditions warrant the observation, the rapid increase of a leucocytosis, for the former is silently corroborative of my preformed diagnosis, and the latter is commonly satisfactory evidence that the leucocytes are rising to the occasion, generally spoken of as good reaction on the part of the patient. To illustrate this I cite briefly the following case:

Miss H., thirty-two years of age, was admitted to the German Hospital, August 6, 1905, with the history of three previous attacks of appendicitis. Present attack began thirty-six hours before admission with cramps,

beginning at the umbilicus, and later localizing above McBurney's point. She vomited several times. Bowels had not moved up to the time of admission, 12 o'clock noon. Examination revealed moderate distention of the abdomen and rigidity of the right rectus and flat muscles of the right side. There was great tenderness between McBurney's point and the right lower costal margin.

Owing to a peculiar situation on the part of the patient, operation was delayed five hours, so advantage was taken of the opportunity to make several preoperative blood counts, an infringement on my rule to operate as soon as the diagnosis is made, if made early.

On admission, at 12 o'clock noon, there were 15,700 leucocytes; at 2 o'clock, two hours later, there were 18,000, while at 4.30, or two and a half hours after the second count, there were 24,800. Operation one half hour later revealed the appendix 6 cm. long to the outer side of the cæcum, high up, below the liver, perforated and gangrenous at its tip, and containing pus and faeces. It was adherent to the cæcum, surrounded by about 20 c.c. of seropurulent material, and apparently well walled off from the general peritoneal cavity.

Had the operative interference in this case been further delayed and signs of spreading infection, such as further distention of the abdomen, increasing rigidity, appeared, together with a decreasing leucocyte count, I should have been very loath to operate, considering the decrease in the number of leucocytes under these circumstances a sign of ill omen.

On the other hand, had the symptoms abated, the pain and tenderness, and probably the rigidity continuing for some time, and the leucocytes returning nearly, if not entirely, to normal, I would not have been surprised, even were no mass palpable; had I opened up a circumscribed abscess, for it is a common observation that in such cases leucocytosis is often absent.

In appendiceal abscess a leucocytosis is the rule, and in looking over my records for the last one hundred cases I find the count to vary from 6,300 to 47,200, with an average of 17,760.

Below 10,000	14
10,000 to 20,000	61
20,000 to 30,000	23
Above 30,000	6

Upon reading the records of the ten cases where the initial count was below 10,000, I found that in seven the abscess was localized and of some days' duration, and that in three cases there was a spreading peritonitis. The latter finding would incline one to the idea that these represented the type of case in which the infection was virulent and the resistance of the patient low, but such was not the case, as they all recovered without giving cause for any worry. While it is only fair to state that the diagnosis of these one hundred cases was never in doubt, yet the finding that in ninety per cent. of them a leucocytosis was present inspires greater confidence in the value of the count than a lower percentage would do. As is well known, the diagnosis of appendicitis is most frequently confused with pyosalpingitis and with biliary tract disease, and a comparison of the counts would therefore be of some interest:

	High	Low.	Average.	Above 10,000, Per ct.	Above 15,000, Per ct.
Appendicitis with ab-					
scess, fever, appar-					
ent abdominal	47,200	6,300	17,760	90	62
Pyosalpingitis	42,600	5,300	13,000	67	32
Biliary tract disease	23,300	4,000	9,000	15	6

From this table the collective value of leucocytosis is quite apparent and undoubted, and yet in some individual cases the relation between the leucocyte count and the operative findings was such as to make one wish that some clinical method would become known whereby the "body resistance," as it is called, could be accurately determined. Criticism may be made that all cases of appendicitis are not classed together just as in the biliary tract infections, but I find that the diagnosis of acute appendicitis seen early, i. e., when the disease is confined to the appendix itself, is almost invariably easy to make, and at this time a high leucocytosis is not usually encountered. When leakage from the appendix occurs the picture is changed, and in those pointing upward towards the gallbladder a diagnosis is often difficult and may be nearly impossible, hence the value of the leucocyte count.

In the early stages of acute appendicitis the pain and especially the tenderness are well to the right of the median line and in the lower right of the abdomen. While cholecystitis in its early stage is most apparent in the epigastrium and not in the right upper quadrant as usually taught.

It is therefore in the older cases with extra appendiceal involvement that cause symptoms referable anywhere on the right side of the abdomen that a leucocyte count is valuable, because old gallbladder disease and especially gallstones are felt in the right upper quadrant. The chronic appendicitis cases need not be considered as the absence of pus makes operation easy through a high (gallbladder) incision if an error in diagnosis has been made.

In acute pyosalpingitis the leucocyte count is not of much value except in differentiating from uterine fibroids, ovarian cysts, etc., and one should constantly bear in mind that these may give a leucocytosis when suppurating. The average hæmoglobin index is much lower in tubal disease than in appendicitis, and the finding of only fifty or fifty-five per cent. of hæmoglobin and a moderate leucocytosis corroborates strongly in making a diagnosis when the clinical signs point to a pelvic collection.

After making this statement I received a communication from Dr. Ghiskey, pathologist to the Episcopal Hospital, giving me his opinion of the leucocyte count in one hundred cases of acute appendicitis: In acute cases, the disease being confined to the appendix, he found an average of 11,246 leucocytes, in abscess cases an average of 18,500, as compared with 17,760 in my own cases, and in chronic cases an average of 8,690. His conclusions agreed with those embodied in this paper and with those in my book upon *Appendicitis*, and he added that streptococci produced the highest leucocyte count, staphylococci next, and the colon bacillus the lowest.

In typhoid fever I have found the leucocyte count of but little value, and as DaCosta says,

"intestinal perforation excites leucocytosis, provided that the shock is not too great—a proviso which unfortunately robs this sign of diagnostic value in fully one half of all cases. Aside from this the cellular increase may be so transient as to escape detection, unless almost an hourly count is made." But the absence of leucocytosis, the Widal reaction and a blood culture often aid materially in diagnosing typhoid fever from sepsis.

After operation leucocytosis frequently proves of essential value in corroborating the suspicion of a complication, such, particularly as a secondary collection of pus, intestinal obstruction, septic venous thrombosis, etc. Sometimes it is indicative of hæmorrhage or bad drainage.

Iodophilia or the property of the polymorphonuclear leucocytes to exhibit a brown coloration under pathological conditions when stained with iodine is of little value. My experience agrees with that of Bernicot, who believes that it is inconstant and variable. It is only of value in the detection of suspected deep abscesses when the leucocyte count has proved normal.

In my gallbladder cases associated with jaundice I have found the time of coagulation of the blood to be delayed. DaCosta,³ in twenty-eight cases of cholelithiasis with jaundice, found an average coagulation time of 10 minutes, 40 seconds; while in twelve cases without jaundice the average was 5 minutes, 24 seconds. I have not observed uncontrollable oozing in my jaundice cases except in a few instances where the obstruction was due to growth or disease of the pancreas.

Serum Reaction.—The Widal reaction has proved of value in detecting the presence of suspected enteric fever in a number of my cases, which otherwise could not be explained surgically. I have seldom found it positive directly on admission, but later on, as the doubtful cases were watched, it, in conjunction with other early symptoms, has corroborated the existence of the disease. Often it is positive in patients attacked by gallbladder disease or bone caries at various intervals after the subsidence of enteric fever.

In entering upon a discussion of the practical value of the differential count I feel that little is to be said, because surely no one will doubt its value when carefully performed with properly stained films and a count of at least 500 cells, some writers say 1,000. But situated as I am in a hospital where the material is very large, most of the cases being acute ones and requiring early diagnosis and an immediate operation we have not been able to confirm the enthusiastic opinion of its usefulness. I believe this, that the greatest value of the differential leucocyte count is obtained by the man who has to diagnosticate the disease, i. e., the general practitioner, if he has the requisite training for the work and the time, at least one hour, to make the count. But how many such men are able in a suspected case to take the blood, go back to their office, spend twenty minutes on the white cells, stain the films and count at least 500 leucocytes.

³ Da Costa, *Keen's Surgery*, 1, p. 135, 1906.

Theoretically it should be done, but practically is it always possible? Again, in most hospitals the laboratory routine is very great and falls mostly upon young men just graduated who in a short time learn to make a differential count with sufficient accuracy, but then immediately leave the laboratory for the house service.

These constitute my objections to the method, merely practical ones, although I sincerely agree with the following statements by Dr. Soudern in the treatise upon *Surgery* by the late Dr. Fowler: "It has been found, however, that the quantitative relation of leucocytes offers a better guide to the status of an inflammatory process than the mere presence of leucocytosis, with the additional advantage that it is not particularly influenced by body resistance. Furthermore, the leucocytosis present with a given differential count is a direct indicator of body resistance. The particular point in question is the relative percentage of the polynuclear neutrophiles." He groups, after a careful analysis of 1,415 blood examinations, three distinct blood pictures in inflammatory lesions as follows:

"1. A relative percentage of polynuclear cells below 70 with an inflammatory leucocytosis of any degree, excludes the presence of gangrene or pus at the time the blood examination is made, and usually indicates good body resistance toward infection.

"2. An increased relative percentage of polynuclear cells, even with little or no inflammatory leucocytosis, is still an absolute indication of the inflammatory process and the percentage is a direct guide to the severity of the infection.

"3. An increased relative percentage of polynuclear cells with a decided inflammatory leucocytosis. Most of the cases of inflammatory lesions, with or without purulent exudate, meet the specifications of this class."

To these observations I might add that in lead colic a differential count would be of great value as the basophilic granulation of the red cells would at once attract attention and decide the diagnosis. But one should remember that lead workers may get appendicitis, and that a leucocytosis is sometimes encountered during the acute stage of plumbism.

I have referred briefly to the primary anæmias, and can recollect one case which was admitted to my wards diagnosed as sepsis secondary to a miscarriage occurring some weeks before, in which a correct diagnosis was not made until the differential count revealed a leucæmia from which the patient died a few weeks later.

In tuberculosis and in typhoid fever there is no polynuclear increase, even though a slight leucocytosis may be present in tuberculosis of serous surfaces, and further mixed infections occurring in the above diseases are not attended by the same polynuclear increase as in pure pyogenic infection.

In pyosalpingitis the polynuclear percentage rarely reaches 85, and in the chronic cases with a low hæmoglobin index, an absent or a very moderate leucocytosis the polynuclear count will be at the normal point. In acute septic endometritis the polynuclear percentage may be very high, while the leucocytosis may be only moderate, and this should be interpreted as a sign of ill omen.

Lastly, in children one must remember that the normal percentage of polynuclear cells is much lower than in the adult, and correspondingly a different interpretation must be put on the count.

It is of but little value to base an opinion on the interpretation of but one blood count alone in cases in which it is possible to make more, because the leucocytes vary greatly with the pathological progression of the given disease.

Further, to avoid error, the blood counts on the same patient should always be made by the same examiner. Usually I find it impossible to have more than one leucocyte count made in cases of acute appendicitis, the interval between the time of admission and that of operation being too short. For example, frequently during the course of an afternoon's operations, a case of acute appendicitis, demanding immediate interference comes in, and is on the table with all preparations made within twenty minutes. In these cases, of course, as in cases of strangulated hernia, intussusception, and other emergency conditions, the decision to operate is made solely on clinical grounds, the leucocyte count being all but ignored.

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AGE LIMITATION OF SPORTS.

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A few more remarks on age limitation of sports may be welcome to some of the readers of the *Journal*, and may help to throw some additional light on the question, since they are based upon personal experience and partly upon observations made on a number of personal friends.

I think that the question is a highly important one, not only for the physician as one who is likely to be consulted upon it, but as one whose personal health, welfare, and working power may be greatly increased by giving up the idea that athletic sports, etc., are a privilege of youths and young adults, and by claiming a full share of them for himself at all periods of his life, at all places, and in all seasons. It is, of course, entirely futile to lay down age limits of general applicability, because the extremes are separated by an enormous distance. I saw a man of about twenty-seven the other day—healthy and fairly good looking—whose muscles were so utterly neglected that he could not hang from a swinging ring (at rest) holding on with one hand, whereas I know, on the other hand, quite a number of men in this city who are past fifty and can easily climb a twenty-five foot rope hand over hand. I know many men who get completely exhausted if they run ten or fifteen yards to catch a car, at the same age when others are able to compete in so called Marathon races. Nobody can say that age has nothing to do with the fitness for sports generally and for certain kinds of sports especially, but—next to health—*habit* and *practice* are by far more important.

As to hardening of tissues, rigidity of arteries, etc., as a consequence of age, there is no rule of general applicability. It is well known that Har-

vey found the arteries intact in a man who died at one hundred and fifty-two years of age. Some time ago I had occasion to examine a man of sixty-eight, whose accessible arteries showed no evident sign of sclerosis, and whose pulse was enviably good, so that I should have insured his life—from this standpoint—without any doubt. He died a few months ago, eighty-seven years old, without any acute disease. Nobody can doubt that arteries which are left undisturbed day after day and are just expected to keep up a sluggish circulation, sufficient to supply the wants of a more or less (bodily) lazy business man, will assume a good deal of rigidity at about forty or earlier. But arteries which are made to respond to sudden and energetic calls for increased and lively circulation—without frequent excessive demands—every day will last a good deal longer in consequence of improved nourishment of their walls and more lively excretion of waste and stagnation products. If we stand by the saying "a man is as old as his arteries are," this consideration leads us with necessity to the most general recommendation of "sports" for everybody, everywhere, and at all times. Only—*individualize* and study yourself as well as those recommended to your care. I think there is sport, sportlike pastime and physical exercise for every age, from six to seventy years and over, and for all countries, climates, and circumstances.

I wish those athletic directors who are of the opinion that football should not be played after twenty-five would give their anatomical and physiological reasons fully, and also give the material on which they base their conclusions. Football, especially Rugby, is preeminently a game of endurance. When could it be played better and with greater safety than at that period of life when the skeleton is fully developed, the muscular system most powerful, the vascular system unimpaired in all healthy individuals, the nervous system as quick in action as can be desired, and the will power at its height? I think the years from twenty-five to thirty-five, are the best for the football player, provided his body has had its rights up to that age.

Take such an unexcelled sport as skating (ice skating, I mean). I think it can be indulged in by boys of six as well as by men passed sixty, provided they have practised it right along; by little girls as well as by ladies nearing and may be past the menopause. * A gentleman of this place, who was generally known as "Santa Claus," skated every winter until he died a few years ago well up in the sixties. In Holland, the home of skating, a man past seventy once won a well contested public race over the ordinary Dutch course of 160 Dutch yards. The well known eastern skater, G. R. Phillips, has been able to carry prizes in public competitions of speed and figure skating during a period of thirty years (1867 to 1897), and is far from being "played out." One of the best lady skaters I am acquainted with is forty-five years old, and does not think of giving up, studying new figures and trying new ponds every winter. Skating

stands far ahead of any other sport in my personal estimation. I enjoy it now as fully as I did in 1873, when I studied rolls and easy figures on my first pair of "Acme" skates—then new in the old country—or in December, 1862, when I first tried to slide along on one little skate. I never feel fresher in mind and body than during the—only too short!—skating season, when I can be young with the boys and fool them at catching, hockey, or racing, or strike out on an apparently endless sheet of ice as if I intended to take up the fight through life once more.

Take running for another example, running in all its forms, from the short sprints required in the games of small boys to the mile in four minutes and a half of the athlete in his prime, or to the twenty-five miles of a "Marathon" runner: There are variations and modifications for everybody, and it is a sport that can be indulged in at almost any time and place. You can run "on the spot" near an open window in your bedroom and "work up a sweat" in this way that will satisfy any trainer. And how about age in this case? Well, in a go as you please race from Bordeaux to Paris in France (about 350 miles), which took place a couple of years ago, a man of seventy arrived ninth, in good condition. An example well known in Germany is Professor G. Jaeger, the originator of the so called "normal clothing system" (all wool). When he was a little past fifty, he used to live about five miles from Stuttgart, then the place of his business life. After adopting his all wool clothing system he began to take up running—for reasons not here to be discussed. At first he could hardly cover five hundred yards without getting nearly exhausted and bathed in perspiration. He gradually improved, and was soon able to run the five miles without any trouble. The running (at least as much as the all wool clothing system) changed him from a "stout, short winded, elderly gentleman" to a well formed, active, and lively man "in his best years." Try it! I am very fond of it, and I am sure it would work wonders in many a one who thinks he is only fit for scrap iron. Certainly, a man of fifty must run differently from a youth of twenty, especially if he has not practiced for a long time. His vasomotor apparatus answers slower; he must not start with a sprint and expect to keep up a six minutes to the mile gait for miles. Walk a few hundred yards briskly, then fall into a light trot, and gradually increase your speed until you feel how fast you can go, without having to breathe hurriedly and through your mouth; say, one respiratory cycle to every six steps. I think if every man could make it a rule to run a mile or more daily and to do light gymnastic work for fifteen minutes every day before retiring—living a rational life otherwise—all age limits for sports would have to be moved considerably, and the arteries would show those disagreeable signs of approaching age much later.

I have mentioned gymnastic work. No limit here for anybody, and no excuse! There is an enormous field, say, from the tumbles and giant

strong. However, the patient may have a perfectly clear family history, may have been a perfectly healthy, normal child, may be a well developed person of known good habits, whose occupation or mode of life do not at all predispose to tuberculous infection, with no known chance for such infection, and yet have tuberculosis, as has been shown by von Ruck¹ who made an analysis in this respect of one thousand cases of pulmonary tuberculosis, finding that in fifty-eight patients the family and personal history were absolutely perfect.

Under all circumstances an analysis of present subjective symptoms, even in cases that show slight, local lung changes is of the greatest importance, and I place here, to avoid repetition, the findings as to the first symptoms given by the patient, in the last two hundred and fifty-six cases of pulmonary consumption examined at the Win-yah Sanatorium. Of these cough was stated as the first symptom in one hundred and fourteen cases, or 44.5 per cent; loss of weight and strength in fifty cases, or 19.5 per cent; hæmoptysis in twenty cases, or 8 per cent.; pleurisy in eighteen cases, or 7 per cent.; easily induced fatigue in fourteen cases, or 6 per cent.; various disturbances on the part of the nervous system in 10 cases, or 4 per cent.; disturbances of the digestive organs in eight cases, or 1.6 per cent.; symptoms attributable to laryngeal involvement in four cases, 1.6 per cent.; night sweats in three cases, 1.2 per cent.

It must be borne in mind, however, that comparatively few patients seek institution treatment in their real incipency; in the majority of our patients, the disease had been manifestly present for several, and in some of them for more than twenty years. After such long intervals it is quite natural that the patient should remember only the symptoms that on account of the discomfort they occasioned made most impression on his memory. It is therefore quite probable that the general practitioner who has the best opportunity for really seeing the patients while the first subjective symptoms are present, would, if he made careful investigation and records of his cases find the relative frequency quite different.

An instance of old pulmonary lesions of which the patient had no suspicion or remembrance has recently come to my notice, his first symptom being night sweats. When his history was taken he denied all knowledge of previous illness. On examination of his chest, however, he was found to have an old adhesive pleurisy, evidence of a cavity in the right upper lobe, together with other physical signs which it would seem almost impossible should not have given rise to subjective symptoms.

Hæmoptysis is the symptom which is most alarming to the patient, and which, as a rule causes him to most promptly seek the advice of his physician; its presence is presumptive evidence of pulmonary consumption, and justifies a positive diagnosis, especially so when other signs or symptoms of tuberculosis are associated with it. In certain forms of heart disease and in

other comparatively rare instances, hæmoptysis has no symptomatic relation to tuberculosis, but in such instances the related cause is usually easily demonstrable. The so called vicarious menstruation from the lung occurs practically without exception in patients who have pulmonary tuberculosis, the lesion being perhaps so small, or so deeply seated that physical examination fails to discover it. Tubercle bacilli can rarely be demonstrated in the expectorated blood in such early cases, but careful and repeated search for them in the bloody or mucopurulent sputum that may follow is more apt to be successful.

Cough is present in the large majority of cases of pulmonary tuberculosis even in fairly early stages, and probably more frequently than any other one symptom directs the patient's attention to the fact that he may have something wrong with his lungs. When cough is persistent, it is always suspicious, and the physician should be extremely cautious in giving an opinion that the cough is insignificant and will soon be all right; for the patient is prone to attribute it to any other cause rather than tuberculosis and readily falls in with the suggestion that it may be due to bronchitis, or proceeds from affections of the liver or stomach. Accumulations of gas in the stomach may undoubtedly by pressure produce an irritation of nerve endings sufficient to cause cough, but it is also probable that in such tuberculosis of the lungs is already present, since the observation of cough in diseases of the stomach is extremely rare. The cough in incipient cases may also be due to pressure upon the pneumogastric by enlarged bronchial glands, or to irritation of nerve endings by small deposits of tubercle in the lung tissue or pleura.

In most instances of the early stage it is the result of a local symptomatic catarrh, which is limited to the alveoli and bronchioles of the tuberculous area. In this connection I wish also to call attention to the fact that though readily appreciated and generally known, there are still physicians who allay their own and also their patient's fears, as to the tuberculous nature of a pulmonary affection because tubercle bacilli have not been found in the expectoration, perhaps not after repeated examinations, and wish to remind such readers that while the presence of tubercle bacilli absolutely confirms the diagnosis, the negative result of an examination does not exclude the disease. In order that tubercle bacilli may be present in any secretion there must be an open, ulcerated, tuberculous surface which in the truly early stage of the disease is not the case. Even when such an open surface is present it may be quite small, and the secretions may be insufficient in quantity to enter larger bronchi in order to be mixed and discharged with the catarrhal secretions that are examined, and in the absence of a symptomatic or accidental bronchial catarrh the early stage of tuberculosis of the lung is not accompanied by expectoration. In addition to resorting to the centrifuge in the examination of suspected sputum, various authors have advised the internal administration of potassium iodide, in order to

¹ *Journal of Tuberculosis*, 1, page 75, 1899.

either increase or to cause the occurrence of expectoration by the local stimulating effect of the remedy, and not infrequently this procedure has led to positive results. In young children that do not expectorate but swallow their sputum, the wiping of the pharynx with a cotton probing at the time of coughing has occasionally succeeded in obtaining a specimen while examination of the feces in such youthful patients often succeeds in demonstrating tubercle bacilli, and should therefore be resorted to for differential diagnosis of pneumonic phthisis from other bronchopneumoniae in early childhood.

Fever is usually present even in the very early stage. If the thermometer is used only two or three times daily, its presence may be overlooked, the temperature rise being rarely over 1° or 1.5° , and the duration of the elevation often but a few hours. When possible the more reliable method of rectal measuring of the temperature should be preferred, mouth temperature being subject to so many influences, any one of which would tend to make the findings incorrect. If, however, the temperature is measured in the mouth, no hot or cold drinks or food must have been taken for at least fifteen minutes prior. It should be taken in doors, the patient must not be a habitual mouth breather, the thermometer should be properly placed, and held under the tongue for from six to ten minutes, as thermometers do not usually register correctly in the time claimed for them by the manufacturer. The measurements should be taken every two hours for several days, and in doubtful cases longer.

Under such precautions the variations in the readings in instances of tuberculosis are, as a rule, greater than in health. Usually there is an afternoon rise of from one to one and a half degrees with or without a more or less marked subnormal morning temperature, and when the latter is well marked so that it amounts to a degree or more it is, to say the least a suspicious sign, even though no material elevation occurs in the afternoon above the normal. Liability to undue disturbance from slight causes, such as emotion, mental or physical exertion, the menstrual period in women, likewise characterize the temperature curve in the very early stage of pulmonary tuberculosis, and must be taken into consideration in diagnosis.

Shortness of breath is, as a rule, not an early symptom unless in instances of symptomatic anæmia or chlorosis, or of generalized miliary tuberculosis of the lung. In the localized, chronic form the amount of reduction in the aerating lung surface in the early stage is too small to affect the frequency of respiration.* As a reflex phenomenon from a compression of the vagus or its branches by tuberculous glands, and in rare instances from direct pressure of large gland masses upon the trachea, or upon a large bronchus, dyspnoea may be a marked symptom, especially in children.

Pleural pain is more often an early symptom, though it may be so slight that the patient pays little attention to it, or attributes it to rheumatism, or neuralgia. Evidence of pleural changes may be found even when no history of pain can

be elicited, and this is more apt to be the case when the pleurisy is confined to the apices where motion which induces pain is very slight; occasionally when it is in this position the patient complains of more or less pain in the shoulder which may radiate into the upper arm.

Of one hundred and ninety-seven cases of pulmonary tuberculosis, diagnosed by Upson² in patients who consulted him on account of other ailments and who were unaware of their tuberculous affection, ninety had previously experienced more or less pain in the chest. Various other authors referred to by Grober³ found one third to one half of all cases of so called idiopathic exudative pleurisy to be tuberculous, by resorting to animal inoculation with the pleural exudate.

In not many incipient cases will a consideration of the pulse be of much positive value because of the comparative rarity of habitual rapidity of heart action at that time. It is, however, occasionally observed early in the disease, and when present is apt to be associated with a lowered blood pressure, the pulse being soft and compressible. It is more frequent in persons of a nervous temperament and in young adults and children on account of coexisting symptomatic anæmia, when the heart action is easily excited, by influences that ordinarily are inoperative. Irritation of the pneumogastric from pressure by tuberculous bronchial glands should also be thought of as a cause, especially in children. The observation by so many authors that individuals with a rapid pulse are predisposed to tuberculosis, should according to Cornet be interpreted that such individuals already possess tuberculous tracheobronchial glands, and that the pulmonary symptoms only come into evidence later. Disturbances in the heart action are occasionally due to pleuropericardial adhesions with compression of the phrenic, and in some cases rise of temperature seems likewise to stand in relation. In forty five early cases reported by K. and S. H. von Ruck,⁴ four patients habitually had a rapid pulse, and in all of them the second pulmonary sound of the heart was weaker than the second aortic.

When hoarseness is an early symptom and does not stand in relation to laryngeal catarrh, it is usually due to incomplete approximation of the vocal cords, which is in most cases dependent upon paresis of the recurrent laryngeal nerve from compression by tuberculous glands. It is well to remember when examining the larynx of a patient who complains of hoarseness, that in syphilitic paresis there are mucous patches, redness of the larynx, and a syphilitic history, in catarrhal paresis the cords are red, while in tuberculous paresis the cords are normal and white; also that the patient may have either catarrh or syphilis at the same time that he has tuberculosis.

A susceptibility to catching frequent colds or frequently recurring attacks of acute nasal or pharyngeal catarrh or of bronchitis, are not symptoms of tuberculosis especially, but may act as the exciting cause which starts into activity an

² Latent Pulmonary Tuberculosis, *Medical Record*, 1901.

³ *Archiv für klinische Medizin*, lxxiv, p. 13, 1902.

⁴ Report of 261 Cases of Pulmonary Tuberculosis Treated at the Wauwah Sanatorium, page 13, Asheville, N. C., 1903.

otherwise latent tuberculous focus. The patients frequently date the tuberculous symptoms from a severe cold which persisted for an unusually long time, despite the remedies used for its relief, and which had proved efficacious in other like attacks.

A red or livid line at the margin of the gums has been frequently spoken of by authors as far back as 1850, when it was first described by Frederics. It is said to be occasionally seen as an early sign, to be most common in young patients, and to be often accompanied by a rapid pulse. We, however, have only seen it in adults in the advanced stages of the disease.

In very many incipient cases of tuberculosis, functional derangement of digestion are present and manifest themselves in some instances long before the advent of any decided pulmonary symptoms. They are probably sympathetic and very likely due to pressure upon the pneumogastric or one of its branches from tuberculous glands or deposits of tubercle in the lung. In such cases the stomach contents are usually found normal, and the indigestion disappears together with the tuberculosis under successful treatment of the latter, without the use of remedies especially directed to the digestive organs, which in such cases are at the most only palliative in their action. The appetite often becomes impaired, and the patient's nutrition suffers, he loses weight and strength, is easily fatigued, may be tired the greater part of the time, does not feel rested even after a full night's sleep. This most frequently corresponds to periods of slight elevation of temperature or at all events with a more or less marked local activity or extension of the disease.

Owen⁵ believes that the condition of the tongue may be of diagnostic aid by reason of a persistent yellowish coating which after excluding malaria and rheumatism, justifies him in suspecting tuberculosis.

Symptomatic anæmia as evidenced by pallor of the skin and mucous membranes of the mouth and pharynx, especially in young subjects is often due to vasomotor disturbances, and is then liable to be accompanied by sudden and well marked flushing of the face in connection with emotion, mental and other influences, and is liable to be noted in the early period of the disease. In such cases, as a rule, it is associated with an easily excited heart action, and the red cell count and hæmoglobin per cent. are but little if any below the normal.

After a full consideration of these early symptoms, the further examination of the chest or of the sputum will give confirmation or otherwise of the evidence that has been established. In the physical examination of the chest in the early stage, we should not question the value of the circumstantial evidence already at hand, because coarse signs of local structural changes are not found. Especially should we not look for marked evidence of dulness nor for bronchial respiration and coarse râles, findings which exclude an early stage.

In the formative period of tubercle in the lung,

the changes as revealed by percussion and auscultation are extremely delicate and vary according to the density of the eruption, and according to the existence or absence of catarrh in the area involved. When the area is very small, or especially deeply seated, nothing abnormal can be made out, and the same is true if but few discrete tubercles are scattered through the tissues, even of an entire lobe or throughout the lungs. When the eruption is more dense, and localized, extending peripherally from a primary focus the free permeability of the alveoli is more or less interfered with, which causes the vesicular murmur to become either rough in character, or weak, or both as compared with the opposite locality of normal lung, according as the alveolar structures are still permeable, and according to the degree of symptomatic catarrh. An interrupted character, or that form of respiration called "metamorphosing" depend upon the relative density of the tuberculous eruption and secondary changes of different adjacent areas, being less marked when the changes are slight or absent in the one case, and more pronounced in the other.

In any case when râles are present they are very small, of the crepitant or subcrepitant variety, or but a sense of stickiness may be the impression conveyed to the auscultator's ear. Frequently no signs of moisture exist at all, or may only be elicited by sudden, deep inspiration or cough, and then may occur but once or twice at the particular examination, to be found again upon subsequent trial after several hours, or on the following day. The expiration may also be prolonged.

In latent forms of pulmonary tuberculosis, the physical signs are often much more marked, the percussion note may be relatively dull, and the respiration harsh or even bronchial. Characteristic for latency is, however, the absence of all catarrhal signs. In both the formative early and in the latent stage, but especially in the latter, inspection often gives very valuable information, especially as concerns the compared motion of the two sides. This part of the physical examination receives too frequently but scant attention and sometimes none at all. When the patient's chest is properly exposed to a good direct light, and the physician will observe carefully the respiratory motion, he will rarely miss a retardation of the affected side, and those who have neglected this part of a chest examination will be surprised to find how much it may reveal, even in the very early stage, while the changes in motion are sometimes so well marked in the latent disease that the difference is easily demonstrable to a layman.

As already stated the early stage of pulmonary tuberculosis can be diagnosticated with sufficient certainty when proper and thoughtful consideration has been given to the symptoms and signs described. In the comparatively few instances in which this is not the case, and in such where for other reasons a further confirmation is necessary the tuberculin test becomes our most reliable resource. The method should not be resorted to at all when the physician cannot have the advantage of exact observation of his case.

For some years past the procedure in the Win-yah Sanatorium has been as follows: An exact record for the temperature is made every two hours for two days prior to the injection; this record showing no irregular type of fever, and but slight degree of elevation at any time, the initial dose of one tenth to one half milligramme is administered early in the morning or late at night, preferably at the latter time, in order to bring the period of reaction within suitable hours for the necessary observations.

The patient is cautioned in regard to the avoidance of conditions which might either tend to temporary elevation of the temperature, or to local congestion in the lung or the larynx, the hours for measuring the temperature are kept as before. No evidence of a reaction occurring, the dose is increased, sometimes doubled at intervals of three days if no reaction has occurred. If, however, a rise of temperature of less than a degree has followed an injection, while no local reaction or other general symptoms indicate its relation clearly, then the previous dose is repeated. Five milligrammes is considered the highest dose necessary to exclude the presence of tuberculosis in the early stage of the disease, or in a form of the disease that it is essential to recognize in the interest of the patient.

In the interpretation of the results of the test in pulmonary tuberculosis, Dr. von Ruck considers the local reaction in the lung or larynx of much greater diagnostic significance than the occurrence of fever, unless the latter is well marked and is accompanied with other characteristic general symptoms of decided malaise, aching in the back, bones, and joints, etc. The reason for this attitude is, that the local reaction is the specific effect of the remedy, and the general symptoms stand in causative relation to the local effect which precedes the general symptoms in time; and though not always demonstrable especially in organs and parts not readily accessible to examination in the early and obscure affections of the lungs, when the diagnosis needs the support of this test, it is rarely missed when the examination is made frequently enough and with sufficient skill and care. In the larynx and upon other visible surfaces the local reaction can be observed invariably. In the lung or elsewhere it often is unmistakably evident, though there may be no rise in temperature nor any other general disturbance in the patient's conditions. The local reaction, wherever found, is due to the induced local hyperæmia of tuberculous tissue, which when severe may show all the evidence of exudative inflammation, the latter degree of reaction is, however, to be avoided by the small initial doses employed. In the lung it manifests itself in suspected areas by increase of the auscultatory signs, and areas, previously apparently normal frequently give evidence of the presence of tubercle by the occurrence of rough or weak respiration with or without fine crepitant rales.

In the larynx and upon other visible mucous surfaces local circumscribed hyperæmia with more or less swelling and if the surface is an open one, with increase of the secretions, are the characteristic signs.

Subjective symptoms on the part of the lung are increase in cough and expectoration, sometimes local pain, while irritation, dryness or hoarseness, may attend the local reaction in the larynx. These signs of reaction appear as a rule in six to twelve hours after an injection, reach their maximum a few hours later, and gradually disappear as a rule, within twenty-four hours.

In the absence of a recognizable local reaction at the seat of tuberculous foci, a general febrile reaction occurring, usually, in the course of eight to twelve hours, and, as a rule, within twenty-four hours, is considered diagnostic when it is well expressed.

In my own observations, this conservative and cautious procedure has given remarkably uniform results, and enables the exclusion of tuberculosis with great certainty, which was frequently attested by the nonreaction to subsequent larger doses than five milligrammes, while in but rare instances it was necessary to exceed a second or third repetition of the injection with an increased dose, most tuberculous cases in the early stage reacting to less than two milligrammes. This method has, however, the disadvantage that it takes an average of a week to complete the test, while on the other hand it is so uniformly free from any disagreeable symptoms to the patient, that in so important a question as the one to be determined, the necessary time is of minor importance.

As stated before, a tuberculin test is indicated only then when other methods of inquiry and examination have failed, it should be applied only by physicians who are conscious of being able to rely upon their skill in auscultation and general physical examination, there being otherwise a liability to have failed in the diagnosis by ordinary methods, when in fact sufficient evidence without a tuberculin test was present. When still applied by less practised observers, then the method described should by all means be followed in order that no harm or unpleasantly severe or alarming effects be produced.

In most cases of pulmonary tuberculosis, the physical and other evidence of the disease are, as a rule, well enough marked when the patient consults his physician for the first time on account of symptoms induced by the disease. In the majority of such supposedly early consultations, the diagnosis becomes a practical certainty by the time the history is thoroughly elicited with the necessary minuteness and detail, especially when thereto a temperature record of several days is added. This certainly is not because of any one pathognomonic sign or symptom, but is arrived at from the combination of several, and I do not make this statement to imply that then no further investigation is necessary, but in order to point out that very much can be learned from a proper inquiry, even before we examine the chest or make microscopical examinations of sputum which, when finished, too often reveal an advanced local disease.

I should, perhaps also refer to the diagnostic value of the serum reaction of Arloing and Courmont, which though insisted upon by the authors and other, especially French observers, has gener-

ally been declared unreliable. A certain value is evident from the laboratory records of the Win-
yah Sanatorium where the test is made in all cases. While it is not specific and reliable to a degree as is the tuberculin test, the value of any method including even the latter is not unconditional and absolute, because for this degree of certainty we would have to demonstrate the tubercle bacillus in the secretions or histological tubercle in the tissues. The Arloing-Courmant test is, of course, not available except in a well equipped laboratory, and on that account it would be limited in its application even if specific agglutinins appeared in the patient's serum in the earliest phase of tuberculous disease, which is not usually the case. On the contrary, its occasional presence even in apparent perfect health and its absence in instances of clinically manifest, especially advanced, cases of tuberculosis, can make the occurrence of a positive reaction of no greater than corroborative import, and such a corroborative import it has, especially when it is well marked in dilutions of one part of serum to ten of the test fluid; it then becomes more than circumstantial evidence as to the presence of tuberculosis. Reactions in such a dilution or even in a higher one have also been found to occur in certain early stage cases in which the symptoms and physical examinations were uncertain, and in which either by a positive tuberculin reaction or by the subsequent course of the disease, or both, the tuberculous nature of the case became unquestionably evident.

Since, in a scientifically conducted institution or hospital a blood examination would naturally be included in the examination of patients, the taking of a few additional drops of blood for the application of this test in doubtful cases would add but little to the laboratory work; finding the reaction to the degree stated, I am of the opinion that it would make unnecessary an otherwise contemplated use of tuberculin, and that in such case the serum test would be equally conclusive.

The use of the Röntgen rays, especially with the fluoroscope, has also been resorted to for early diagnosis, and there are those who place considerable reliance on its aid. Its value in the hand of very skillful and practiced observers can, however, be at most one of greater or less degrees of confirmation, and the method has no differential import. In the early deposits of tubercle in the lungs, there is no real consolidation, hence no shading in the fluoroscopic picture could be expected. When the disease has caused structural alterations to a degree that the fluoroscope will indicate it with any degree of certainty, there are, perhaps without exception auscultatory signs, and, as a rule, also percussion changes in evidence. In the determination of the extent of well developed lesions as likewise in questions of the presence or absence of cavity the method is not as reliable as physical examination, but in doubtful cases the two methods can supplement one another, with advantage, and there are instances in which the Röntgen rays can be and apparently have been of real aid. In the doubtful cases of early so called incipient lesions of the lungs, Röntgen rays can contribute little or nothing

to their recognition, and as already stated, nothing whatever as to their differentiation from other pathological alterations.

With the methods considered a diagnosis can be made in every case. The resort to tuberculin as the most conclusive proof when the disease has not yet reached the so called open stage will be but rarely required in that class of cases in which the symptoms which cause patients to consult their physicians are actually induced by tuberculosis of the lungs.

The truly early stage case will more often be found accidentally or as was the case in the observations of Upson, when the physician is especially alert, and extends his enquiries further than is now usual in ordinary medical practice. The example of Upson should certainly be followed as much as possible, his results showing how frequently there could be an anticipation of months, if not years, during which the disease progresses and during which in fact, it might be cured before the patient has suffered further extensions and reached a stage which though early from some standpoints is, yet late as concerns the actual pathological changes to which the symptoms are due, when they cause him to seek medical advice.

A DISCUSSION OF SOME IMMEDIATE AND SOME REMOTE CONSEQUENCES OF CRANIAL INJURIES, BASED ON THREE CLINICAL HISTORIES WHICH ILLUSTRATE THE EXTRADURAL, SUBCORTICAL, AND INTERMENINGEAL TYPES OF INTRACRANIAL HÆMORRHAGE.*

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(Concluded from page 169.)

CASE III.—History. *Old penetrating bullet wound of skull, involving left frontal lobe; epilepsy with vocal aura; operation; extraction of bullet and separation of adhesions; cortical stimulation.*

On October 10, 1900, John R., a sailor, thirty-six years of age, was shot in the head with a .38 calibre pistol. The assailant was nearby—two yards away—and the patient, seeing his intent, ducked his head just as he saw the flash and felt a sharp blow on his forehead. He remembered nothing more until he regained consciousness some six hours later. Though feeling dull and stupid, he found himself in no pain; found also that he could walk, and thinking the injury a trifling one, he took a train to his home, thirty miles away. He remained there a week before seeing a physician; and only on the solicitation of his friends, who were apprehensive about the wound, which was still open, did he finally do so. He was sent to the marine hospital at B—, and a few days later had a sudden convulsion with loss of consciousness. On recovering from this seizure his right face, arm, and leg were found to be paralyzed; he "saw double"; and he could not speak. With the exception of some difficulty in articulation, these paralytic symptoms completely cleared away during the next few weeks. Later on, according to his story, inasmuch as the wound in the forehead did not heal, he was operated upon; some bone splinters were removed from the forehead, together with two fragments of the bullet. The wound discharged clear cere-

* The Wesley M. Carpenter Lecture, delivered at the New York Academy of Medicine, October 18, 1906.

brospinal fluid for some weeks, and though slow in healing, finally closed (December, 1900) without any evidence (from the history) of meningeal infection.

On January 17, 1901, when out walking, he had a severe epileptic attack inaugurated by twitching on the right side of the face, followed by unconsciousness. He reentered a marine hospital at W—, where he remained seven months, having an occasional attack, Jacksonian in character, beginning in the tongue and

pable of sustained mental or physical exertion; and is intolerant of alcohol. On December 31, 1903, he entered Dr. Halsted's service in the Johns Hopkins Hospital.

The following notes are culled from Dr. Carr's careful physical examination at the time of his admission:

"A well nourished, vigorous, intelligent looking man with a good color to his skin and mucous membranes. His temperature is slightly subnormal— 97.6° , and his



FIG. 17. CASE III.—Sketch showing head of operation with extent of exposed cortex and position of craniotomy areas; also direction taken by missile, which had lodged underneath cortical scar indicated at X.

corner of the mouth, and without loss of consciousness; also a few major seizures.

Since then he has drifted from hospital to hospital in search of a cure for his trouble. A "rubber plate" was once put in the skull to cover the defect in the frontal region; it had to be removed a few months later. He has taken, in one place or another, large amounts of the bromide salts, with no consequent diminution in the attacks. They have of late become more frequent and more severe. In addition to these epileptic seizures the patient suffers from nervousness; he has chronic headaches; disturbed sleep; is inca-

pable of sustained mental or physical exertion; and is intolerant of alcohol. (The examination of the thorax, abdomen, and extremities revealed nothing worthy of note.)

"Head.—There are several white, linear scars scattered over the head posteriorly, said to be the result of cuts received when falling in his convulsions. He says that he always falls backward, and of late has been unable to make any effort to protect himself. In the midline of the forehead, at the level of the hair margin, its centre about seven cm. above the glabella and extending slightly more to the left than to the right of the midline, is a depression four by five cm. in diam-

eter and one cm. in depth. This depression evidently corresponds with a bone defect and is covered by a healed cicatrix, which is movable at the edges of the depression, but attached in the centre; radiating from it are several linear scars of the operative incisions. There is no pain or tenderness on pressure. A slight pulsation is visible, but there is no impulse observable on coughing, though the patient says he feels a slight impulse. Around the lower margin of the depression, especially on the right, are several subcutaneous blue stains from powder grains."

"*Cranial Nerves.*—The eyes are normal in every respect; in movements, pupillary reactions, etc. An ophthalmoscopic examination of the fundus showed no pathological changes. There is no disturbance in recognition of odors in either nostril. Movements of the face, jaw, palate, and tongue are bilaterally symmetrical. Hearing is equally acute on the two sides on rough tests (unfortunately no delicate ones were made). No tinnitus; no vertigo. The sense of taste is equally acute on the two sides of the tongue. There is no change in the voice; no asymmetry of position of the muscles of the neck."

"There is no disturbance of sensation on either side of the body, nor any disparity in strength between the two sides. The reflexes, both deep and superficial, are present and react within normal limits."

On January 10th we were able to observe one of his convulsive seizures. He had gone to bed early in the afternoon, complaining of some headache and of feeling badly. The attack began with a peculiar high pitched muttering without distinguishable words; then the face and arm began to twitch; the eyes to move from side to side; he fell out of his chair, foaming at the mouth, and soon his entire body was jerking violently in the characteristic fashion of a severe epileptiform seizure. Consciousness was regained in about thirty minutes, but it was several hours before he was able to articulate clearly. On the following morning he seemed natural in every respect.

Careful observation during the patient's residence had led us to believe that some changes in mentality had resulted from the injury. Though intelligent and rational—distinctly a "good patient"—he was inclined to hold himself aloof from the other men in the ward and was content to sit alone by himself for hours. Neither he nor his friends, however, had noticed any change in his disposition. He appreciated that his memory of names, persons, and places was not as good as before his accident. When being questioned and during the examinations which were frequently made, he would often laugh gently to himself, and finally confessed that he was easily amused over trifles, and it troubled him sometimes to find that he had been laughing over things which should have occasioned him no mirth. Furthermore, he volunteered that things which formerly would have been disregarded would now arouse his sympathy and cause him to cry. Thus, he could not bear to take care of any of his ward companions when they were in discomfort, as it made him lachrymose. When he entered into conversation with those about him, except for a slight impediment in his speech, nothing abnormal was noticeable. The impediment would vary from day to day. At times he could carry on an interested conversation with nothing more than an occasional slur which would pass unnoticed; at other times he apparently had considerable difficulty in vocalizing. The defect in his speech mechanism seemed to be purely vocal in character. He could read well and understandingly, to himself and aloud; he could write well spontaneously and at dictation, and could copy accurately; he could understand spoken language perfectly, but he experienced some difficulty in repeating complex sentences.

An x ray photograph of the head was taken by Dr.

Baetjer after the central and Sylvian fissures had been outlined by measurement on the left side of the scalp, and pieces of silver wire had been held over the lines thus demarkated with strips of plaster. The negative showed a foreign body, presumably the bullet, situated, according to the wires, just below the fissure of Sylvius and underneath the lower end of the postcentral convolution.

Comment.—Until this x ray was taken we had no idea that a bullet remained in the skull, as the two fragments removed at the first operation were supposed to represent the entire missile. It was quite evident from the x ray plate that the foreign body lay close to the skull, for its shadow was almost as sharply outlined as were those cast by the silver wires, whereas the extreme bony outlines of the skull itself, owing to the fact that the tube had been placed close to the head, were indistinct and sprawling. An anteroposterior view, furthermore, failed to show the foreign body at all, as it was concealed, presumably by the dense shadow thrown on the plate by the curving left side of the cranium. This gave us a clear idea of what had been the course of the missile, for, in order to have lodged in this situation, it must have passed obliquely through the left frontal lobe.

An injury to this part of the brain readily accounted for his loss of emotional inhibition and weakened memory, and it is perhaps surprising that psychic disturbances were not more in evidence.¹⁴

It was evident, too, from the character of his attacks, which began with a motor speech aura, followed (at least during his earlier seizures) by a definite Jacksonian march to tongue, face, arm, etc., that some cortical lesion of the lower precentral region was present. Presumably the sudden loss of consciousness which occurred a week after the injury, followed by a right sided paralysis from which he recovered, was due to a secondary hæmorrhage which had taken place in this situation, whether within the brain substance or upon its surface could not then be determined.

CASE III (Continued).—Operation. *Exploratory craniotomy for epilepsy; osteoplastic flap to expose lower central, posterior frontal and upper temporo-sphenoidal regions; separation of corticodural adhesions; extraction of subcortical foreign body; cortical stimulation.*

On January 20th, under ether anæsthesia, an osteoplastic opening was made in such a position as to bring the lower end of the precentral convolution about in the centre of the exposed field. Being so low, it was not feasible to make use of a tourniquet, so that the operation was much more bloody than usual.

The bone flap was turned down by the method which I still follow in the majority of cases, namely, a primary opening at the posterior angle made with a large trephine; another made with a Doyen burr at the anterior angle; separation of the dura from the bone with a long handled, blunt dissector passed through the large trephine opening; the anterior and posterior legs of the omega shaped flap are then cut with Montenegro and De Vibiss forceps; and finally, the upper edge of

¹⁴ Phelps (*Traumatic Injuries of the Brain*, New York, 1897) has called attention to the frequency with which injuries of the left frontal lobe were followed, in his cases, by intellectual and emotional disturbances. H. Bruns, in the contrary, found them more often after lesions of the right frontal lobe (*Beiträge zur klinischen Chirurgie*, 1903). Compare also Mills and Weisenburg, *The Localization of the Higher Psychic Functions*, *Journal of the American Medical Association*, February 3, 1906, p. 337).

the proposed flap is broadly beveled with a Gigli saw (Fig. 17). Owing to the low position of the base of the flap in the temporal fossa, the meningeal artery, which ran in a deep groove, was torn when the flap was broken outward, bleeding was temporarily controlled by pressure, and the vessel was ligated later on after the dura had been reflected.

The external surface of the dura was normal in appearance and in its degree of tension. The membrane



FIG. 18. Photograph of brain of chimpanzee, showing delineation of the excitomotor cortex determined by Sherrington and Grünbaum. Note prominent middle genu.

was opened and reflected in a line concentric with the skin incision. Many adhesions between the cortex, leptomeninges, and dura were thus encountered, evidencing possibly an old local meningitis, though, judging from other experiences they were thought with greater probability to have resulted from the absorption of an extensive subdural hæmorrhage in this situation. The majority of the adhesions could be separated with the blunt end of the scalpel but some of them were vascularized and so dense that they had to be severed with the blade. These more dense adhesions centered at a spot below the Sylvian fissure (Fig. 17) overlying the bullet as we subsequently found.

Though the exposed meninges were thickened and opaque the convolutions were normal in appearance and configuration. The lower end of the central fissure and its bordering convolutions, Broca's convolution, the Sylvian fissure, and the superior temporal convolution, were easily recognized, especially as the broad cleft with its large vessels at the beginning of the fissure of Sylvius was uncovered. About five cm. posterior to the Sylvian point and just below the large vessels which occupied the fissure (corresponding closely with the shadow shown in the x ray), was a cicatricial area somewhat more translucent than the surrounding areas and over which the pia was particularly thickened and where adhesions had been most marked. This circumscribed scar was so dense that it resisted an attempted needle puncture, though no such resistance met the act of "needling" elsewhere.

Under the belief that the cortical irritation might have originated at this point rather than from the scattered adhesions over the more normal appearing brain, it was determined to extirpate the area. So, after picking up a few of the vessels radiating from this point and doubly ligating them with delicate split silk sutures passed on curved French needles, another silk suture for use as a retractor was introduced through the scar by a curved needle, and as this was drawn upon, first by a superficial incision with a knife and then by blunt dissection, the soft brain was dissected away from

the scar, the operator having no expectation of finding the foreign body. Drawing upon the retracting thread during this procedure showed that the direction of the line of cicatricial tissue passed toward the wound of entrance high up on the frontal bone. The linear scar was dissected free to a depth of about one and a half cm. before it was cut off, an act which quite unexpectedly brought into view the lower edge of a dark foreign body, which proved to be the bullet, and which in turn was removed. The slight venous oozing was controlled by a temporary wisp of sterile absorbent cotton. The wound which had been made in the brain was closed by two delicate split silk sutures, which drew together the edges of the thickened leptomeninges.

After pricking the arachnoid in several nonvascular spaces to let out the fluid the exposed cerebral cortex was then faradized, with the results shown in the accompanying sketch (Fig. 17). Chief attention was paid to the lower precentral areas, as it is unusual to have them so well exposed. The first response obtained was from a point at the junction of the precentral and inferior frontal gyri (pars opercularis), where vocalizing sounds were elicited, and each time the cortex was touched there was an expiratory grunt. Each stimulus also was accompanied by a sharp dilatation of the pupils, possibly due to an undue strength of current. Just above this joint movements of the fauces and palate were elicited, and, judging from the effect upon respiration, a spasm of the vocal cords followed each stimulus, possibly due to over excitation of the preceding area. Nearby, separate movements of the pharynx were obtained. Next above this, curiously enough, occurred elevation of the eyebrows, associated with retraction and elevation of the upper lids (a reaction which I have seen in no other patient, perhaps owing to the fact that I have rarely stimulated the cortex

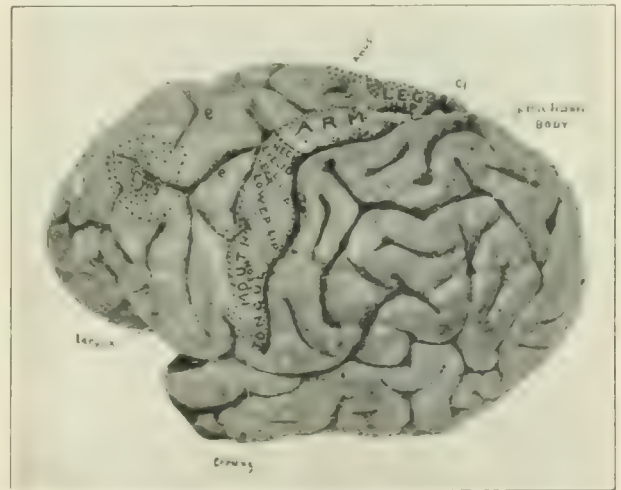


FIG. 19. Photograph of brain of orang (*Simia satyris*), showing delineation of the excitomotor cortex determined by Sherrington and Grünbaum. Note prominent middle and slight inferior genu.

except when a cranial tourniquet has been used, and this would have made the observation impossible).

Up to this point, apparently, all of the movements were bilaterally represented, and a current necessary to elicit them was stronger than that which provoked the simple "automatic" contralateral movements obtained further up in the motor strip. A tetanic spasm, furthermore, was frequently called out.

As in Case II, a lowermost genu was well marked in this patient, and below it movements of the tongue and masticatory muscles (closure of the jaw) were elicited and opposite to and above it the lower facial centres were reached, shown as depression of the lower

lip, movement of the angle of the mouth; and higher up of the ala nasæ, of the upper lip, and of the orbicularis. Stimulation of the remainder of the exposed cortex gave no responses; no movements of the eyes were obtained from the frontal lobe so far as it was bared.

The dura was carefully resutured, the bone flap replaced, and the scalp closed by fine interrupted sutures placed by straight intestinal needles so as to avert the scalp, in the manner I have described elsewhere. No drainage was used.

Comment.—The chief interest in this operative procedure beyond the fact of removing the for-

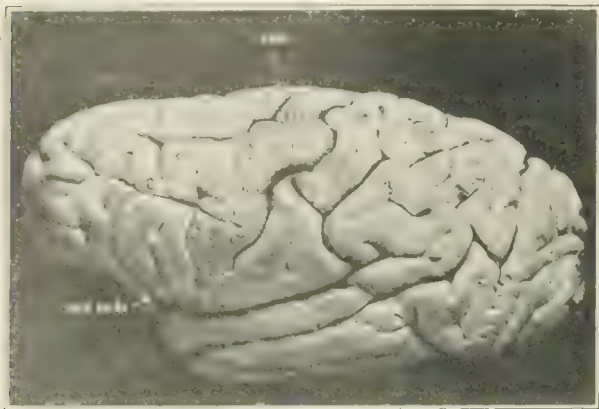


FIG. 20.—Photograph of brain of gorilla, showing delineation of the exposed cortex determined by Sherrington and Grünbaum. Note three genua.

eign body—a spectacular rather than a particularly needful or beneficial measure—was the result of the cortical faradization.

This is one of the few cases in which I have been able to obtain responses which, in a measure, seemed to be akin to the swallowing, sucking, coughing, and chewing movements that are so easily produced in the lower animals, especially in dogs, and which Sherrington has observed in the higher apes (Figs. 18, 19, 20). Evidently these responses come from other districts than those which are demarcated histologically by the distribution of Betz's cells. They probably were elicited from the outlying areas (Fig. 21), which Campbell has designated as "intermediate precentral"—areas which are histologically distinct from those presiding over purely automatic movements.

Campbell is of the opinion that "this particular stretch of cortex is especially designed for the execution of complex movements of an associated kind, of skilled movements, of movements in which consciousness or volition takes an active part, as opposed to automatic movements." They certainly are more complex, more apt to have a bilateral representation, and are with more difficulty brought into action by electrical stimulation than movements from the immediate precentral strip.

The vocalizing and respiratory responses which, in this patient, were interpreted as an indication of laryngeal representation, occurred from the cortical area corresponding to that which Semon and Horsley¹⁵ showed to be asso-

ciated with movements of the larynx in the Macaque.

The palatal movements which were shown by holding the mouth open with a gag and depressing the tongue, appeared for the most part as a strong elevation of the arch of the palate; though occasionally, from adjoining areas, there was a depression of the palate with closure of the fauces. The movement seemed to be purely bilateral, and the uvula would be retracted upward so far as to be invisible. Several times tetanic twitchings of the palate were produced, and once, inadvertently, the discharge ran over into an epileptic convulsion involving palate, muscles of respiration, jaws and face. The cortex seemed unusually irritable and from several centres an epileptiform march was inaugurated after only a momentary contact with the electrode. Contraction of the pharyngeal muscles, so powerful that it looked as though the pharyngeal space was completely obliterated, was obtained several times, a movement which seemed to involve the constrictors of the pharynx alone, though once we thought that it was associated with a complex act which simulated the first stage of swallowing. I have not infrequently seen in the dog a wide dilatation of the pupil, such as occurred here, on stimulating the field where swallowing and masticatory movements are called out.

This case is one of six in which I have found that the centres for the tongue have a representation for the most part below those of the jaw; and movements of the latter, usually as simple closure, may take place without any associated movement of the tongue as protrusion or retraction. It is not unusual, however, for combinations of movement to take place in jaw, tongue, and palate. I have never looked with the laryngoscope for movements in the vocal cords, but

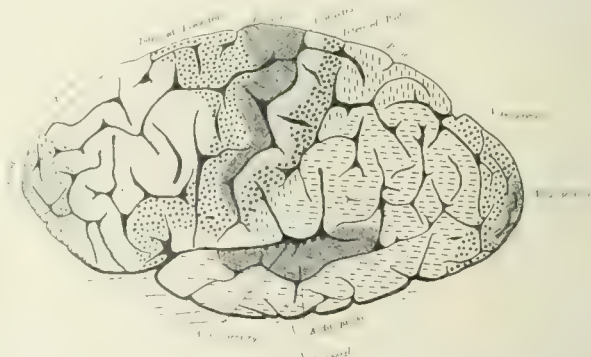


FIG. 21.—From Campbell; to show his intermediate precentral area.

have judged merely from changes in respiratory signs, that the area presiding over their motor activity was stimulated.

One finding of particular interest in this case concerns the low point from which the associated movements of elevation of the eyebrows and eyelids were obtained. The observation was repeated several times and the response noted by all the bystanders, so that there seemed to be no doubt of its accuracy. One hesitates, from a single observation, to dwell too strongly on its significance, but the suggestion is a natural one that the frequent escape from paralysis of the

occipito frontalis (pars frontalis), in cases of hemiplegia in which the remainder of the expressional musculature is affected, may be due to the fact that the motor centres for the brow are remote from those of the rest of the face. It is worthy of note in this connection that in one anthropoid Sherrington ablated the facial area when "a crossed hemiparesis ensued in the lips, cheek, tongue, nasal fold, and lower eyelid (very slight), but not in the upper lid or frontal region."¹⁸

CASE III (Continued).—Subsequent History. *Continuance of attacks.*

The patient recovered well from the operation; his wound healed by primary union. Though subjectively much improved he has never been well enough to return to his seafaring occupation, nor to secure a permanent position as a laborer on shore. The bromide therapy, which had been kept up without avail until the time of the operation, was withdrawn. His epileptic attacks, somewhat modified in character and with a lengthening period between them (a fact which I usually regard as a favorable symptom), continue to occur, the longest interval at any time having been 152 days. They at present recur every two or three months. Though he has drifted from place to place and from hospital to hospital, it has been possible to keep in touch with him up to the present time, owing to a package of addressed envelopes which he carries. A year ago in Wisconsin, after a debauch, he had a temporary attack of acute insanity and was confined in an asylum for two or three weeks; and though he has again returned to work this is doubtless an indication of what his end will be.

Comment.—It has been our experience with cases of traumatic epilepsy of this type—cases of some years' duration and with long intervals between the attacks—to find that they are rarely benefited by the usual bromide treatment, and likewise are rarely "cured" by operation, though the cortical lesion appears to be a focal and removable one. Indeed, almost as much benefit may at times follow upon the gradual withdrawal of the drug from patients who for months or years have been persuaded to saturate themselves with bromide salts, as may come from any surgical operation. I have followed closely for the past eighteen months two patients with traumatic focal epilepsy of long standing who might be considered favorable cases for operation. They had taken bromides for years at the hands of many doctors without any apparent influence upon the number or severity of the attacks. Now, without bromides and with a better digestion and improvement in general health, their attacks occur only at rare intervals. Many others, I am aware, have had similar experiences.

These cases treated surgically are usually benefited—subjectively greatly so—especially if, during the operation, adhesions are found and separated; they are rarely cured.

I am very skeptical in regard to the supposed detrimental influence of a bone defect upon the cortex and consider the attempts—for other than cosmetic reasons—to close these defects by osteoplastic measures, and especially by the insertion of a plate, as was attempted in this patient, as ill judged;

and efforts to prevent the reformation of cortical adhesions by the interposition of foreign substances as even more so.

The cases that I have operated on—some forty in number—have been carefully selected ones, and supposedly have been cases most favorable for surgical measures. It is the rule, after a craniotomy and separation of the adhesions, for the attacks to lessen in frequency and severity. It is rare, except in cases that are operated upon very early, for the attacks to cease altogether. It formerly was my almost uniform custom to discontinue the administration of bromides for some weeks, if possible, before the operation, in order to put the therapeutical benefit of the surgical procedure to its severest test; and unless



FIG. 22. CASE III.—Photograph taken ten days after operation: to show situation of frontal wound of entrance and relation of Rolandic and Sylvian fissures to skin incision, the line of which has been intensified by pencilling. Note low position of osteoplastic flap.

there proved to be some urgent need for the resumption of the drug, it has been permanently withheld.

I think that it can safely be said that in the majority of cases the seizures are greatly lessened in intensity; that in a small percentage they do not recur at all; that a gradual lessening of the attacks in number and severity is apt to be a more favorable sign than their immediate post-operative cessation, lasting over a period of a few months; and that even when the attacks do recur they are controlled by a much smaller dosage of bromides than before the operation. It is to be remembered that I am speaking of the long established cases. An early case, before the patient has had many or severe seizures, may be expected to be benefited in much greater degree,

¹⁸ Sherrington and Grünbaum. Observations on the Physiology of the Cerebral Cortex of the Anthropoid Apes. *Transactions of the Royal Society*. Read June 4, 1903.

he was riding, striking the hard pavement on the back of his head. He remained unconscious for some hours, after which he was found to be aphasic and to have a slight degree of palsy of the right side of the face and of the right arm. In addition to these localizing symptoms, according to the history, he presented the usual phenomena of cerebral contusion associated with a fracture of the base. He was kept in a hospital for about eight weeks, and has practically no memory of the events which occurred at that time. He gradually regained normal movements in the right face and arm, and his motor aphasia, for it seemed to have been largely such, gradually cleared up. Ever since this injury he had been a great sufferer from headaches and confusion of ideas. He could not concentrate his attention upon his work, nor could he read for any length of time without becoming nervous. He had been very neurasthenic and apprehensive about himself.

Soon after his injury, while being taken to the hospital, he had a convulsive seizure. On the 1st of March, 1904, some time after his discharge from the hospital, he began having definite epileptiform attacks. They always were associated with loss of consciousness and recurred every week or two with some regularity. The attacks invariably began with a peculiar "yawing" sound, which the patient made in a conscious effort to speak. This was followed by mumbling, ended with a scream, and consciousness was lost.

In September, 1904, an exploratory craniotomy with exposure of the field surrounding the junction of the precentral and inferior frontal gyri was performed. Meningocortical adhesions were found chiefly centred at the pes of the operculum. These were all separated, many of them being so fine and delicate that they could be broken down by the blunt end of the scalpel, some of them so dense that they had to be divided. The wound was reclosed and healed without reaction. Though much improved subjectively and now almost entirely free from his secondary psychic disturbances, his attacks have continued. They are, however, much less severe, and during the two years since the operation he has had only three attacks. He has been able to return to his former occupation as a storekeeper.

There is a considerable topographical similarity—leaving the foreign body question aside—between the operative findings in this patient and in Case III, both of them probably having had an extensive clot over the area centred by the Sylvian point, the slow absorption of which, by the process of organization, left permanent vascularized adhesions. Had the clot in either case been even fractionally removed soon after the injury, such adhesions as might possibly have formed would in all probability have been absorbed by natural processes, just as they tend to be in other serous cavities—the peritonæum, for example. It is only the dense adhesions from the slow organization of a thick clot which do not finally become removed by Nature's method. A properly conducted operation of itself does not, as is usually supposed, lead to permanent adhesions, as I have had an opportunity of learning experimentally as well as from two or three clinical cases that have come to autopsy some months after simple cranial explorations followed by closure of the dura.

There are reasons, other than the avoidance of cortical adhesions and scars, for doing these early operations: One of which concerns the preservation of normal vision, for we have begun to find from the study of our old cases that even a traumatic choked disc may lead to some permanent

changes in the nerve with narrowing of the visual field—a subject which cannot be entered into here.

In advocating an exploration by the intermusculo-temporal route (even a bilateral one) for cases of complicated basal fractures with suspected subdural hæmorrhage, I am well aware that some extravasations will not be reached in this way. But, as a matter of fact, a large percentage of cranial fractures radiate into the middle fossa, and bleeding coming from the base finds its way usually over the temporal lobe; again, most subdural hæmorrhages from rupture of cortical vessels take place over the paracentral convolutions in adult cases, just as they do in the hæmorrhages which follow cranial traumatism in the new born, and so they are recognizable through such an opening; further, as Duret has shown, the tips of the temporal and base of the frontal lobes are the most frequent seat of contusion leading to hæmorrhage; and finally, be there a possibility of an extradural hæmorrhage from an injured meningeal artery, this vessel and the clot can be approached in no easier way. Then, too, one does not expect to remove all of the clotted blood, and indeed bleeding may be continuing at the time of operation; the design is to remove the bulk of it in order to prevent formation of the dense adhesions which result from Nature's way of removing a large surface clot, and at the same time to decompress in order to avoid the consequences of the early post-traumatic increase of intracranial tension.

In the more obviously traumatic cases in the adult the conditions are in many respects similar to those in the intracranial hæmorrhages of birth and infancy, except that in the latter, owing to the distensibility of the semimembranous skull, an amount of bleeding may take place which in the closed cranium of the adult would be incompatible with life. The brain, too, in the infant is possibly less resistant to the pressure results of an extravasation and receives injuries leading to cavity formations, etc., such as one rarely sees in the adult patients. Otherwise the resultant lesions are much the same. There is absorption of the clot with dense adhesions, and in the great majority of the infantile cases—in sixty per cent. of them, according to Gowers—epilepsy supervenes; in the adult, on the other hand, though epilepsy is more rare, it is estimated that, in fully half of the cases of extensive fracture, psychic disturbances occur as the residual of subdural hæmorrhages, which lessen the unfortunate victim's wage earning capacity even if they do not in the end cause him to be kept in confinement; and doubtless such an end awaits the patient whose history has led to this discussion.

It is difficult to tell how often cranial traumatism is the forerunner of actual insanity. Adolph Meyer, in his excellent paper,²⁰ estimates that these cases represent about one per cent. of the asylum inmates. English²¹ believes that some degree of mental impairment, though rarely suffi-

²⁰ Adolph Meyer, "The Anatomical Facts and Clinical Varieties of Traumatic Insanity," *American Journal of Insanity*, ix, p. 375, 1904.

²¹ T. Crisp English, "Hunterian Lectures on the After Effects of Head Injuries," *The Lancet*, February 20, 1904, p. 485.

cient to be included under the title of traumatic insanity, occurs in over ten per cent. of the patients who have suffered from cranial fracture. And in his exhaustive study of four hundred and seventy cases of fractured skull from Krönlein's clinic, Brun²² has shown that thirty-four per cent. subsequently showed psychic disturbances, though in but a small number of these were there permanent alterations in mentality.

When there is actual destruction of the brain from laceration, particularly in injuries of the frontal lobes, operative measures can, perhaps, do little toward preventing the occurrence of secondary psychic changes, even though, as demonstrated by the second of my cases, there may be apparently complete restoration of function after removing a large subcortical clot; but in the cases of intermeningeal bleeding there can be little doubt but that a properly conducted craniectomy may not only serve to ward off the immediate dangers of compression, but may also be expected to greatly lessen the cephalalgia, nervousness, etc., of the primary posttraumatic state, and to diminish as well the likelihood of the late secondary changes which are so much dreaded.

Afterword.—As intimated in my introductory paragraphs, I have but lightly touched upon some of the many topics which the clinical histories of these three cases of intracranial hæmorrhage have offered for discussion, and such new suggestions as may have been thrown out in the recital are due merely to an amateurish effort to look on the subject from a physiological and neurological point of view. These cases essentially belong to the neurologist from the beginning, not simply to observe, but to treat, and it is a pity that most of those who by education are fitted to direct the operative therapy of these conditions, by lack of surgical experience or from disinclination must needs direct it, at the acute stage when treatment avails most, through the hands of another whose interest and study of the case usually cease with the mere conduct of the operative procedure itself.

REPORT OF A CASE OF URETHROVESICAL CALCULUS WEIGHING 84½ GRAINS.*

By SAMUEL E. EARP, M. S., M. D.,
Indianapolis,

Professor of Practice of Medicine, State College of Physicians and Surgeons; Consultant to St. Vincent's and Protestant Deaconess' Hospitals, etc.

That the female urethra is susceptible of great divulsion is well known; but that the passage through it, unaided by art, of a calculus of such enormous size as that in the following case, seems incredible.

Urethral calculi are much more common in middle life than in advanced age and are very rare in females. The specimen shown is evidently an urethrovvesical calculus, the length, contour, and shape demonstrating that fact. It will be observed that about two inches of the lower portion of the specimen occupied the distended ure-

thra and that it forms a cast of that tube as distorted by its presence, from the bladder to the meatus urinarius its anterior concavity and posterior convexity corresponding to that of the urethra. It is also apparent that a little more than one third of the upper portion (corresponding, approximately, to that portion above the cord by which the specimen is suspended as shown in the photograph) occupied the bladder. You will note the "footprints" of an extensive ulceration of the urethra upon the lower anterior part of the specimen.

CASE.—Mrs. B. aged forty-seven, mother of four children, youngest of whom is thirteen years. Patient



FIG. 1.—Shows concave surface, exact size.

has had diseases incident to childhood; for fifteen years she has had locomotor ataxia, and has used an invalid's chair for ten years. Her last menstruation was five years ago, and two years since there was a slight uterine hæmorrhage which lasted for three days. Within a period of five years she has had two attacks of remittent malarial fever and occasional attacks of dysentery. For five years after she became an invalid the bladder was washed out at irregular intervals, and catheterization was necessary several times a week and sometimes every day. Five years ago and to the present time the discharge from the bowels and bladder were involuntary. For three years there was retention of the urine, and the daughter who was familiar with catheterization was unable to pass the catheter on account of an obstruction, but no physician was notified of the fact.

At these times of retention there was some pain, but by experience it was found that the urine dribbled away when the patient assumed a position on her left side, and that pain would then be relieved. Since the patient had been an invalid for so many years it was not

²² HEN. BRUN. *Der Schädelverletzung und seine Schicksale. Beitrage zur klinischen Chirurgie*, xxxviii, p. 192, 1903.

* Read before the Indianapolis Medical Society, October 2, 1906.

thought necessary to call the attention of a physician to this condition. On account of the involuntary discharge from the bowels and bladder the patient used a pad supported by bandages at all times. During a visit to the daughter July 28th, 1906, Mrs. B. used these words in directing her conversation to me: "Last night I had intense pain in the region of my privates, and asked that my cloth be loosened, and the pain became more intense, and when loosened the sec-



FIG. 2. Shows the curvature.

ond time the pain was still greater, and I asked my daughter to apply a dry napkin. When the cloth was removed a hard substance came away with it, which you will find in that paper on the table."

Upon examining it, it was evident that it was a phosphatic stone. I made an examination of the patient and found negative information regarding uterus, vagina, and rectum. The vulva showed three slight lacerations, and the urethra was dilated one and one half inches and admitted my index and second fingers without pain. The external portion of the urethra was severely lacerated in several places from which there was some hæmorrhage. The stellate laceration of the meatus, extending down into the urethra, was evidently caused by the great size and angular lines of the upper part of the calculus retarded in its passage, for a considerable time, by the pad. An examination of the parts made in the presence of Dr. W. B. Ryan on August 13th, showed the lacerations entirely healed, yet contraction of the parts was so slight that it was still possible to insert the index and second fingers into the urethra without any pain. The lacerations externally were caused by the stone projecting with its cutting surface against the mucous membranes, held there by the napkin which would necessarily follow from pressure and change of position.

The treatment of the case is probably of very little importance. It consisted of antiseptic applications and

washing out of the bladder daily with the boric acid solution and lysol solution. The urine passes involuntarily, as was the case before the passing of the calculus. Upon examining the history of the case it would appear that the calculus had been in the urethra for at least three years and perhaps dating before a time when the daughter found an obstruction during an attempt at catheterization. As far as the information that I have been able to obtain, this is the largest urethral calculus of which there is any record. I showed the specimen to Dr. W. N. Wishard and the following are his measurements: circumference four and one eighth inches, length three inches, greatest diameter one and one eighth inches. Its weight is 84½ grains.

Since this paper was read before the Indianapolis Medical Society I have divided the calculus with a fine steel saw and find that it has some additional points of interest. The concentric layers surrounding two nuclei would suggest that a small calculus had passed into the urethra, and that the remaining spongy portion with an irregular and hard line running through it was a grad-



FIG. 3. Shows the two sections with three nuclei representing what may have been three original calculi; calculus partially broken in making section.

ual formation. At the cornu there is another compact point. Figure 3 is self explanatory, and hence further comment is unnecessary.

2412 KENTUCKY AVENUE.

The Nobel Prize in Medicine for 1906.—The Nobel prize in medicine for 1906 has been divided between Professor Camillo Golgi (Pavia) and Professor Ramon y Cajal (Madrid).

A MODIFIED ENDOSCOPIC TUBE, AND ENDOSCOPIC LACUNAR KNIVES.

BY FREDERIC BIERHOFF, M.D.,
New York.

Attending Physician, German Dispensary, Dermatological Department, etc.

Where infected or inflamed lacunæ or glands are present in the urethra, in a case of chronic urethritis, I have found that the most rapid results are obtained with the irrigating Kollmann-Frank dilator, after these lacunæ or glands have been slit open, along their entire length. By this act of slitting, the blind pockets which these lacunæ or glands form in the urethral wall are transformed into ordinary open surfaces, and become readily accessible to the action of the dilator, and the solution used in connection therewith.

Where these lacunæ or glands are present in the deeper and middle parts of the anterior urethra, I have

found the knives, to be described further on in this article, to be of great service to me, when used in connection with the ordinary endoscopic tube. Where, however, they are close to the meatus, or where paraurethral passages, which open at either side of the meatus, are infected, I have found the ordinary endoscopic tube to be of little value, and, therefore, had the Kny-Scheerer Company construct a fenestrated endoscopic tube for me.

Endoscopic Tubes.—This endoscopic tube is of the same length as the ordinary tube ($5\frac{3}{4}$ inches), but is fenestrated upon its upper surface by a slit two millimetres in width. The endoscopic tube is inserted in such a manner that the fenestrum lies directly opposite the orifice of the infected paraurethral passage. The rest of the tube forms a pro-

tecting sheath for the balance of the wall of the urethra. The knife may then be inserted into the duct of this passage, and it may be slit open, along its entire length into the lumen of the tube, without any danger of wounding any part of the rest of the urethral wall; or a fine probe may be passed along the entire length of the paraurethral passage, and the incision made upon this probe.

The tubes may be had in varying sizes, as is the case with the ordinary endoscopic tubes. The obturator has a little shoulder, which fills out that part of the slit which it occupies in such a manner that upon the withdrawal of the obturator, the mucous membrane of the urethral wall is not in danger of being caught between the edge of the obturator and the edges of the slit.

Lacunar Knives.—These are two in number—a sharp pointed and a probe pointed. The former of these is for use in the slitting open of lacunæ, or glands, whose outlets are very small, the latter for use in those having larger outlets. They are modifications of Gruenfeld's endoscopic knives. Unlike these, however, the cutting surface is directed downward, so that better leverage may be obtained; the blades are also shaped differently. The shaft of each knife should be 6 inches in length, and the handle is bent down, so that the oper-

ating hand may not obstruct the field of vision. The blade, in each instance, should be so formed that while the cutting surface is parallel to the shaft of the instrument, the back of the blade slopes away at an acute angle from the point. This is done so that, upon being inserted into the infected gland, or lacunar orifice, the tendency of the incision shall be downward and toward the lumen of the endoscopic tube.

I have used these instruments, particularly the knives, since the past year, and have found them to be of great service to me in facilitating the treatment of cases of subacute or chronic glandular urethritis.

51 AND 53 EAST FIFTY-EIGHT STREET.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LVIII.—How do you treat acute synovitis? (Closed January 15, 1907.)

LIX.—How do you treat phlegmasia dolens? (Answers due not later than February 15, 1907.)

LX.—For what purposes and in what manner do you use opium in preference to any of its constituents or derivatives. (Answers due not later than March 15, 1907.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable, no one answer to contain more than six hundred words.

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of \$25 for the best essay submitted in answer to question LVII has been awarded to Dr. J. Ballagi, of Homestead, Pa., whose article appeared on page 171.

PRIZE QUESTION NO. LVII.

THE USE OF MERCURY IN SYPHILIS.

(Continued from page 173.)

Dr. Walter P. Porcher, of Charleston, S. C., remarks:

I wish to quote an opinion expressed by Sir Jonathan Hutchinson, F. R. S., LL. D., London, England:

"I still use one form of mercury to the almost total exclusion of all others, and still prefer to modify the frequency of the dose rather than the dose itself. Respecting gray powder (hydrargyrum cum creta) I feel perfectly certain from long experience that it is efficient and that fewer inconveniences attach to its employment than to any other preparation of mercury. . . . Thus, although I have not the slightest doubt as to the efficacy of mercurial inunction, mercurial baths, hypodermic injections of mercury, or the internal administrations of any of its numerous salts, I never for ordinary cases use any one of them. A pill containing one grain of gray powder with enough opium to prevent diarrhœa or griping is my almost invariable prescription. This, the patient is instructed to take at

intervals varying from three times a day to every three or even every two hours, according to its effect upon him. He is at the same time instructed to abstain from fruit, green vegetables, and everything else in the least likely to cause diarrhœa."

The two most salient points about this combination are: First, the wonderful tolerance which patients show for it, and, secondly, the great effect which the addition of a small amount of opium to the dose has in hastening the rapidity of the cure and in producing the full effect of the mercury. There is perhaps no other combination which can be administered for such a length of time without disturbing the digestion or producing salivation. Patients will not only take on flesh very rapidly under its influence, but will state that they have never enjoyed such good health as when taking the little powders. The yellow mercurous, and the red mercuric iodide, bichloride, or the mild mercurous chloride, will all upset the digestion if continued for a length of time without any other addition. Again, in mercury by inunction or hypodermically or by mercurial baths the tendency to salivation is much greater and more difficult to avoid. The well known effect of opium in limiting inflammation and causing absorption of inflammatory exudates and adding to the effect of other drugs is no where so well exhibited as in the cure of tertiary ulceration in combination with gray powder. No preparation of the iodides will act anything like so quickly in tertiary manifestations in the eye, ear, nose, and throat, as this combination will. When patients absolutely deny any specific history, as they so often do and yet show signs of the disease I invariably order the powders, very often increasing the dose of gray powder to three grains and limiting the amount of opium, according to the age, etc. I rarely get any but the most gratifying results. In fact, so often have I been misled by false statements that I have almost ceased to ask for any specific history, but order the powders when I have reason to suspect the disease.

Of course I do not positively affirm that every case which is benefited by mercury and opium is necessarily syphilis, but we may certainly have strong grounds for suspicion when the usual lesions are present. There are many forms which do not yield to mercury even when it is pushed to the extent of salivation. In these cases we must either substitute some form of the iodides or resort to the mixed treatment of mercury and the iodides. The effect of mercury and opium is most enhanced by the most liberal regimen of diet, fresh air, exercise, etc., only excluding such articles as may cause diarrhœa and griping. I always caution patients that when the bowels are slightly torpid then is the best effect obtained. There are certain patients who cannot tolerate mercury in sufficient quantities to cure the disease, and there are others who are equally intolerant of the iodides. If the susceptibility takes the form of diarrhœa it can usually be met by an increase in the amount of opium with diminished quantities of gray powder. If the mercury should produce ulcers on the cheeks or tonsils we must

stop it entirely for a while and give tonic doses of iron and quinine, or the iodides until the system is purged of the mercury.

Dr. Henry W. Lead, of New York, states:

Mercury should not be administered for its constitutional effect in the treatment of acquired syphilis during the primary stage, and not until the diagnosis is made positive by the appearance of the secondary rashes. During the primary stage, the general health, also the condition of the teeth, and mucous membrane of the nose, throat, and mouth should receive careful attention, in order that the patient may better withstand both the mercurial treatment and the ravages of the disease.

The initial lesion or chancre should be kept absolutely clean by irrigating with bichloride solution, 1 to 2,000 at least twice daily, and covered with absorbent cotton or gauze saturated with the same and changed frequently, or after the irrigation dust with equal parts of calomel and boric acid. At the beginning of cicatrization apply 50 per cent. of blue ointment, three times daily; this hastens its disappearance.

At the beginning of the secondary stage, when the diagnosis is positive, give mercury in moderate doses and increase daily until the premonitory signs of ptialism appear, then withdraw the drug for two or three days, and then continue in slightly reduced doses, keeping the patient under close observation. The yellow mercurous iodide, $\frac{1}{6}$ to $\frac{1}{2}$ grains, given three times daily in pill form, is one of the best preparations. The red mercuric iodide given in the same manner, from $\frac{1}{40}$ to $\frac{1}{16}$ grain doses, also yields excellent results, while others do better on the bichloride or the gray powder. It is usually necessary to prescribe tonics, such as iron, quinine, strychnine, gentian, etc., to overcome the anæmia which is apt to be associated in these cases. After a few weeks I discontinue the internal use of mercury and use inunctions; this not only gives the constitutional effect, but the local as well, without as great a tendency toward gastrointestinal disturbances. Blue ointment should be used, and put up in gelatine capsules or oiled papers of 30 to 70 grains each, which is the amount required by the average patient. The rubbings should be given every other night, sometimes oftener. Divide the body into ten areas, taking a different one for each application. Clean the skin thoroughly and rub the ointment in from twenty-five to thirty minutes. The first area should not be washed off until it is time to apply the ointment to the second. Continue in this manner until the entire body has been covered, then wait four or five days before beginning another course of the same treatment. A warm bath taken once a week favors elimination of the mercury. For lesions of the face and scalp, white precipitate ointment is preferable. About the beginning of the second year potassium iodide should also be given in solution with the red mercuric iodide or the bichloride of mercury. I prefer to give inunctions and the potassium salt alone internally, either in

milk or essence of pepsin, beginning with 10 drops of saturated solution, three times a day, and increase 1 drop daily until symptoms of iodism appear; stop treatment three or four days, then continue under close observation. It generally takes from two and a half to three years to effect a cure.

Hereditary syphilis is best treated during the first few months by giving calomel gr. $\frac{1}{8}$ to $\frac{1}{4}$, or $\frac{1}{8}$ to $\frac{1}{2}$ gr. of the gray powder in a little sugar of milk, three times a day. After this inunctions 10 to 15 grains daily of 50 per cent. mercurial ointment should be used, as the internal administration of mercury in children is usually followed by gastric disturbances.

I find these treatments the most satisfactory methods of using mercury in the treatment of syphilis.

Dr. Walter T. Dannreuther, of New York, observes:

Assuming the treatment to be begun at the time of the appearance of the skin eruption, I immediately order a course of inunctions of unguentum hydrargyri, 33 $\frac{1}{3}$ per cent. One application is made each day, alternating the region to which it is applied, until the whole body below the neck has received its share. The inunctions are omitted every seventh day, when a hot bath is given. The gums becoming tender and a mild ptyalism appearing is the indication for discontinuing the inunctions. All treatment is now stopped for two weeks. The use of hydrargyrum iodidum flavum, gr. $\frac{1}{6}$, t. i. d., is then begun, and I prescribe one pill for the first dose, increasing one pill every third day until the point of tolerance is reached, evidenced by diarrhoea and cramps. The maximum dose is continued for six months, at the end of which time the pills are discontinued. I then repeat the whole of the preceding treatment up to the time of discontinuance of the pills. Two courses of mercury inunctions and two courses of the yellow mercurous iodide pills have now been given. I then order a third course of inunctions, immediately after discontinuing the second course of pills. After the interval subsequent to this course of inunctions I do not use yellow mercurous iodide, but corrosive mercuric chloride, gr. $\frac{1}{15}$, t. i. d. Also potassium iodide, gr. 30, t. i. d., two hours after meals. I prefer giving this latter in milk, with essence of pepsin, 3i. This treatment is also continued for six months. A fourth course of inunctions is now ordered, after which the same treatment that follows the third course of inunctions is employed.

The patient can probably be discharged as cured by this time, but it is best to keep him under observation for another six months. The success of this treatment depends upon retaining the patient's confidence, his faithfulness in carrying out the prescribed treatment, and his willingness to accept and follow our advice regarding his general hygiene. The consensus of opinion now seems to be that it is not good practice to begin the administration of mercury until the commencement of the secondary stage (appearance

of rash). Its use before this time delays the appearance of the skin eruption and renders the patient more liable to tertiary affections. Besides, the appearance of the rash more fully establishes the diagnosis, and convinces the patient that he has syphilis. Of course, the early appearance of tertiary lesions is an indication for the early employment of potassium iodide.

Dr. Adolph Rostenberg, of New York, writes:

There are three methods in applying mercury in syphilis: 1, The inunction method; 2, internal medication; and, 3, injections.

The first method is, to my mind, the least reliable, as far as dosage is concerned, as we do not know in this way how much mercury will be absorbed. Besides, the betraying odor and the greasy feeling of the salve is most objectionable to the patient.

The internal medication has this drawback: The intestinal tract comes in direct contact with the mercurial preparation and is therefore more subjected to irritation, and toxic symptoms will easily result.

The third method is the ideal one, a method growing constantly more in vogue, e. g., the injection of insoluble mercurial salts. By this method a medicinal depôt is established in the tissues and the salt becomes slowly converted into a soluble compound and thus becomes gradually absorbed; only in very bad cases where destruction of vital organs is to be feared, and immediate results are required, I apply a soluble mercuric preparation, like sublimate. The best insoluble mercurial salt, in my estimation, is the salicylate of mercury. I use a 10 per cent. suspension of salicylate of mercury in petrolatum. Each drop of this solution contains 0.1 of a grain of the salicylate, or 10 drops equal $\frac{1}{2}$ grain of metallic mercury, thus offering exact knowledge of the applied amount.

The best syringe to use is one with a glass barrel, so that the fluid introduced may be seen. The graduation should be distinct enough to allow a drop dosage. The needle should be about 1 $\frac{1}{2}$ inches long, so as to be able to enter the muscular tissues; it should be connected with the syringe by a slip joint to allow easy detachment. The best place for the injection is the gluteal region, in the centre of the gluteal mass, about midway between the intergluteal fold and along the inner third of the region bounded by the intergluteal fold and a perpendicular through the great trochanter on either side. I start with five minims of this solution and gradually increase to ten. As a rule, one application a week will suffice, except in bad cases. A slight infiltration usually will have disappeared by the time of the patient's next visit. The pain, caused by this method, if executed correctly, is very slight, and the patient will hardly object if he has once become accustomed.

It is almost needless to say, that in all three methods of applying mercury all precautions against mercurial poisoning, especially mercurial stomatitis, should be taken in the ordinary way.

(To be concluded.)

Correspondence.

LETTER FROM TORONTO.

Dr. Osler's Visit.—A Case of Disciplining.—The Board of Trade and Tuberculous Disease.—Pathology in the Lunatic Asylums.—The Hamilton and London Medical Societies.—Deportation of the Feeble Minded.—The Hospital for Sick Children.

TORONTO, January 12, 1907.

During the latter half of December Dr. Osler spent several days in Toronto. He met the profession here generally on three separate occasions. Dr. Reeve, the president of the British Medical Association, held a reception one evening; the Ontario Medical Library, one afternoon; and the Toronto Medical Society, one evening. At the Ontario Medical Library Dr. Osler unveiled an oil painting of the late Dr. J. E. Graham, formerly professor of medicine in the University of Toronto and a man of wide reputation. The portrait, admirably executed by Mr. J. W. L. Forster, of Toronto, was presented to the library by the widow and son, Dr. J. S. Graham. It was accepted on behalf of the library by the president, Dr. J. F. W. Ross. The late Dr. Graham was a senior when Dr. Osler attended lectures in Toronto, but he stated that he was early brought into intimate relationship with him through his association with Dr. Osler's teacher, the late Dr. Bovell. In term, every Saturday Dr. Osler, Dr. Graham, and Dr. Arthur Jukes Johnson, of Toronto, converted Dr. Bovell's study into a laboratory and did microscopical work. For many years after graduation they did not see much of each other, but they met then every year at the annual meetings of the Canadian Medical Association, in which both always took an active part. Addressing the Toronto Medical Society one evening, Dr. Osler specially dwelt on the subject of the proposed Academy of Medicine for Toronto. He advocated this strongly, stating that there were three important factors in the evolution of medical thought—medical schools, medical societies, and medical journals. He considered that the three medical societies, the Clinical, the Toronto Medical, and the Pathological, now doing work in Toronto, might well be amalgamated, and then that their united force would tend well toward improving and perfecting medical matters in Ontario. It is understood that a plan of amalgamation is now prepared, as well as a constitution, which will provide for an Academy of Medicine, which will also embrace the Ontario Medical Library as a part thereof. Meetings will be arranged for one night a week, a medical night, a surgical night, a pathological night, and a general meeting night. Dr. Osler offered to subscribe \$100 a year with four others for five years to conduct this Academy of Medicine to a successful issue.

There is a case which has excited a great deal of interest, both professional and lay, throughout the Province of Ontario. Dr. Alexander Crichton has been a practitioner in Ontario since 1892, in which year he secured his license from

the Ontario College of Physicians. It came about that some three years ago he began sending out through the mails preparations for medicinal purposes, the ingredients of which he kept to himself. For this alleged unprofessional conduct he was disciplined by the Ontario Medical Council and his name ordered to be struck from the register of members. It does not appear quite clear, although this was ordered, that it was done, but following the report of the same in the public press, Dr. Crichton took his case into the courts to be reinstated. The courts have just recently allowed his appeal and have ordered that his name be restored, if it ever was expunged. Chancellor Sir John Boyd remarked that the Ontario Medical Council did not appear to be invested with such extensive powers as the Ontario Law Society in disciplining its members, and further stated that, although Dr. Crichton was wrong professionally according to the medical code of ethics, he was within his right legally. The order of the court for reinstatement was given without prejudice to subsequent inquiry. On the face of it, Dr. Crichton has apparently beaten the Ontario Council, which shows that a body of its composition and standing should proceed with a great deal of caution and circumspection in cases of this character. If, however, it is allowed to stand at this, and medical men are allowed to advertise cures for the grippe, rheumatism, and piles, then the profession of Ontario will apparently be on the ragged edge of what may later on be a regular campaign of such inimical methods of securing practice and money. The ascendancy of charity and the total lack of all business methods pursued by practitioners less than a decade ago, when practitioners were wont to boast that they never sent a bill, may be responsible for a great deal of the "starving" which prompts to the greed of gain.

The executive of the National Sanitarium Association of Canada has furnished some rather startling information to the Toronto Board of Trade, which in its turn has handed said information on to the Federal government at Ottawa. This information is to the effect that the inspection of diseased or other immigrants at ports of entry in Canada is not being carried on so efficiently as could and should be done. It is stated in the last official report that, of the 243 patients treated in the Muskoka Free Hospital for Consumptives at Gravenhurst, Ontario, eighty-three, or one-third, were of foreign birth; and that analysis of these individual cases shows that a goodly percentage of them left their homes for Canada, the victims of tuberculosis. Facts are also submitted from the Toronto Free Hospital for Consumptives at Weston, Ontario, which receives advanced cases. Of the 134 patients who were cared for during the past hospital year, fully fifty per cent. were born outside of Canada. Thirty-five per cent. of these came from Great Britain and Ireland, 2.9 per cent. from other British possessions, and 11.2 per cent. from foreign countries. In view of these facts, which certainly show a laxity somewhere, the Toronto Board of Trade has memorialized the Dominion govern-

ment to take immediate steps to prevent the embarkation of emigrants for Canada who suffer from any pulmonary or contagious disease, and to establish a most rigid immigration inspection system.

An important advance in psychiatrics has been instituted in the Ontario Provincial hospitals for the insane. Dr. C. K. Clarke, the progressive alienist in charge of the Toronto Provincial Hospital, is responsible for getting the Ontario government to begin in this direction. He has had appointed Dr. J. H. Fitzgerald to the position of pathologist and director of the pathological laboratory in this hospital, who shall devote all his time to the work in hand. Dr. Fitzgerald, since being graduated from Toronto University two years ago, has prosecuted studies in psychology and neurology in Johns Hopkins and other hospitals of the United States, and comes to the position fresh from their clinics. No doubt the government will early consider the advisability of following up this matter and appointing others to the other Provincial hospitals.

The following officers, recently elected, are conducting the Hamilton Medical Society through the present season: President, Dr. Ingersoll Olmsted; vice-president, Dr. D. G. Storms; corresponding secretary, Dr. Davey; recording secretary, Dr. Hess; treasurer, Dr. W. J. McNichol. The London (Ontario) Medical Society recently elected the following officers: President, Dr. E. Seaborne; vice-president, Dr. W. J. Stevenson; secretary-treasurer, Dr. U. E. Bateson.

Under the Department of Hospitals and in accordance with the provisions of the Dominion Immigration Act, the Ontario government is deporting all persons with insanity and feeble mindedness who have not been in the Province two years. It is stated that each individual so deported saves the Province about \$2,000.

Mr. Cawthra Mulock, Toronto's youngest millionaire, has just given \$10,000 to the Hospital for Sick Children, Toronto.

Therapeutical Notes.

Tinctura Oleæ Europææ.—This tincture, prepared from dried leaves of the olive tree with 60 per cent. alcohol, is used by Sawyer as a general tonic as well as a febrifuge and antiperiodic in place of tincture of quinine, in doses of fifteen to thirty drops. A fluid extract made from fresh leaves has also proved very efficacious, but only five drops of this is used.—*Pharmazeutische Zeitung*.

Sodium Fluosilicate as an Antiseptic.—Mayo Robinson confirms the claims of Thompson that sodium fluosilicate has antiseptic properties. In powder form, it is a caustic, and it can be used locally for this purpose. In five per cent. solution, however, it is free from irritating effects, and therefore can be safely used as an antiseptic for injection into closed cavities. As a dressing for wounds, it is applied on compresses of absorbent cotton. It also has deodorizing properties, making it serviceable for injection in cases of cancer of the uterus, or of the rectum. This salt

has the inconvenience when in strong solution of attacking the surgeon's instruments, and the enamel of porcelain lined utensils. The weak solutions, however, have this effect to a much less degree.—*Journal de médecine*, December 16, 1906.

Neuralgia in Obese Patients.—Raymond, in a clinical lecture at la Salpêtrière (*La Quinzaine thérapeutique*, November 25, 1906) presented a patient suffering with neuralgia of the median nerve, and called attention to the fact that the man was a large consumer of food, and was decidedly obese. Affections of cutaneous nerves resembling neuritis or acroparæsthesia in obese persons may be really due to autointoxication. He, therefore, dieted the patient and progressively diminished his weight until he had lost twenty-seven kilogrammes. From this time the patient began to improve and soon was entirely restored, so that he resumed his occupation as clerk. This is regarded as a more rational method of treatment than the usual symptomatic one with anodynes, although it does not entirely exclude them when the pain is intolerable.

Asthma and Its Ætiologic Treatment.—Brugelmann (*Therapeutische Monatshefte*, November, 1906) describes asthma as a tracheobronchial spasm from irritation of the respiratory centre. This irritation may be traumatic, reflex, or toxic. In each case careful examination into the ætiology of the attack is necessary, as this is very varied and often escapes the attention of the physician. For example, many cases are due to a plantar hyperidrosis, and will resist the classical treatment if we neglect the treatment of the local causes. We should also look carefully for asthmagenic points in the rhinopharynx, and render them insensible. Care should be taken not to give a number of hygienic and dietetic directions, which may tend to favor the phobia by autosuggestion. Climatic treatment should not be indiscriminately advised, but each case should first be carefully studied and appropriate local treatment instituted.

The Mutual Relation Between Menstruation and Psychoses.—Salerni has studied this subject in the Venetian Asylum for the Insane, and considers it from two points of view: 1. As to the influence the menses, normal or abnormal, have upon the onset and course of mental diseases, he thinks that the connection between menstruation and psychoses is much rarer than has been supposed, and when such a connection seems to exist, other factors are invariably present, such as predisposition, exhaustion, or infection, and that the anomalous menstruation is never the chief cause. On the other hand, the menses often influence the course of a mental disorder by the various symptoms elicited by the nervous and psychical reaction attending them. 2. As to the derangements of menstruation met with in the various forms of mental disease, the occurrence of menstruation in the insane is, as a rule, irregular; but this irregularity is usually a coincidence, and without any causal relation save in the specific menstrual psychoses. Examining the several forms of mental disease, the relation of menstruation to those which are periodic is evident enough.—*Il Poli-*

clinico, through *The British Gynecological Journal*, November, 1906.

The Effects of Kumyss in Malarial Subjects.

Rodzevitch (*Bulletin medical*, No. 68, and *La Tribune médicale*, December 22, 1906) reports that kumyss has the power of revealing a larval malarial infection. Thus, within six to twelve hours following the ingestion of one or two bottles of kumyss, a malarial subject will invariably have an attack of typical chills and fever. If quinine be then given in a daily dose of 1 to 1.50 grammes for two or three days, and temporarily continued twice a week, the further administration of kumyss will not produce the phenomena of chills and fever as before. This curious property of kumyss of revealing hidden malarial infection was observed in an establishment devoted to the treatment of pulmonary tuberculosis by the administration of kumyss. Ordinary cow's milk does not produce this reaction.

Quinine Phytinate.—At the December meeting of the Société de thérapeutique (*Le Bulletin médical*, December 15, 1906), S. Posternak, as the result of an investigation into the phosphoorganic principle of vegetable grains, described a new salt having the chemical composition of the anhydrooxymethylene diphosphate of quinine. This agent known as the phytinate of quinine, is a yellowish powder of crystalline appearance of bitter taste, very soluble in water, insoluble in alcohol, ether, benzin, or chloroform. The watery solutions are fluorescent. The salt contains fifty-seven per cent. of quinine, with forty-three of phytinic acid, both constituents being therapeutically active. The pharmacodynamic properties of phytine, which is a general reconstructive and modifier of nutrition, are of a character to sustain the organism in its struggle against the microbes; and in this way to favor the specific action of quinine in malaria and typhoid fever, and especially in malarial cachexia. Phytinic acid has been found efficient in neuralgias and in Ménière's disease, on account of its high proportion of assimilable organic phosphorus. The therapeutical action of quinine in certain cases of diabetes, as pointed out by Blumenthal, Lecorché, Semmola, etc., will probably be reinforced by quinine phyturate. In a word, quinine as a vegetable base, seems to find in the phosphoorganic principle of vegetable grains a natural solvent, which has the properties of completing, up to a certain point, the therapeutical effects of the alkaloid.

Local Treatment in Diphtheritic Angina.—Bourget, of Lausanne (*Revue internationale de clinique et de thérapeutique*, and *Journal de médecine de Bordeaux*, November 18, 1906), follows this treatment in his service. As soon as the patient with pharyngeal diphtheria enters the hospital his throat is swabbed with the following mixture:

- R** Solution of sesquichloride of iron,
Pulverized alum, of each 2 parts;
Boric acid,
Glycerin, 20 parts.

This is to be thoroughly applied by means of a

tampon to the back of the throat and the whole affected area. The applications are to be repeated every few hours, using, of course, a fresh tampon each time. Five or six applications are made each séance, and these are repeated hourly, if necessary, or every two hours. In this way the false membrane immediately becomes shrivelled and coagulated. In a few days it is entirely removed. A few minutes after each treatment the patient uses the following gargle:

- R** Tincture of rhubarb,
Tincture of guaiacil, equal parts.

Two teaspoonfuls of this mixture are placed in a glassful of warm water, and this quantity is to be entirely used in rinsing the mouth and throat. By proceeding in this manner a marked improvement is soon apparent in the general condition of the patient. Often the fever ceases on the second or third day, sometimes on the fourth. Under such conditions it is evident that we may dispense with antitoxine. Antipyretics should never be used at all.

The Pathogenesis of Bromide Eruptions.—

Pasini, in *Annales de dermatologie et de syphilologie*, sought to throw some light upon the ætiology and pathology of the bromide eruptions about which little has been written. The case investigated showed the typical general symptoms of bromide intoxication and had an eruption made up of papular, papulopustular, papillomatous, vegetating and ulcerating lesions. Pasini's microscopical findings agreed with those of previous observers in all particulars save one. This exception concerned a special change in the connective tissue cells which has hitherto escaped notice. He found two stages of this change present. The first was an intermediate stage in which the connective tissue cell showed all the signs of the origin, evolution and morphology of the "cellules écumeuses" (Unna's *Schaumzellen*). The second was the terminal stage in which the cells had acquired a new property, that of "englobing" the white cells and of exercising phagocytic powers. These cells he calls *écumophagocytes*. They are derived, he says, from the ordinary cellules écumeuses and like them are a product of œdematous degeneration of the connective tissue cells. Pasini considers them absolutely pathognomonic. Various investigators have endeavored to demonstrate bromine in the lesions of the bromide eruption, but have always failed. Pasini became convinced that bromine was present, but was in combination with the albumin of the tissues from which the ordinary tests could not separate it. He found by test tube experiments that this was actually the case. He then devised a method of separating the organic matter from the bromine and later, by the use of this method, he demonstrated the presence of bromine in the eruption. He therefore believes free bromine to be the cause. As all cases are not intolerant, he argues that in the cases of intolerance there must be a special pathological condition present. After studying the cases published, he concludes that bromide intolerance is dependent upon a state of achlorhydria of the gastric juice.—Through *The Journal of Cutaneous Disease*.

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PAINLESS LABOR.

Cases of parturition described as painless are not extremely rare, but usually, provided gestation has been continued to full term, the absence of pain at the time of delivery is accounted for by some lesion of the central nervous system that involves sensory paralysis of the parturient canal. Leaving such instances out of the account, Dr. Bruno Wolff (*Archiv für Gynäkologie*, lxxviii, 2; *Berliner klinische Wochenschrift*, December 24th) finds in literature the records of only seven cases which he regards as comparable to one of his own that he relates.

Dr. Wolff's patient, a primigravida, twenty-eight years old, was entirely free of nervous disease. When labor came on, the uterine contractions were perfectly painless; more than that, the woman was quite unconscious of them, though they were plainly discernible on examination. They were rather inefficient, but they slowly—in the course of forty-eight hours—resulted in forcing the child deep into the pelvis, which was slightly contracted. Then they failed, and from the fact of their doing so the author draws the inference that pain is to some extent a necessary element in parturition as inciting voluntary effort on the part of the woman. But such effective uterine contractions as suffice to drive a child's head low into a contracted pelvis—even if the contraction is slight—seem all that can be called for, provided they continue.

Labor having come to a standstill, an anæ-

thetic was administered, and the birth of the child was effected by means of the forceps. The fact that anæsthesia was resorted to seems to show that Dr. Wolff expected that the forceps extraction would otherwise prove painful. If that is the case, he must have supposed that only the uterine contractions were painless, and that the necessary subsequent distention of the vulva would be productive of the usual pain attendant upon the emergence of the head. Such a supposition, we should say, was abundantly justified. One may regret, all the same, that a humane regard for the woman's comfort made it necessary to anæsthetize her, for otherwise there might have been put to a fuller test Dr. Wolff's hypothesis that the absence of pain, so long as it was observed, was attributable to some peculiar state of the genital organs (*eine eigenartige Beschaffenheit der Genitalorgane*). In the absence of any abnormality of the central nervous system, we should hardly expect that the vaginal outlet would show that insensibility to pain which occurred in the case of the uterus. The possible deductions from the account may have some medicolegal value; at all events the case is interesting and memorable.

THE PSEUDOPSYCHOLOGY OF CONTEMPORARY FICTION.

The real psychologists—rare birds, it seems to us—must be indignant at the so called psychology which is now dished up with such profusion by sensational writers of fiction. The wholesome story is almost a thing of the past. Even seduction and adultery seem to have palled upon that great section of the public to which the writers in question pander. Sexual perversion, in one or another of its Hydra headed phases, appears to be the only theme nasty enough to hold the attention of a great multitude of readers. And it is not the depraved alone who show admiration of pornographic vaporings and the ooze of moral abnormalities and monstrosities. It is not uncommon to hear a man of literary attainments, but one unfortunately embarked upon the current of pseudo-psychology, say of one of the pieces of literary sewage of the day, "it is a strong book." Yes, such books are strong—strong in the sense in which rotten fish are strong. They are rank.

These devilish productions are not confined to any one country, and no country is free from them. It can hardly be doubted that their perpetrators are more or less supported in their hallucination that they are warranted in pursuing their dirty "studies" by medical writers following, *longo intervallo*, in the wake of Krafft-Ebing's classical

Psychopathia sexualis. We therefore hope that medical men who feel called upon to write of such subjects will restrain themselves. The tendency of books dealing with sexual perversion is to undermine the normal disposition to sexual morality, to give young men and young women the impression that purity is rather traditional than actual; the possible consequences may be imagined.

CHLORIDÆMIA IN BRIGHT'S DISEASE.

With the introduction of the more exact methods of physical chemistry for the elucidation of many of the intricate problems of disease, a steadily increasing conviction of the importance of the inorganic constituents of the bodily fluids has been shown, and both laboratory and clinical investigations are emphasizing the fact that many of the solutions heretofore sought in the misty realms of the autointoxication hypothesis are to be found nearer at hand in the simple disturbances of molecular pressure of the cells of the body due to variation in their inorganic constituents. In the recent illuminating work of Achard and Widal on the significance of the chlorides in the body for the healthy functional activity of the kidney we see a direct application of these newer facts of physical chemistry and their bearing on a fundamental problem of pathology.

Sodium chloride, so highly important in the human economy, is so largely because it insures the constancy of the osmotic tension, or molecular pressure, in the tissues and fluids of the body. Under normal conditions the intake and output of this salt are carefully regulated and an equilibrium is maintained. Variations in the chlorides of the body entail variations in the amount of hydration of the tissues, and if an insufficient amount of chloride is eliminated, and its ingestion is continued as usual, the tissues necessarily become overhydrated in order to keep the tension of the cells in a normal state. This results in œdema, and in the œdematous serum, as pointed out by Achard, is to be found the excess of chlorides which the body has been unable to eliminate.

In many forms of nephritis the renal epithelium is incapable of eliminating its due share of chlorides, and thus arises from this cause, in part at least, the classical œdema of that disease. This overhydration, to compensate for the retained chlorides, must needs be extensive to show in the familiar forms of localized œdema, but even in its apparent absence the invisible œdema due to hydration should never be overlooked,

since in its train follow many of the dreaded symptoms of Bright's disease so universally ascribed heretofore to poisoning by uric acid or to some unknown toxins which zealous experimenters have even professed to isolate, and professed also to have obtained results from injections. Whether the term chloridæmia, now used to describe this condition, is better than the old term uræmia, does not yet appear, but that it is founded on a more definite basis in accurate observation cannot be denied, and the effects of dechloridation on the dyspnœa, vomiting, diarrhœa, headache, eclampsia, and Cheyne-Stokes respiration of a so called uræmic attack speak in no uncertain manner concerning the significance of a diminution of chlorides in diseases of which defective chloride elimination on the part of the kidneys is manifest.

In the treatment of Bright's disease, then, our attention must be more accurately given to the known factors of physiology—the osmotic tension of the bodily fluids as determined by their inorganic salts, particularly by their chlorides, rather than to the misty teachings of nitrogenous autointoxication. In the dechloridation principle we arrive at a basic mensurable fact for which the science of medicine is striving. While its applications may stray in various directions into the shadowy grounds outside of the lights cast by physical chemistry, yet therapeutics is an undeniable gainer by reason of the principle.

CHLOROFORM IN THE BLOOD.

Buckmaster and Gardner (*Proceedings of the Royal Society*, lxxviii, B 527) have studied the effect of chloroform on the blood in experiments on cats. The amount of chloroform in the blood was calculated from the difference of the chlorine contained in that fluid before and after the administration of the anæsthetic. Previous estimations by other observers of the amount of chloroform in the blood of animals were made by determining the amount of chloroform recoverable as such. It is evident that the chlorine contained in the blood gives a more accurate measure of the amount of chloroform in the blood than the amount of recoverable chloroform.

It is rather difficult to determine the exact moment at which an animal becomes completely anæsthetized. In the experiments conducted by Buckmaster and Gardner, the complete anæsthetization was arbitrarily fixed at the time of disappearance of both conjunctival reflexes. As a result of a number of experiments the conclusion is drawn that the amount of chloroform in

the arterial blood of cats at the time of the disappearance of the conjunctival reflexes varies between 14 milligrammes and 27.6 milligrammes to 100 grammes of blood. The amount varies with the individual animals, and probably depends upon the condition of the animal. Bodily weight alone is without influence on the necessary percentage of chloroform in the blood to produce anæsthesia.

The rate of induction of anæsthesia varies in different individuals, and this does not appear to depend altogether upon the percentage of chloroform in the inspired air, but seems to be a feature peculiar to each individual animal. This statement is applicable to human physiology. It is well known that certain individuals require a greater quantity of anæsthetic for total relaxation than others do. The lethal dose of chloroform which arrests respiration in casts is also variable. It averages about 40 milligrammes to 100 grammes of blood. There is a narrow margin between the weight of chloroform in the blood at the point of anæsthesia and at the cessation of respiration. The rate of elimination varies in different animals, but the rate of disappearance is far more constant than the rate of assumption.

In order to determine whether chloroform is bound with the blood corpuscles or exists in solution in the blood plasma, a number of experiments were done. The results clearly indicate that the anæsthetic is associated with the corpuscles rather than with the blood plasma. In fact, the conclusion is drawn that chloroform never gets into the plasma unless the anæsthesia is pushed to an extreme point and the anæsthetic is rapidly administered.

The chloroform appears to be very firmly held in the blood drawn from an anæsthetized animal, because there is never a smell of chloroform in such blood. In some experiments, in which blood was allowed to stand over night, there was no diminution in the chlorine contents. It would seem that the danger in chloroform anæsthesia is the narrow margin which the experiments of these observers show exists between anæsthesia and cessation of respiration. The observers make no mention of the action of chloroform on the heart, but it is quite likely, since the object of the experiments was to determine the behavior of chloroform with the blood, that no observations were made on the circulatory system itself. The teaching that chloroform kills by depressing and paralyzing the cardiac muscle seems to be pretty generally ignored by the English observers.

THE ARMY MEDICAL BILL.

The bill now pending in Congress, devised to increase the efficiency of the medical corps by augmenting the number of its members and, by enhancing their rank and emoluments, to restrain them from resigning, may yet be passed at the present session. We earnestly hope it will be, but we have our misgivings. Though it was passed by the Senate nearly a year ago, though it is earnestly favored by the President and by the Secretary of War and the General Staff, and though there is no serious opposition to it in any quarter, it seems to be in great danger of being ignored in the expiring days of the present session by reason of the greater apparent importance (to Congressmen) of certain other bills. If it is not enacted at this session, we hope that it will be among those to be passed at the ensuing session. As we have often pointed out, the medical corps as at present constituted is inadequate to the peace requirements, and at any moment there may arise an emergency calling imperatively for a far greater force. What may ensue if that emergency is not met?

AN ADMIRABLE NORTH CAROLINA INSTITUTION.

It is not easy to estimate the good that has been done by such schools for colored people as those at Tuskegee, Hampton, and Winston-Salem. The school last mentioned is officially known as the Slater Industrial and State Normal School. It is in need of funds, and we do not hesitate to say that beneficence could take no better form than that of assisting it to raise a contemplated fund of \$24,000. The State (North Carolina) has offered it \$12,000 on condition that the school itself raises an equal amount, and we learn that a New York man has undertaken to contribute \$6,000. Thus \$6,000 more must be subscribed. Contributions may be sent to the treasurer, Mr. W. A. Blair, in care of the People's National Bank, Winston-Salem, N. C. This school should commend itself particularly to medical men by the fact that it is to be the means of training colored girls as nurses—not, of course, to compete with the highly trained graduates of the great hospitals, but to serve in families of moderate means. As attendants in the sick room colored women are very acceptable to the people of the South, being almost invariably gentle and faithful. They do, however, need systematic instruction to bring out their full capabilities.

1. The first group of people who are interested in the study of the history of the world are the historians. They are people who study the past and write about it. They are interested in the events that have shaped the world and the people who have lived through them. They are also interested in the changes that have taken place over time and the reasons for these changes.

1955, 1956, 1957

1890-1891, 1891-1892, 1892-1893, 1893-1894, 1894-1895, 1895-1896, 1896-1897, 1897-1898, 1898-1899, 1899-1900, 1900-1901, 1901-1902, 1902-1903, 1903-1904, 1904-1905, 1905-1906, 1906-1907, 1907-1908, 1908-1909, 1909-1910, 1910-1911, 1911-1912, 1912-1913, 1913-1914, 1914-1915, 1915-1916, 1916-1917, 1917-1918, 1918-1919, 1919-1920, 1920-1921, 1921-1922, 1922-1923, 1923-1924, 1924-1925, 1925-1926, 1926-1927, 1927-1928, 1928-1929, 1929-1930, 1930-1931, 1931-1932, 1932-1933, 1933-1934, 1934-1935, 1935-1936, 1936-1937, 1937-1938, 1938-1939, 1939-1940, 1940-1941, 1941-1942, 1942-1943, 1943-1944, 1944-1945, 1945-1946, 1946-1947, 1947-1948, 1948-1949, 1949-1950, 1950-1951, 1951-1952, 1952-1953, 1953-1954, 1954-1955, 1955-1956, 1956-1957, 1957-1958, 1958-1959, 1959-1960, 1960-1961, 1961-1962, 1962-1963, 1963-1964, 1964-1965, 1965-1966, 1966-1967, 1967-1968, 1968-1969, 1969-1970, 1970-1971, 1971-1972, 1972-1973, 1973-1974, 1974-1975, 1975-1976, 1976-1977, 1977-1978, 1978-1979, 1979-1980, 1980-1981, 1981-1982, 1982-1983, 1983-1984, 1984-1985, 1985-1986, 1986-1987, 1987-1988, 1988-1989, 1989-1990, 1990-1991, 1991-1992, 1992-1993, 1993-1994, 1994-1995, 1995-1996, 1996-1997, 1997-1998, 1998-1999, 1999-2000, 2000-2001, 2001-2002, 2002-2003, 2003-2004, 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014, 2014-2015, 2015-2016, 2016-2017, 2017-2018, 2018-2019, 2019-2020, 2020-2021, 2021-2022, 2022-2023, 2023-2024, 2024-2025, 2025-2026, 2026-2027, 2027-2028, 2028-2029, 2029-2030, 2030-2031, 2031-2032, 2032-2033, 2033-2034, 2034-2035, 2035-2036, 2036-2037, 2037-2038, 2038-2039, 2039-2040, 2040-2041, 2041-2042, 2042-2043, 2043-2044, 2044-2045, 2045-2046, 2046-2047, 2047-2048, 2048-2049, 2049-2050, 2050-2051, 2051-2052, 2052-2053, 2053-2054, 2054-2055, 2055-2056, 2056-2057, 2057-2058, 2058-2059, 2059-2060, 2060-2061, 2061-2062, 2062-2063, 2063-2064, 2064-2065, 2065-2066, 2066-2067, 2067-2068, 2068-2069, 2069-2070, 2070-2071, 2071-2072, 2072-2073, 2073-2074, 2074-2075, 2075-2076, 2076-2077, 2077-2078, 2078-2079, 2079-2080, 2080-2081, 2081-2082, 2082-2083, 2083-2084, 2084-2085, 2085-2086, 2086-2087, 2087-2088, 2088-2089, 2089-2090, 2090-2091, 2091-2092, 2092-2093, 2093-2094, 2094-2095, 2095-2096, 2096-2097, 2097-2098, 2098-2099, 2099-2100, 2100-2101, 2101-2102, 2102-2103, 2103-2104, 2104-2105, 2105-2106, 2106-2107, 2107-2108, 2108-2109, 2109-2110, 2110-2111, 2111-2112, 2112-2113, 2113-2114, 2114-2115, 2115-2116, 2116-2117, 2117-2118, 2118-2119, 2119-2120, 2120-2121, 2121-2122, 2122-2123, 2123-2124, 2124-2125, 2125-2126, 2126-2127, 2127-2128, 2128-2129, 2129-2130, 2130-2131, 2131-2132, 2132-2133, 2133-2134, 2134-2135, 2135-2136, 2136-2137, 2137-2138, 2138-2139, 2139-2140, 2140-2141, 2141-2142, 2142-2143, 2143-2144, 2144-2145, 2145-2146, 2146-2147, 2147-2148, 2148-2149, 2149-2150, 2150-2151, 2151-2152, 2152-2153, 2153-2154, 2154-2155, 2155-2156, 2156-2157, 2157-2158, 2158-2159, 2159-2160, 2160-2161, 2161-2162, 2162-2163, 2163-2164, 2164-2165, 2165-2166, 2166-2167, 2167-2168, 2168-2169, 2169-2170, 2170-2171, 2171-2172, 2172-2173, 2173-2174, 2174-2175, 2175-2176, 2176-2177, 2177-2178, 2178-2179, 2179-2180, 2180-2181, 2181-2182, 2182-2183, 2183-2184, 2184-2185, 2185-2186, 2186-2187, 2187-2188, 2188-2189, 2189-2190, 2190-2191, 2191-2192, 2192-2193, 2193-2194, 2194-2195, 2195-2196, 2196-2197, 2197-2198, 2198-2199, 2199-2200, 2200-2201, 2201-2202, 2202-2203, 2203-2204, 2204-2205, 2205-2206, 2206-2207, 2207-2208, 2208-2209, 2209-2210, 2210-2211, 2211-2212, 2212-2213, 2213-2214, 2214-2215, 2215-2216, 2216-2217, 2217-2218, 2218-2219, 2219-2220, 2220-2221, 2221-2222, 2222-2223, 2223-2224, 2224-2225, 2225-2226, 2226-2227, 2227-2228, 2228-2229, 2229-2230, 2230-2231, 2231-2232, 2232-2233, 2233-2234, 2234-2235, 2235-2236, 2236-2237, 2237-2238, 2238-2239, 2239-2240, 2240-2241, 2241-2242, 2242-2243, 2243-2244, 2244-2245, 2245-2246, 2246-2247, 2247-2248, 2248-2249, 2249-2250, 2250-2251, 2251-2252, 2252-2253, 2253-2254, 2254-2255, 2255-2256, 2256-2257, 2257-2258, 2258-2259, 2259-2260, 2260-2261, 2261-2262, 22

The Society of Engineers of the Village of Canton daigua, N. Y., has elected officers for the ensuing year as follows: Dr. George W. McClellan, president; Dr. J. H. Jewett, vice-president; Dr. A. W. Armstrong, secretary

The Canandaigua Hospital of Physicians and Surgeons.—At a meeting of the stockholders of this hospital, held on January 22nd, the following officers and directors were elected: President and treasurer, Dr. A. L. Beahan; secretary, Dr. O. J. Hallenbeck; directors, Dr. S. A. Wheeler, East Bloomfield; Dr. W. B. Clapper, Victor; Dr. D. A. Eislene, Shortsville; and Dr. F. E. McClellan and Dr. M. R. Carson, of Canandaigua.

The Medical Society of the County of Greene, N. Y.—At the annual meeting of this society, held at Catskill, on Tuesday, January 15th, the election of officers resulted as follows: President, Dr. W. A. Wasson, of Greenville; vice-president, Dr. J. B. Rouse, of Leeds; secretary, Dr. Robert Selden, of Catskill; treasurer, Dr. Charles E. Willard, of Catskill. The spring meeting will be held at

The Medical Society of the State of New York.—At the annual meeting, held at Albany, on Tuesday and Wednesday, January 29th and 30th, the election of officers resulted as follows: President, Dr. F. C. Curtis, Albany; first vice-president, Dr. J. C. Bierwirth, Brooklyn; second vice-president, Dr. Edward Torrey, Allegany; third vice-president, Dr. N. G. Richmond, Fredonia; secretary, Dr. Wisner R. Townsend, New York; treasurer, Dr. Alexander Lambert, of New York.

The aim of these lectures is to arouse in the public a sound interest in questions of mental hygiene, and all interested in sociological work are invited.

was substituted for the programme given in our last issue: Prolapse of the Uterus, Dr. Charles E. Condon; Unnecessary Operations, Especially in the Female, Dr. J. Henry Dowd; exhibition of a specimen of lithopedion of thirty-two and a half years' duration, removed from a woman sixty-seven years of age, Dr. Herman E. Hayd.

The Medical Society of the County of Ulster, N. Y.—The following programme has been arranged for a meeting of this society, to be held at Kingston, on Tuesday, February 5th: Surgery of the Extremities, Dr. George G. Lempe, Albany, N. Y.; Résumé of Experience of the Newark City Laboratory, Dr. R. M. Connolly, Chief Bacteriologist Department Public Health, Newark, N. J.; Work of the Poughkeepsie Board of Health, Dr. John S. Wilson, Health Officer, Poughkeepsie, N. Y.; General discussion by physicians and Kingston Board of Health (who will be the guests of the County Society).

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending January 26, 1907:

Society Meetings for the Coming Week:

TUESDAY, February 5th.—New York Academy of Medicine (Section in Dermatology); New York Neurological Society (annual); Buffalo Academy of Medicine (Section in Surgery); Long Island, N. Y., Medical Society; Hornellsville, N. Y., Medical and Surgical Association; Medical Association of Troy and Vicinity (annual); Hudson, N. J., County Medical Society (Jersey City); Syracuse, N. Y., Academy of Medicine; Ogdensburg, N. Y., Medical Association.

THURSDAY, *February 7th.*—New York Academy of Medicine.

PHILADELPHIA AND THE MIDDLE STATES.

Typhoid Fever in Camden, N. J.—During the year 1906 only thirty-one cases of typhoid fever were reported in the city of Camden, N. J., and the health authorities have been able to trace a majority of these cases to infection from other places. Camden has been supplied with filtered water for many years.

Presbyterian Hospital in Philadelphia.—At the annual meeting of the corporation of this hospital, held on Tuesday, January 15th, the following officers were elected: President, the Reverend Dr. Charles A. Dickey; vice-presi-

dent, Mr. Charles H. Mathews; secretary, Mr. John H. Converse; treasurer, the Fidelity Trust Company; solicitors, Mr. Charles H. Mathews and Mr. John Marshall Gest.

Northern Medical Association.—At the annual meeting of this association the following officers were elected for 1907: President, Dr. Samuel H. Brown; vice-president, Dr. Herman A. Brav; corresponding secretary, Dr. Thomas R. Currie; recording secretary, Dr. R. E. Shrom; treasurer, Dr. John W. Millick; librarian, Dr. Robert J. Hess; censor, Dr. H. B. Nightingale.

The Meat and Cattle Inspection Division of the Bureau of Health.—Dr. A. G. Schreiber, in his annual report to Dr. A. C. Abbott, chief of the bureau, shows that during the past year his division has inspected 152 slaughter houses, most of which were found in a fair condition; made 39,044 inspections of dressed meats; condemned 337,695 pounds of meat; inspected 56,986 living animals; inspected 21,269 carcasses, of which 562 were condemned; and brought fifteen prosecutions, with fifteen persons held for court.

The Penalty for Rape in Delaware.—According to press reports the House of Representatives of Delaware, on January 22nd, by a vote of twenty-six to eight, passed a bill providing that a "surgical operation" (orchidectomy?) should be performed on all men convicted of attempting to assault women in Delaware. The operation must be performed within twenty days of the conviction and will be in addition to the existing penalty of twenty years' imprisonment. The bill is an outcome of recent assaults on white women by negroes in Delaware.

Philadelphia Obstetrical Society.—At the annual meeting of this society the following officers were elected for 1907: President, Dr. Wilmer Krusen; vice-presidents, Dr. F. Hurst Maier and Dr. G. M. Boyd; secretary, Dr. Frank C. Hammond; treasurer, Dr. J. W. West; curator, Dr. Brooke M. Anspach; council, Dr. Stricker Coles, Dr. L. J. Hammond, Dr. M. M. Franklin, Dr. John C. DaCosta; publication committee, Dr. William E. Parke, Dr. Theodore A. Erck, Dr. Stricker Coles, Dr. John G. Clark; library committee, Dr. Daniel Longaker and Dr. William R. Nicholson.

German Hospital in Philadelphia.—At the annual meeting of the managers of this hospital, held on Wednesday, January 16th, the following officers were elected for the ensuing year: President, Mr. Hermann Hessenbruch; vice-president, Mr. W. Richards Muckle; secretary, the Reverend Adolf Hellurge; treasurer, Mr. Edmund R. Teubner; trustees, M. Richards Muckle, G. A. Schwarz, Henry D. Justi, George W. Bremer, Dr. Samuel Laird, Theodore Bremer, Rev. A. Hellurge, Albert Schoenhut, Otto C. Wolf, William F. Dreer, Walter Horstmann, Herman C. Rumpff, Hermann Hessenbruch, Herman Dercum, and Horace E. Smith. Mr. M. Richards Muckle gave \$5,000 for the establishment in the institution of a free bed, to bear his name.

Children's Hospital of Philadelphia.—At the annual meeting of the board of managers of the Children's Hospital of Philadelphia, held on Tuesday, January 15th, the following officers were elected: President, Mr. Charles Platt; vice-president, Mr. Emlen Hutchinson; secretary, Mr. Edward O. Sayres; treasurer, Mr. Charles W. Cushman. The following managers were chosen: H. McKean Ingersoll, John Cadwalader, Jr., Robert C. Drayton, Benjamin Rush, Stevens Heckscher, Alfred P. Gerhard, Charles Platt, Dr. Robert G. Le Conte, Thomas Willing Balch, Dr. W. B. Cadwalader, Arthur H. Lea, Edward C. Dale, Richard Wood, Edward S. Sayres, Eckley B. Cox, Jr., Emlen Hutchinson, William White, Jr., John O. Platt.

Philadelphia Personals.—At the opening of the University of Pennsylvania Neighborhood House, at Twenty-sixth and Lombard streets, on Saturday, January 19th, a tablet was unveiled to Dr. Horatio C. Wood. The tablet bears the following inscription: "This tablet bears witness to the enduring gratitude of friends and admirers of Horatio C. Wood, M. D., LL. D., to whose unwearied exertions, unstinted liberality, wise counsel, and eloquent voice the foundation and completion of this building are mainly indebted. 'More is due than more than all can pay.'"

Dr. William A. Bradsher, of Roxboro, N. C., and Dr. Ira P. Trevett, of West Seneca, N. Y., are registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

Scientific Society Meetings in Philadelphia for the Week Ending February 9, 1907.—Monday, February 4th, Philadelphia Academy of Surgery; Biological and Microscopical

Section, Academy of Natural Sciences; West Philadelphia Medical Association; Northwestern Medical Society. Tuesday February 5th, Academy of Natural Sciences; Philadelphia Medical Examiners' Association. Wednesday, February 6th, College of Physicians; Association of Clinical Assistants of Wills College. Thursday, February 7th, Obstetrical Society; Medical Society of the Southern Dispensary; Section Meeting, Franklin Institute; Northwest Branch, Philadelphia County Medical Society. Friday, February 8th, Northern Medical Association; West Branch, Philadelphia County Medical Society.

The Philadelphia Branch of the American Pharmaceutical Association.—A meeting of this branch of the American Pharmaceutical Association will be held in the lower hall of the College of Physicians, northeast corner Thirteenth and Locust streets, on the evening of Tuesday February 5, 1907, at 8 o'clock. The discussion for the evening, Higher Educational Requirements for Pharmacists, will be opened by: William L. Cliffe, Ph. G., The Practical Need for Higher Education in Pharmacy; Henry Kraemer, Ph. D., The Present Day Development of Pharmaceutical Education; Horatio C. Wood, Jr., M. D., The Future Elaboration of a Course in Pharmacy. This subject is one that is of vital importance to the continuation of pharmacy as a distinct occupation.

Philadelphia County Medical Society.—At a meeting of this society, held on Wednesday evening, January 23rd, Dr. Alfred Gordon made some remarks on *Spondylose Rhizomelique*, exhibiting two patients. Dr. John B. Roberts read a paper on Improved Methods in the Operation for Cleft Palate, the discussion of which was opened by Dr. G. Hudson McKuen and Dr. A. R. Craig. Dr. James C. Wilson and Dr. G. C. Robinson presented a case of heart block with tracings. Dr. John W. Luther read a paper on The Trypsin Treatment of Cancer. The following officers were elected at the December meeting of the South Branch: Chairman, Dr. S. W. Gadd; clerk, Dr. James H. Baldwin. The following officers were elected at the December meeting of the Kensington Branch: Chairman, Dr. H. G. Godfrey; clerk, Dr. William T. Hamilton.

The Philadelphia Neurological Society.—At the meeting of this society, held on Tuesday evening, January 22nd, Dr. T. J. Orbison exhibited a case of bulbar palsy in multiple sclerosis. Dr. A. C. Buckley exhibited a case of prolonged stupor resulting from alcoholism, followed by amnesia and convalescence. Dr. W. G. Spiller exhibited a case of unilateral wrist drop from lead. Dr. J. W. McConnell exhibited a case of spinal cord changes following a grave anemia, with recovery. Dr. J. T. Krall exhibited a case of unilateral ophthalmoplegia with paresis of voluntary upward associated ocular movement. Dr. C. W. Burr presented a case. Dr. G. E. Price read a paper on An Unusual Symptom in Chorea; Dr. W. G. Spiller and Dr. C. D. Camp read a paper on The Clinical Resemblance of Cerebrospinal Syphilis to Disseminated Sclerosis. Dr. T. J. Orbison read a paper on The Neurasthenia of Auto-intoxication.

The Health of Philadelphia.—During the week ending January 19, 1907, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Typhoid fever.....	381	41
Scarlet fever.....	56	2
Chickenpox.....	60	0
Diphtheria.....	120	15
Cerebrospinal meningitis.....	4	2
Whooping cough.....	15	3
Measles.....	25	1
Tuberculosis of the lungs.....	87	53
Pneumonia.....	52	63
Erysipelas.....	14	3
Puerperal fever.....	2	2
Tetanus.....	1	1
Mumps.....	4	0
Anthrax.....	1	0

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 10; diarrhoea and enteritis, under two years of age, 13; malarial fever, 1; septicæmia, 1; cancer, 24. The total mortality was 558, in an estimated population of 1,506,595, corresponding to an annual death rate of 19.34 in a thousand population. The total infant mortality was 104; under one year of age, 82; between one and two years of age, 22. There were 23 still births, 9 males and 14 females. The temperatures were seasonable. There were 1.26 inches of total precipitation, partly rain and partly snow.

BOSTON AND NEW ENGLAND

The Proposed Academy of Medicine at Springfield, Mass.—At a meeting of a number of physicians of Western Massachusetts, held at Springfield, on January 24, preliminary steps for the formation of an academy of medicine at Springfield were reported and officers were elected as follows: President, Dr. J. A. Houston, superintendent of the Northampton State Hospital for the Insane; first vice-president, Dr. R. H. Seelye; second vice-president, Dr. A. O. Squier; secretary and clerk, Dr. W. R. Weiser; treasurer, Dr. H. W. Van Allen; directors, Dr. O. W. Cobb, of Easthampton; Dr. J. W. Hamum, of Ludlow; Dr. V. J. Irwin, Dr. W. A. Smith, Dr. F. W. Chaplin, Dr. E. H. Guild, Dr. C. H. Calkins; censors, Dr. J. B. Comins, Dr. T. S. Bacon, Dr. F. B. Sweet, Dr. J. E. Marsh, Dr. F. S. Ward, Dr. J. B. Atwater, of Westfield, and Dr. R. E. Dickson, of Holyoke.

The Springfield, Mass., Hospital Staff.—The following were elected to the staff of the Springfield Hospital for the ensuing year, at the annual meeting of the directors, on Friday, January 18th: Consulting physicians and surgeons, Dr. George S. Stebbins, Dr. David Clark, Dr. George C. McClean, Dr. F. W. Chapin, Dr. Luke Corcoran, Dr. Walter A. Smith, Dr. Thomas G. Alcorn; visiting physicians, Dr. L. S. Brooks, Dr. E. A. Bates, Dr. C. P. Hooker, Dr. W. H. Pomeroy; visiting surgeons, Dr. D. J. Brown, Dr. Dudley Carleton, Dr. R. H. Seelye, Dr. F. B. Sweet; medical assistants, Dr. W. W. Broga, Dr. S. J. Russell, Dr. W. H. Chapin, Dr. M. J. Stoddard, Dr. E. A. Gates; surgical assistants, Dr. T. S. Bacon, Dr. A. M. Clapp, Dr. R. S. Benner, Dr. J. I. Butler, Dr. Ralph B. Ober, Dr. Allen G. Rice; obstetrician, Dr. David Clark; ophthalmologists, Dr. Ralph Carleton, Dr. W. G. Craig; surgeon of the throat, nose, and ear, Dr. F. E. Hopkins; dermatologist and neurologist, Dr. Philip Kilroy; orthopaedic surgeon, Dr. Dudley Carleton.

BALTIMORE AND THE SOUTH

Personal.—The city council of Savannah, Ga., has recently appointed Dr. R. V. Martin and Dr. Lawrence Lee city physicians for a term of two years each.

The Johns Hopkins Hospital Portrait Group of Dr. William H. Welch, Dr. William Osler, Dr. Howard A. Kelly, and Dr. William S. Halsted, painted by Sargent and presented to Johns Hopkins University by Miss Mary Garrett, of Baltimore, was unveiled in McCoy Hall, of the university, on Friday evening, January 18th.

Easton Hospital Opened.—The Easton (Md.) Hospital was formally opened on Wednesday, January 16th. The following physicians have been elected to the staff of the hospital: Dr. J. M. H. Bateman, Dr. Edward R. Trippe, Dr. Charles F. Davidson, Dr. Philip L. Travers, and Dr. Hughtell Hardcastle. Miss Elizabeth T. Wright has been appointed chief nurse.

The Chatham County, Georgia, Medical Society.—At a meeting of this society, held on Wednesday, January 23rd, Dr. T. P. Waring read a paper entitled *The Work of the Mayor*. The society passed a resolution authorizing the president to appoint a special committee to investigate the standing of quacks, abortionists, medical pretenders, and other violators of recognized medical laws. The committee has the power to secure evidence against these pretenders and to proceed against them in the criminal and civil courts in the name of the Chatham County Medical Society.

The Southwest Virginia Medical Society.—The tenth semiannual meeting of this society was held at Abingdon, on Thursday, January 24th. The programme arranged for the meeting included the following titles: President's address, *Genius*, by Dr. L. G. Pedigo, of Roanoke; *The Value of Blood Examination in Diagnosis*, by Dr. Douglas Vander Hoof, of Richmond, Va.; *Professional Discourtesy*, by Dr. A. B. Greiner, Rural Retreat, Va.; *Clinical Report*, by Dr. D. L. Kinsolving, presenting a case of herpes zoster; *Remedies*, Dr. W. H. Ribble, Wytheville, Va.; *Gallstones*, by Dr. George Ben. Johnston, of Richmond; *Clinical Report*, by Dr. King, presenting a case of cranial ulcer; *The County Medical Society*, by Dr. Peyton B. Green, of Wytheville; *Fractures: Their Medicolegal Importance*, by Dr. John T. Graham, Wytheville; *Surgery with Drugs and Without Drugs*, by Dr. Murat Willis, of Richmond; *The Present Status of Life Insurance Examination*, discussion opened by Dr. M. M. Pearson, of Bristol, Va.

CHICAGO AND THE WEST

The Jewish Hospital of Cincinnati has opened its new addition and is now ready for increased business.

St. Joseph's Hospital, Denver, Colorado.—At the annual election of officers of the staff of this hospital, held on January 19th, the following named physicians were chosen for 1907: President, Dr. Leonard Freeman; vice-president, Dr. John M. Foster; executive committee, Dr. W. S. Bagot, Dr. James R. Arneill, and Dr. John M. Foster; nurses training school committee, Dr. T. J. Carlin, Dr. J. B. Devlin, and Dr. J. N. Hall; secretary, Dr. E. Delehanty.

Personal.—Dr. Theodor Schott, of Naunheim, Germany, was the guest of the Medical College of Ohio (the Medical Department of the University of Cincinnati) recently. He delivered a lecture in the auditorium of the university and was given a reception. Dr. Schott is an authority on the treatment of heart diseases.

The friends of Dr. Thaddeus A. Reamy were delighted recently to receive a memento from him to let them know that he still remembered them in the confinement to his room, due to the feebleness of very advanced age.

Statement of Mortality of Chicago for the Week Ending January 19, 1907, compared with the preceding week and with the corresponding week of 1906. Death rates computed on United States Census Bureau's figures of midyear populations—2,107,620 for 1907, 2,049,185 for 1906:

	Jan. 19, 1907.	Jan. 12, 1907.	Jan. 20, 1906.
Total deaths, all causes	638	699	611
Annual death rate in 1,000	15.78	17.29	15.55
Sexes			
Males	370	407	338
Females	268	292	273
Ages			
Under 1 year of age	128	127	123
Between 1 and 5 years of age	61	61	45
Between 5 and 20 years of age	18	37	42
Between 20 and 60 years of age	249	295	259
Over 60 years of age	182	176	142
Important causes of death			
Apoplexy	19	9	15
Bright's disease	40	55	43
Bronchitis	15	22	19
Consumption	69	93	69
Cancer	26	28	36
Convulsions	15	12	13
Diphtheria	17	19	9
Heart diseases	43	51	39
Influenza	12	17	6
Intestinal diseases, acute	25	26	21
Measles	4	6	3
Nervous diseases	25	19	29
Pneumonia	131	117	111
Scarlet fever	18	11	6
Suicide	4	5	7
Typhoid fever	5	4	5
Violence (other than suicide)	35	34	30
Whooping cough	6	8	1
All other causes	144	160	149

GENERAL

A New Medical Journal.—The *Revue de l'Électro-physiologie des Uranismes* is the title of a new medical journal edited by Dr. L. S. Von Römer, of Amsterdam. Published by Maas and Van Suchtelen, of Amsterdam.

The Mississippi Valley Medical Association Prize.—At the last meeting of the Mississippi Valley Medical Association it was decided to offer a prize of \$100 for the best essay on some medical or surgical subject. The competition is to be limited to those who, at the time of entering the competition as well as at the time of the award, shall be members in good standing of the Mississippi Valley Medical Association. The award will be made by a committee appointed for the purpose, consisting of Dr. Hugh T. Patrick, of Chicago; Dr. A. H. Cordier, of Kansas City; and Dr. Charles H. Hughes, of St. Louis. The name of the author is to be enclosed in a sealed envelope bearing some motto or device and the essay is to be marked by the same motto or device. The name of the successful author and the title of his essay will be announced at the next meeting of the association, to be held in Columbus, Ohio, October 8, 9, 10, 1907, and the award will be made at that time. The successful essayist will be notified at least two weeks prior to the meeting, and he will be expected to read his essay at that meeting. The essay is to be published in the organ of the association. All essays must be typewritten, and are to be sent to the secretary, Dr. Henry Enos Tuley, 111 West Kentucky Street, Louisville, Ky., on or before August 1, 1907, after which date no essay will be received. The committee reserves the right to reject any or all essays.

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

1. Goitre, By C. H. MAYO.
2. Operations for the Shortening of the Broad Ligaments, By ARTHUR E. HERTZLER.
3. A Case of Chronic Joint Disease, with Marked Osteo-atrophic Changes, By R. S. LAVENSON.
4. A New Primary Position in the Bloodless Treatment of Congenital Joint Dislocation, By FREDERICK MUELLER.
5. Variations in the Frontal Sinuses, By M. H. CRYER.
6. Tumor of the Right *versus* Tumor of the Left Frontal Lobe of the Brain, By WILLIAM C. KRAUSS.
7. Some Ways to Prevent the Spread of Tuberculosis, By SAMUEL AMBERG.
8. A Plea for Cremation in Tuberculosis and Similarly Infectious Diseases, By S. A. KNOPF.
9. The Opsonic Content of the Blood of Infants, By EDWIN TAYLOR SHELLY.
10. Superstition in Teratology, with Special Reference to the Theory of Impressionism, By CHARLES LESTER LEONARD.
11. Therapeutical Uses and Dangers of the Röntgen Rays, By RUSSELL H. BOGGS.
12. The Röntgen Rays in Superficial Lesions, By ENNION G. WILLIAMS.
13. The Treatment of Malignant Growths by the Röntgen Rays, By HENRY LEFFMANN.
14. Starch Sugar (Glucose and Grape Sugar) as a Food Adulterant, By GEORGE KNOWLES SWINBURNE.
15. The Antigonococcus Serum of Rogers and Towey in Epididymitis, By CRESSY L. WILBUR.
16. Legislation for Vital Statistics in the United States.

1. **Goitre.**—C. H. Mayo observes that the general impression to be obtained from a review of the surgical literature of America would be that diseases of the thyroid gland are greatly on the increase. This is probably not the case, but the public has learned that operations on goitre are not as fatal as were supposed from the results obtained when operations were made as a last resort on patients suffering from this disease and in a moribund state. The fact is that the mortality attending the operation (excluding cancer and advanced cases of exophthalmic goitre) compares very favorably with other major surgery; and, in the hands of those experienced, with much of the so called minor surgery. Mayo describes the operative as follows: The choice of an anæsthetic is more often determined by the idiosyncrasy of the operator than the necessity of the case. There were thirteen operations made with cocaine infiltration. Of these three were completed with chloroform. While there are occasional cases in which local anæsthesia may be necessary, the author has noticed but little difference in the shock or general condition of the cases from the anæsthetic employed. He now uses ether anæsthesia, preceded twenty minutes by hypodermic of $\frac{1}{4}$ gr. of morphine and $\frac{1}{120}$ gr. atropine. The table is placed in an elevated slanting position with the head up (reverse Trendelenburg). The tumor is rendered prominent by a roll beneath the neck if it does not interfere with respiration. He prefers the collar or transverse incision. In tumors of medium size this crosses the centre of the tumor, in larger tumors it crosses the upper third and the lower flap is split vertically to the sternum if necessary. The incision is through skin and platysma muscle, the flap being raised to expose freely the muscles covering the gland, namely, the sternohyoid and thyroïd, the inner portions of the sternomastoid and omohyoid. In medium sized growths muscle separation will permit of the delivery of the tumor. After the removal of the gland, the severed muscles are carefully united by suture. The upper section also permits of early ligation of the superior thyroïd artery which is the key to the situation. The more firm and

rounded tumors, with a strong capsule, can be readily enucleated after incising the capsule and penetrating the gland tissue to the cyst. He usually loosens the gland from the outside of the capsule first. On viewing the tumor, the true capsule has the lustre and appearance of peritonæum. If one is not sure, incise between the vessels. Should hæmorrhage be severe, lifting up the tumor by its capsule will reduce the bleeding until sutures can be placed for its control. In parenchymatous and colloid tumors he makes extirpation of one lobe and the isthmus. After exposing it the upper pole is elevated and the superior thyroïd artery is cut between the ligatures. The lateral veins are clamped and cut, the lower pole is elevated into the wound, incision is made along the outer posterior border, and the capsule is brushed off with gauze to the median line. The isthmus is clamped and closed by suture. If the enucleation method for adenoma and cysts leaves a badly torn lobe it can be removed. The results the author had were very satisfactory.

4. **A New Primary Position in the Bloodless Treatment of Congenital Hip Joint Dislocation.**—Mueller states that the possibility of curing any given congenital hip joint dislocation by holding the head of the femur in the socket in the pocket shaped recessus has been proved beyond doubt, and likewise the possibility of producing the phenomenon of reposition in almost all cases, and yet we obtain only from 50 to 60 per cent. anatomic cures. In the Lorenz primary position a deformed femur head can stay only with a part of its circumference within the pocket shaped recessus, if at all, and only slight mechanical causes may effect redislocation. Such causes come into play later on when the children walk. All the jerks, which are caused by the walking in the cast, are transmitted by means of the knee joint and thigh to the femur neck and head of the femur. As the neck of the femur runs from below in an upward direction, all the jerks must therefore have a component running in the same direction, and this component strives to push the head of the femur over the superior rim of the acetabulum. By these constant efforts the cartilaginous superior rim of the socket may be ground off and lowered, and the result is an anterior superior redislocation which becomes apparent when the cast is removed. On account of this Mueller introduces a modification of the Lorenz method by adopting a primary position with the thigh in rectangular abduction in such a way that the kneecap is turned toward the frontal plane and maintains this position by a plaster cast, reaching to the ankle joint or even to the toes. The position of the kneecap serves in this way for the determination of the position of the femur neck. The results obtained are, he says, most satisfactory. The method does away with the brutal widening of the capsule after the operation and simplifies the after treatment.

6. **Tumor of the Right Versus Tumor of the Left Frontal Lobe of the Brain.**—Krauss presents two gliomata. In comparing these two tumors or lesions of the frontal lobes of the right and left hemispheres, respectively, he calls attention to the fact that while the right frontal tumor called forth no localizing symptoms, the left frontal tumor was characterized by pronounced mental disturbance and loss of the capability of writing and printing. He therefore concludes that the prefrontal lobe of the left hemisphere is in all probability the seat of memory, reason, intuition, and judgment or the higher intellectual faculties. A distinct centre for writing and printing exists in the base of the second frontal convolution of the left hemisphere.

8. **A Plea for Cremation in Tuberculosis and Similarly Infectious Diseases.**—Knopf pleads for cremation of the dead, not only on the ground of sanitary meas-

economic advantage to many individuals and to every community at large. The present practice of burial favors the persistence of germs which in some diseases may persist over long periods in the soil, infecting the ground, water, and in large cities occupying thousands of acres which otherwise could be used for the living. The author gives a list of leading men, favoring or opposing cremation.

9. The Opsonic Content of the Blood of Infants.—Amberg has tested the opsonic content of the blood of infants, following the method of Simon and Lamar in adults. In summing up he says that we should be careful in drawing conclusions from the data given. The dispensary material does not furnish an ideal material to reach final results, and the small number of cases in which the examinations could be repeated makes itself felt very disagreeably. Furthermore, it was impossible to obtain normal infants on which a series of observations covering a longer period of time could be taken, and such a series certainly is very desirable. Therefore, he offers these results only tentatively and more as a basis for further investigation. Since the blood of normal individuals contains a certain amount of opsonins which are able to prepare a large number of different microorganisms for phagocytosis, and since these opsonins seem of importance in the defense of the organism against various infections, it seems necessary to determine, if possible, the conditions which govern their amount in the blood of normal individuals. Keeping in mind the restriction mentioned, he says the results may be summarized as follows: 1. The opsonic content of the infant's blood does not seem to follow the rules laid down by Moro for the bactericidal power of the blood. 2. The average values for the opsonic content of the infant's blood exceed those laid down by Simon for normal adults. 3. A distinct advantage seems to exist in favor of the breast fed infant. This advantage does not seem to be dependent as much on the breast feeding as such, but it seems to be dependent to some extent on the state of the nutrition of the infant and perhaps on the constitution.

11. Therapeutical Uses and Dangers of the Roentgen Rays.—Leonard reminds us that the gravest danger from the Röntgen rays lies in their promiscuous employment by those who have not been taught their use or the knowledge of their physiological action and therapeutical effects. The production and application of the Röntgen rays as diagnostic and therapeutical agents should be taught to medical students by practical laboratory and clinical courses. Their employment on the human subject for diagnostic or therapeutical purposes should be limited to qualified practitioners, that is to those licensed by State boards to practice medicine and dental surgery. Action to this effect has been taken by recognized bodies of medical men in Vienna, in Berlin, and in Paris, by the German Röntgen Society, and by the Academy of Medicine in Paris.

15. The Antigonococcus Serum of Rogers and Towey in Epididymitis.—Swinburne reports thirteen cases of epididymitis treated with the antigonococcus serum of Rogers and Torrey. Of the thirteen patients two disappeared; one was sent to the hospital and the other did not return after the first treatment. The other eleven were followed the entire time of their trouble. Eight of the patients were treated practically within twenty-four hours of the beginning of the epididymitis, three had had their trouble three or four days. Those having it longer were not treated with the serum, for I believe that, if it is to be effective, it must be employed as early as possible. In all the cases but two the patients had no pain after the fourth day ex-

cept in the three who relapsed. In five patients there was no trace of the disease after complete recovery, no nodule left; in four there was a slight nodule left, and in two there was a large rather soft mass left about the epididymis. Four of the cases were of a severe type from the start. Six of the patients received serum from the rabbit, one from rabbit and goat, and four from the goat. On a review Swinburne's impression of these cases is that the serum exerted a distinct effect in all the cases, that the course of the disease was modified by it to a marked degree. The duration of the disease was distinctly shortened, and in several of the cases the quickness of recovery was remarkable.

MEDICAL RECORD

January 26, 1907.

- During the Period of the Early History of the Academy. By A. JACOB.
2. The House Fly and Its Connection with Disease Dissem- By F. K. McMURROUGH.
5. An Unusual Nidus for Gonococcic Infection. By EDGAR G. BALLENGER.

2. **The House Fly and Its Connection with Disease Dissemination.**—Dickinson states that there are found in our houses seven different varieties of flies, 98 per cent. of which is the common house fly (*Musca domestica*). Born in manure, generally that of the horse, or in decomposing matter of any kind, vegetable as well as animal, they enter our homes to alight on foods there stored. Their tastes are indelicate and omnivorous; they subsist on sputum, fecal juices, and the slime and dirt that sticks to exposed surfaces. House flies are without stings, and are unable to penetrate the skin. Their proboscides, through which they feed, are connected with an extremely active salivary gland, capable of pouring out a large quantity of saliva, which the fly projects against a dry surface, swallowing the subsequent solution. Naturally, solid particles, living organisms, parasites, and eggs, small enough, may pass into this digestive tube. Bacilli of different types and eggs of the nematodes have been observed in the proboscides, stomach, intestinal tract, and defecations. The time that particles remain in the digestive tract of the fly is from twelve hours to twenty-three days. Evidently the digestive secretions are not active for harm, as organisms will not only pass through alive, but increase in number while in transit. There must be some absorption of the toxins of bacilli, for flies die in large numbers which have had the fortune to imbibe such bacilli as those of the plague and anthrax. Flies are large breeders, lay their eggs by preference in horse manure, but also in decaying meat, meat broth, cut melons, dead animals, and even in cuspidors. On these substances their larvæ subsist until they hatch. From ten days to two weeks after the time the egg has been laid the fly is fully hatched. It is estimated that one fly, laying 120 eggs at a time, will have a progeny amounting up to the sextillions at the end of the season. Most writers assert that flies do not travel far from the locality in which they are bred, and little is known as to just what distance they may cover. An interesting condition which occasionally occurs is due to the ingestion of fly larvæ by human beings. Certain species of the larvæ of flies are capable of reproducing larvæ, which accounts for the gastroenteric condition with which they are associated. Bachmann found larvæ of the common house fly in the vomitus of a hard drinker, and the same were found by Cohen in the dejections of a nursing infant. The part of the fly most active for harm is undoubtedly the portion which most care-

fully protects the contained microbe from sunlight and desiccation. From the experiments recited the relative danger is as follows: The dejecta, the proboscis, the crushed or ingested insect, and the outside parts. Every privy, every open window, every dead animal in the street, expectorations of people suffering or incompletely recovered from any infectious disease, the nares of scarlatinal patients suffering from catarrh or acquired colds; in fact, all conditions where pathogenic bacteria or intestinal parasites may openly exist, make possible, and even probable, the spread of disease by flies. This, being known, should be acted upon.

5. An Unusual Nidus for Gonococcal Infection.—Ballenger had occasion in this case to use local anaesthesia in the penis by injecting twenty minims of a one per cent. solution of cocaine into the region of the dorsal nerve of the penis close back at the penopubic angle. He states that in circumcision, cauterizing chancroids, replacing the swollen glans penis in paraphimosis, or in any condition where anaesthesia of the penis is desired, it is the only method in which the result may be more promptly and expeditiously obtained. The nerve can be easily found with the artery and vein by picking up the tissues in the middorsal line of the penis back near the symphysis pubis, and rolling them between the fingers. The small hard cord is the nerve. The cocaine need not necessarily be injected into it, but if the different layers of connective tissue immediately around the nerve and its branches be infiltrated the entire penis anterior to this point will be quickly anaesthetized with a very small quantity of cocaine. The author says that so far he has not amputated a penis, using this method, but he does not see a reason why the operation could not be done under this anaesthesia, where there is no necessity for making the incision too near the root of the penis. If occasion demands, a few drops of adrenalin chloride solution may be added to the cocaine to prolong its effect.

BRITISH MEDICAL JOURNAL.

January 12, 1907.

1. Arterial Sclerosis, By W. P. HERRINGHAM.
2. Remarks on Some Points in the Pathology and Treatment of Adherent Pericardium, By K. F. WENCKEBACH.
3. Anomalous Cases of Pernicious Anæmia, By G. L. GULLAND.
4. Observations on the Poisoned Spines of the Weever Fish (*Trachinus draco*), By H. M. EVANS.
5. Preliminary Note on the Development of *Piroplasma Cms* in the Tick, By S. R. CHRISTOPHERS.

1. Arterial Sclerosis.—Herrington states that it is common knowledge that arterial sclerosis as seen in man may be due to certain poisons, such as that of syphilis, lead, and alcohol. Chronic diffuse nephritis, too, in young people can produce endarteritis. But the great majority of cases of arterial sclerosis do not fall under these heads, and in them the cause is still undecided. While atheroma and endarteritis tend in their turn to raise the blood pressure by offering increased resistance, they seem to be often, and perhaps usually, the result of a high pressure antecedent to themselves. Thus the loss of elasticity in the arteries, instead of causing the high pressure, is the result of the same, as is evidenced by the fact that all such arteries are widened before losing their elasticity. It probably requires considerable time for increase of pressure to deprive arteries of their elasticity. When we enquire into the conditions bringing about the rise in blood pressure, we enter into a region of many theories and few facts. The high pressure is due to increased resistance, which in turn may be due to disease in the bloodvessels, to increased viscosity of the blood, or to the presence in the blood of toxins, undigested products, extracts of animal tissue, excretory substances,

etc. The first necessity in treatment, if the symptoms are severe, is rest in bed; a good many cases improve under this alone. A certain amount of regulated exercise should be taken daily; the patients should rise early; and, if men, they should renounce tobacco. Smoking raises the blood pressure in man just as certainly as does the injection of nicotine into animals. In some cases severe symptoms are for the time greatly relieved by nitrites. But their effect is usually transient. No drug approaches calomel. Given in small doses of half or one grain every night for a short time and repeated at intervals, it is often of great value. It is needed for its alterative, not its purgative effect. Alkalies act by increasing the flow of urine. Diet is more important than habits or drugs; a very light diet often acts like a charm when the cause of the high pressure is the presence of an impurity in the blood. When it is due to permanent changes in the vessels, it is necessary for the blood flow, and the heart must be strengthened for its task by rest and small doses of digitalis. Meat should not be prohibited; most patients do much better with meat than without it, but the total of their food must be kept at a very moderate level, as their means of disposal of refuse are crippled. This is especially true in cases of chronic nephritis; the blood pressure will probably not be reduced, because of disease of the abdominal vessels. These vessels have a preponderating effect upon blood pressure, and are nearly always diseased in chronic nephritis of middle life. The degenerating renal tissue pours a toxine into the circulation which can only be removed by increasing the flow of urine; change of diet has no effect. Chemical analysis of foods has farther to go than the estimation of calories or nitrogenous contents; personal observation often tells far more than chemistry. Carbohydrates, and salines have little or no effect upon blood pressure.

3. Pernicious Anæmia.—Gulland thinks that pernicious anæmia is becoming more common. It is not essentially a blood disease at all, but is a toxæmia of largely unknown, and possibly very various origin, which affects the blood, the blood forming organs, the nervous system, and the gastrointestinal tract in infinitely varying proportions. The writer cites a number of aberrant cases; in some the patients were supposed to be suffering primarily from locomotor ataxia or neuritis; in other groups of cases the most prominent symptoms may be those of gastrointestinal, gastric, or renal trouble. Many patients with pernicious anæmia die of what in other cases would be called uræmia. In certain cases the symptoms are those of nervous prostration. The essential point in the diagnosis of pernicious anæmia is a high color index; *i. e.*, a condition in which the red corpuscles, on the average, carry each more than their proper amount of hæmoglobin. Pernicious anæmia is seldom, if ever, an acute disease. A careful history will almost always show that there has been a long period of gradually failing health preceding the fatal attack. Treatment is of much value only in cases which are diagnosed reasonably early. At present there is no means of curing pernicious anæmia, except those cases associated with the presence of *Bothriocephalus latus* in the intestine where the worm can be expelled at an early stage of the disease. It is quite definitely proved to the writer's mind that the toxæmia of most of the pernicious anæmias seen in England is due to some process in the alimentary canal, but he does not look upon the mouth as the essential source of the condition, nor that the streptococcus or any other known organism is responsible for the condition. The organism of pernicious anæmia—if it is an organism—has still to be found. The blood of pernicious anæmia represents in some ways a throw back to the blood of foetal life, and it is

possible that there may be an inherent weakness of the resisting power and of the blood forming organs which allows the bacterial processes of the intestine to get out of hand, so that quite ordinary organisms acquire an unusual virulence, and set up the hæmolytic and other toxic processes of pernicious anæmia. The main indications for treatment are three: To bring the patient under the best conditions possible, to diminish bacterial changes in the intestine, and to stimulate the blood forming organs. The first indication is to be met by rest in bed, which should be insisted on until the patient is well on the road to recovery. Plenty of sunshine and fresh air should be obtained, and all disturbing influences such as excitement or worry be removed. Diet is of the greatest importance; as long as the blood count is low, it should consist entirely of milk and farinaceous food. This diminishes bacterial processes in the intestine; it may be necessary to supplement this with intestinal disinfectants such as salol and calomel, or to give high saline enemata daily. As hydrochloric acid is deficient in the gastric juice, a mixture of that acid and pepsin is often beneficial. For the necessary stimulation of the blood making organs arsenic is by far the most useful drug; it should be begun with small doses, increased rapidly until intolerance is shown, and then continued at about half the dose. Iron is an absolute poison in pernicious anæmia, upsetting the digestion; besides, it is unnecessary, as there are enormous quantities of iron in the liver. The author has never had any good results from bone marrow or from anti-streptococcic serum. The younger the patient the more rapid the course as a rule. Constitutional disorders (syphilis, etc.) render the prognosis less favorable. It is impossible to make a prognosis from the blood during the downward course of an acute attack. But a high color index, high leucocytosis, and many megaloblasts are unfavorable. A constantly raised temperature is of bad omen.

LANCET

January 12, 1907.

1. The Pathology and Treatment of the Ocular Complications of Gonorrhœal Infection,
By W. J. McC. ETTLES.
2. On Substances Favoring and Inhibiting the Action of the Hæmolysins of Bile and Serum,
By M. A. RUTER and M. CRENDIPOPOULOU.
3. Three Stomach Cases from a Physician's Standpoint: A Postgraduate Clinic,
By W. RUSSELL.
4. A Case of Paratyphoid Fever in Mauritius,
By D. B. SPENCER and H. E. STADDON.
5. On White-Wine Whey in Infant Feeding,
By B. E. MYERS and G. F. STILL.
6. Sclerodermia and Myositis,
By J. A. NIXON.
7. Ruptures of the Urethra, Intrapelvic and Perineal,
By E. DEANESLY.
8. Gallstones in the Appendix,
By H. A. LEDIARD.
9. Pneumothorax from Puncture of the Pleura,
By J. C. F. D. VAUGHAN.
10. A Suggestion for the Treatment of Cases of Chronic Sciatica and Similar Forms of Neuritis,
By J. C. WEBB.
11. A Case of Influenzal Meningitis,
By J. S. C. DOUGLAS.
12. The Persistency of the Infection in Certain Cases of Scarlet Fever,
By H. P. BERRY.
13. A Case of Dermoid Cyst in the Ramus of the Jaw,
By N. J. F. VAZIFDAR.

1. **Gonorrhœal Ophthalmia.**—Ettles tells us in the history of gonorrhœa four signal successes stand out in strong relief. First, the recognition of gonorrhœa as a distinct pathological entity in 1831. Second, the discovery of the gonococcus by Neisser and Bouchard in 1878. Third, the fulfilment of Koch's postulates by Bumm. Fourth, the discovery of the influence of the silver salts by Credé in 1880. The striking value of Credé's method is shown in the figures of large maternity hospitals where it is rigidly enforced. It is hard to apply it in private practice, but fortunately

we now have at our command the organic compounds of silver which have even more prophylactic value than the nitrate without possessing its irritant properties. In view of the tragic potentialities of the disease their use should surely be compulsory. The cleansing of a newborn infant's eyes should never be left to the nurse. Like the urethral affection the clinical history of gonorrhœal ophthalmia may be divided into the stages of incubation, copious discharge, and ocular gleet. But the incubation period is much shorter, it having been accurately determined to be about sixty hours. There may be a true metastatic or endogenous infection, due in some cases to the presence of the organism, in others to that of a toxine. In all cases there is a preexisting focus of infection. In adults disease of the posterior urethra is invariably present, while joint affections are commonly associated. In gonorrhœal iritis, we have a well defined complication, not dependent upon the presence of the microbe in the lesion, invariably associated with posterior urethritis and generally with arthroses. On the question of remedies, there is an universal admission of the specific value of silver salts. The author relies on the latter, but admits that one serious drawback is the need for their continuous use in serious cases—every half hour, day and night. Whereas with the nitrate, three applications a day are usually sufficient. In all adult cases he divides the external canthus, one blade of a pair of strong scissors being pushed under the commissure as far as it will go, and the intervening tissues being severed at a single stroke. This greatly facilitates proper treatment, the cornea being at once freed from pressure, and articular spasm being done away with. Even more valuable is the free access to the retrotarsal folds. When the swelling has subsided there is very little wound left, and blepharoplasty is not necessary. Although cold dressings are in general use, the writer favors hot applications. When the stage of ocular gleet is reached, the simple astringents are of more use than the antiseptics.

6. **Sclerodermia and Myositis.**—Nixon states that there is a considerable amount of evidence that the muscular changes of sclerodermia are (together with the skin changes themselves) merely a local manifestation of a general disease, an infective inflammatory affection resembling in many points the rheumatic infection. Sclerodermia may be localized, with a patch of glossy, hard, ivory skin, or generalized with more or less widespread "hide bound" appearance, thick immobile parchment integument, with the natural folds of the skin obliterated, and expression lost in the face giving rise to the *masque sclérodémique*. The cellular elements of the skin disappear together with the elastic and fatty tissue, the vessels become narrowed or obliterated, and the collagenous bundles hypertrophy. Ultimately the whole affected area becomes atrophied into a thin parchment-like cutaneous plate without a papillary layer or subcutaneous tissue, but covered with atrophied epidermis. The dependence of sclerodermia and the allied muscular atrophies upon nerve lesions is at best but a matter of conjecture; in most cases no changes in the nerves are found. But the evidence of primary inflammation in the muscles of either an acute or chronic variety, ending as a rule, in a fibrosis, is amply corroborated by clinical and pathological facts. Beyond this it is difficult to penetrate clearly, and the indications seeming to point to an acute or chronic infection which affects mainly muscle and subcutaneous tissue, resulting in a sclerosis of the skin and muscle, an infection to which perhaps persons suffering from other general diseases are peculiarly liable, and especially the subjects of Graves's disease, myxœdema, Raynaud's disease, Addison's disease, and nerve degenerations. Myositis of a localized nature,

going on to contraction and sclerosis of a single muscle or group of muscles, is commoner than has been supposed. The disease, of which this is only one manifestation, may run an acute, subacute, or chronic course, and on occasions may involve the skin giving rise to one type of sclerodermia.

10. Sciatica.—Webb has obtained excellent results from the use of static electricity in the treatment of chronic sciatica and similar forms of neuritis. Static electricity differs radically from currents derived from battery or dynamo on the one hand, and from high frequency currents on the other. Its voltage is enormous, its amperage infinitesimal, and its frequency of pulsation anything the operator wills. In the cases here referred to he uses the Morton wave current, the brush, and indirect sparks.

11. Influenzal Meningitis.—Douglas reports a fatal case of meningitis in a female infant, aged ten months. In the spinal fluid withdrawn during life by lumbar puncture, were found many feebly staining, fine, short bacilli, corresponding culturally and morphologically with the influenza bacillus. The same organism was found on the surface of the brain, in the intraventricular fluid, and in the mucus from the middle ear.

12. Scarlet Fever.—Berry, in an epidemic of 331 cases of scarlet fever, observed nineteen cases which after apparently complete disinfection and recovery, gave rise to twenty-eight other cases. In one instance the original case occurred in November, 1905, and the "return" case in October, 1906. The writer holds that just as is the case in gonorrhoeal gleet, the infection of scarlet fever may persist, possibly in the nasal chambers, and lie dormant until some suitable condition renders it capable of transmission. Many cases attributed to the harboring of infection in clothing are probably due to infection from the convalescent patient himself.

LA PRESSE MEDICALE.

January 5, 1907.

1. **Diagnosis of Tuberculosis of the Genitourinary Apparatus from Microscopical Examination of the Urine.** By J. MOSCOU.
2. **Karyogamic Theory of the Pathogeny of Cancer,** By L. HALLION.
3. **Ætiology and Pathology of Nutmeg Liver,** By EMILE GERAUDEL.
4. **Modification of the Operation for Hydrocele,** By ROBERT SIEGEL.

1. Diagnosis of Tuberculosis of the Genitourinary Apparatus from Microscopical Examination of the Urine.—Moscou does not believe that the presence in the urine of leucocytes which present the changes which have been described as characteristic of leucocytes in the urine of tuberculous patients is sufficient as a basis for diagnosis in the absence of other symptoms.

3. Ætiology and Pathology of Nutmeg Liver.—Geraudel states that nutmeg liver, hæmorrhagic hepatitis localized on the surface of that organ is a hepatic change independent of cardiac lesions, due purely and simply to the causes of hepatitis in general.

January 9, 1907.

1. **Stenosis and Atresia of the Cervix in Women Who Have Borne Children.** By F. JAYLE.
2. **The Habitation. Hygiene of the Stairs. Bad Stairs. Good Stairs,** By A. AUGUSTIN REY.
3. **The Cough of the Tuberculous,** By CH. MANTOUX.
4. **Practical Method for the Examination of the Rings of Reaction in the Analysis of Urine,** By C. J.
5. **Subacute Peritonitis from Salpingitis in Young Girls,** By R. ROMME.

1. Stenosis and Atresia of the Cervix in Women Who Have Borne Children.—Jayle remarks that the conditions which give rise to these accidents require active therapeutics more than the accidents themselves. He finds dilatation to be difficult, either with tents, elec-

trolysis, or operation, but says these may be practised when there is sterility with desire for a new pregnancy. He advocates amputation of the cervix, but when serious complications have arisen, pyometra in particular, hysterectomy may become necessary.

2. Hygiene of the Stairs.—Rey presents with many illustrations his ideas in regard to how stair cases should be built with an eye to air, light, and other hygienic considerations.

January 12, 1907.

1. **Corrections Apropos of the Question of Aphasia,** By PIERRE MARIE.
2. **Antityphic Serum,** By A. RODET and LAGRIFOUL.
3. **The Importance of the Examination of the Mouth in Cases of Doubtful Syphilis,** By L. M. PAUTRIER.
2. **Antityphic Serum.**—Rodet and Lagriffoul name as the important characteristics of an antityphic serum agglutinative power, bactericide power, antialexic power, antiinfectious power, antitoxic power, and favoring power, which may perhaps be confounded with antialexic power. The problem in antityphic serotherapy is to develop to the maximum the useful properties and to avoid or reduce to a minimum the others.

LA SEMAINE MEDICALE

January 2, 1907.

Puerperal Autoinfection From the Clinical Point of View. By Professor R. DE BOVIS.
Puerperal Autoinfection.—De Bovis discusses this subject at considerable length with many references to the literature.

January 9, 1907.

1. **The Epidemic of Miliary Fever at Charentes in 1906 and the Lessons to be Learned as to the Nature and Contagiousness of This Disease,** By ANDRÉ VIGNOL.
2. **Attenuated Pyæmia,** By F. LEJARS.
1. **The Epidemic of Miliary Fever in 1906.**—Vignol gives an account of former epidemics, a description of the disease, and then of the epidemic which started last year in Genac and spread into the surrounding territory. He discusses at some length the manner of transmission of the infection and the course followed by the epidemic. Prophylactic measures to restrain its development, aside from the practice of disinfection, are unknown.
2. **Attenuated Pyæmia.**—Lejars reports the case of a man, twenty-five years of age, who developed a general staphylococcic infection as the result of a slight excoriation of the left index finger. Appendicitis developed for which he was operated upon with satisfactory result. Recovery was complete in about a year.

BERLINER KLINISCHE WOCHENSCHRIFT

December 24, 1906.

1. **The Development of Knowledge Regarding Ozæna,** By B. FRÄNKEL.
2. **Concerning the Forensic Value of the Neisser-Sachs' Procedure of Complement Diversion (Komplement-ablenkung),** By A. SCHÜTZE.
3. **Concerning the Measurement of the Blood Pressure in Man,** By H. J. BING.
4. **In Regard to the Question of the Spirochæta,** By W. SCHULZE.
5. **The Silence Treatment in Laryngeal Tuberculosis,** By LUBLINSKI.
6. **The Pathology, Diagnosis, and Clinical Signification of the Extrasystole of the Heart,** By A. BICKEL.

1. The Development of Knowledge Regarding Ozæna.—Fränkel traces the advances which have been made in this subject from the time when the term ozæna was applied to every condition of the nose which was productive of a bad odor down to the present time, and points out that much work still remains to be done before we shall be able to assert that our knowledge is mature and certain.

2. The Neisser-Sachs's Method.—Schütze endeavors to answer the questions: Is the Neisser-Sachs's method

specific? What advantages does it possess over the Uhlenhuth-Wassermann-Schütze method? What sources of error does it present? In how far is it in position to complete the precipitation method? The article is quite scientific, as well as controversial, and does not lend itself readily to abstraction. It should be read in the original.

3. Measurement of Blood Pressure.—Bing concludes as the result of his studies that the pressure which is measured by the usual clinical apparatus for that purpose is independent of the condition of contraction in which the vessels below the place of compensation may be, so that changes in the lumen of these vessels are in position to call forth a change of pressure without a corresponding change in the aortic pressure being necessarily present. He also says that with this apparatus it is not the end pressure of the brachial artery which is measured, as has been commonly assumed, but its lateral pressure.

5. The Silence Treatment in Laryngeal Tuberculosis.—Lublinski advocated twenty years ago absolute silence for months at a time for patients with this laryngeal disease, and now states that he has obtained good results therefrom.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT

January 1, 1907.

1. Concerning the Existence and Treatment of Disturbances of Nutrition in Infants, By PFÄUNDLER.
2. Infant Mortality in the Hospital, By SOLTSMANN.
3. Statistics and the Care of Infants, By SCHLOSSMANN.
4. The Station for Giving Advice to Mothers and the Preparation of Infants' Milk in Bonn, By ESSER.
5. The Station for the Care of Infants in Weissenburg, Bavaria, By DÖRFLER.
6. The Demonstration of the Toxine in the Blood of Patients with Diphtheria, By FRAENKEL.
7. Concerning Air Massage, By KLAPP.
8. The Relations of the Orbit to the Pterygopalatine Fossa, By KRAUSS.
9. The Filling of the Bladder with Oxygen for the Purposes of Cystoscopy and Radiography, By BURKHARDT and POLANO.
10. The Treatment of Gonorrhoeal "Posteriorocystitis" on the Part of the General Practitioner, By NEUMAYER.
11. Two Cases of Aura' Vertigo Cured by Operation, By ISEMER.
12. Concerning Treatment of Gastric and Intestinal Hæmorrhages with Fluid Gelatine, By MANN.
13. To Karl v. Pfeufer On His One Hundredth Birthday.

2. Infant Mortality in the Hospital.—Soltmann presents, in tabulated form, the infant mortality during each year, and each month from 1900 to 1905 inclusive in the hospital at Leipsic. The tables show the number of admissions, discharges, and deaths, and also the percentages. The absolute number is not proportional to the percentage of deaths, as is shown by the records of 1906, the year in which the number of admissions was the smallest and the proportion of mortality the highest (65.2 per cent.).

4 and 5. Stations for the Care of Infants and the Advice of Mothers.—Esser and Dörfler describe in detail the stations established in Bonn and Weissenburg for the stated purposes. Kitchens for the preparation of milk for infants' use form a part of the stations. Esser's paper is largely statistical.

6. The Demonstration of the Toxine in the Blood of Patients with Diphtheria.—Fraenkel believes that the accumulation of the toxins of the Löffler bacillus in the blood of diphtheria patients is not sufficiently marked to render this test of practical value.

8. The Relations of the Orbit to the Pterygopalatine Fossa.—Krauss presents considerations which seem to him to suffice to indicate that the normal and abnormal relations of the orbit to the pterygopalatine fossa, which forms its posterior outer boundary, need to be cleared

up, and that the anatomical relations of the orbit should be revised with special reference to the inferior orbital fissure and the conduction of the venous blood from the orbit.

9. The Filling of the Bladder with Oxygen for the Purposes of Cystoscopy and Radiography.—Burkhardt and Polano report that filling with oxygen, rather than with air, because the oxygen is certainly free from germs, there is no danger of embolism if it should enter a vein, and the patients do not suffer the unpleasant sensation of heat from the employment of an electric light in the bladder, of which they complain when air is employed.

11. Aural Vertigo Cured by Operation.—Isemer reports two cases of chronic suppurative otitis media in which attacks of sudden vertigo brought the patients to the hands of the surgeon. The radical operation was performed in each case with complete relief to the vertigo.

12. Concerning Treatment of Gastric and Intestinal Hæmorrhages with Fluid Gelatine.—Mann gives very brief histories of nine cases of hæmorrhage from the stomach and intestine in which the fluid gelatine recommended by Dr. Erich Cohn was administered. The results were eminently satisfactory in eight, but in one, a very severe case of typhoid fever with numerous ulcers in the intestine, the hæmorrhage recurred and the patient died. He used a 200 grammie mixture containing two grammes of citric acid and 20 grammes of syrup of orange peel.

Proceedings of Societies.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

One Hundred and First Annual Meeting, Held at Albany on Tuesday and Wednesday, January

22 and 23, 1907.

The President, Dr. JOSEPH D. BRYANT, in the Chair.

The president called the House of Delegates to order at eight o'clock. The business of this meeting was to hear the reports of the various officers and committees.

The first report rendered was that of Dr. WISNER R. TOWNSEND, the secretary. It included the year ending December 31, 1906. He reported four meetings of the ad interim House of Delegates, two in Albany and two in New York. He also reported fifty-seven county medical societies in the State, all of which had adopted the new constitution and by-laws of the amalgamated society.

As to membership, owing to the fact that most of the county societies did not reorganize until some time during the spring, it was impossible to get the exact membership on January 1, 1906.

Members on Jan. 1, 1906	6,378
Members on Dec. 31, 1906	6,208
Members on Jan. 1, 1907	6,208
Total membership, December 31, 1906	6,588
Proportion of paid up membership calculated on January 1, 1907	5,807

Report of Committee on Scientific Work, rendered by Dr. LEO H. NEUMAN. The committee, after consultation with the State officers, decided to have the scientific programme completed in two days instead of three or four days, as had been the custom heretofore.

Report of Committee on Arrangements was made by Dr. WILLIAM NELLIS, and was very brief; simply referring to the arrangements made for the 1907 meeting.

The Report of the Treasurer.—Dr. ALEXANDER LAMBERT read this report:

CASH RECEIPTS FOR THE YEAR ENDING DECEMBER 31, 1906.	
To Balance, State Society	\$2,567.70
Less applied to 1905	438.00
	\$2,129.70
Balance New York State Medical Association, January 1st	1,541.52
To the Gutierrez & Trust Co., bond and mortgage, January 17, 1907	3,294.28
Sundry receipts during the year	67.17
Directory catalogue sale	1,000.00
Directory advertising	1,502.10
Directory sales, 1905-06 edition	1,099.50
Advancement Journal, January and February	857.39
Interest on 1906 deposit	174.61
Centennial history	158.69
Constitution on 1906 annual meeting, 1906	204.75
Dues for 1906	334.60
Dues for 1907	17,168.50
Total	\$30,045.06
The total list of cash payments amounted to	24,716.87
Leaving a balance of	\$5,328.19

The profit and loss account of the *New York State Journal of Medicine* for ten months ending December 31, 1906, showed a net loss of \$2,319.76.

The Medical Society of the State of New York, income and disbursements for the year ending December 31, 1906, showed an excess of income of \$3,234.29.

Committee on Prize Essays.—Dr. ABRAHAM JACOBI reported that there had been no essays presented during the past year.

The Committee on Public Health, composed of Dr. J. L. HEFFRON, Dr. H. C. HOPKINS, and Dr. H. D. WAY, was next in order. This report called attention to the fact that there had been a recent awakening of the public mind upon the fundamental facts of public hygiene such as no similar period had ever witnessed. It spoke of the pure food laws and good water supplies as being necessary to public health. And reference was made to the fact that the question of sewage disposal was not a local matter, but one of interstate and even international importance, citing as instances the Genesee, the Susquehanna, the Hudson, and the St. Lawrence rivers. The committee commended the action of the American Society for the Advancement of Science in the appointment of a committee of one hundred of the eminent leaders in the profession to consider and propose the best way by which a National Department of Public Health might be established. The committee also recommended that this society endorse the formation of a National Department of Health, and that it pledge its influence to carry into effect such a plan as this committee might formulate.

The committee further advised that a concerted movement be made in every county for the establishment of a bacteriological laboratory under the supervision of a bacteriologist of recognized ability, to which every physician in the county might send specimens for analysis.

The report deplored the weight which politics had in the appointment of public health officers and recommended the Board of Regents to create a degree of Doctor of Public Health, which should be granted to such persons as had taken special postgraduate courses in the science of public health in recognized schools of medicine.

Finally, the committee urged the society to take action favoring the passage of a bill demanding the same education for all those who would practise the art of healing.

The Committee on Legislation reported, through its chairman, Dr. ARTHUR G. ROOT, that there had been

thirty-six bills pertaining to public health and the practice of medicine introduced into the Assembly. Of these, thirty-one were not reported out of the committees to which they were referred; four were passed and signed by the governor; and one passed both houses, but was vetoed by the governor. In the Senate, sixteen bills were introduced, and, of these, one was signed by the governor. There were several bills which had an important bearing on the medical profession. Two bills referring to osteopathy were introduced and one came very near being carried.

A most important measure was introduced in the Assembly and known as the Assembly Public Health Committee's bill. The object of this bill was to regulate the practice of medicine and the establishment of one medical board for all medical schools, irrespective of sect or creed. This bill was vigorously opposed by the homœopaths, and by reason of its late introduction was not reported out of committee.

The Committee on Publication, composed of Dr. E. ELIOT HARRIS, Dr. FLOYD M. CRANDALL, Dr. HERMAN BIGGS, Dr. ALEXANDER LAMBERT, and Dr. A. T. BRISTOW, was next to report.

It called attention to the nature of the advertising which the journal of the society would print. It acknowledged the valuable services rendered to the general public by *Collier's Weekly* and the *Ladies' Home Journal* in exposing poisonous drugs contained in secret medicines, and especially commended their work in leading to the enactment of the pure food law.

It recommended the medical schools and colleges to so perfect their courses in materia medica and allied subjects that their graduates would be thoroughly competent to select and use official preparations, and not have to resort to proprietary remedies.

The committee referred to the improvement made in the past year in the journal of the society and to the very complete directory of 1906, but also stated that, owing to an unusual demand, the supply had been exhausted, and the committee suggested that a committee of three be appointed to decide what allowance should be made those who failed to receive a copy of the directory.

The report recommended certain rules to be adopted as the basis for accepting advertising in the publications of the society.

Report of the Editor of the New York State Journal of Medicine.—While the report of the ten numbers showed a deficiency of \$2,319.76, it was being done while the journal was being improved, and now the journal had become self supporting. The circulation of the journal had been materially increased by the amalgamation of the two societies.

Dr. JAMES TAYLOR LEWIS next presented a series of malpractice cases conducted by the society. He reported thirteen unfinished cases at the beginning of the year 1906, in two of which the defense won. Then he reported thirty cases brought up during the year 1906, of which five were won by the defense and the rest were either unsettled or pending.

The Election of Officers was as follows:

President, Dr. F. C. Curtis.
First Vice-President, Dr. J. C. Bierwirth.
Second Vice-President, Dr. Edw. Torry.
Third Vice-President, Dr. N. G. Richmond.
Secretary, Dr. Wisner R. Townsend.
Treasurer, Dr. Alexander Lambert.

DELEGATES ELECTED:

Delegate to the American Medical Association for one year: Dr. Douglas C. Moriata.

Delegates to the American Medical Association for two years: Dr. E. H. Bartley, Dr. W. S. Ely, Dr. S. L. Elsner, Dr. Roswell Park, Dr. A. T. Bristow, Dr. H. D. Wav.

Delegate to the National Committee on Legislation: Dr. Frank M. Van Fleet.

Delegates to the Committee on Medical Education of the American Medical Association: Dr. A. Vander Veer, Dr. W. F. Campbell, Dr. E. Fisher.

Committee on Prize Essays: Dr. Abraham Jacobi, Dr. E. B. Angel, Dr. Roswell Park.

Candidates to Medical Examining Board: Dr. E. Beach, Dr. J. P. Creveling, Dr. E. M. Moore, Dr. W. J. Nellis.

Committee on Scientific Works: Dr. Leo Neuman, chairman; Dr. A. T. Bristow, Dr. W. W. Potter.

Committee on Legislation: Dr. A. G. Root, chairman; Dr. E. Wende, Dr. E. Le Fevre.

Committee on Public Health: Dr. F. L. Heffron, chairman; Dr. H. D. Way, Dr. H. R. Hopkins, Dr. W. B. Weeder.

Committee on Arrangements: Dr. W. P. Nellis, Dr. H. Bendell, Dr. A. G. Root, Dr. H. Shaw, Dr. H. C. Gardiner, Dr. W. L. Krauss, Dr. A. Vander Veer, Dr. W. C. Phillips.

A resolution was advanced by Dr. Lucien Howe, of Buffalo, providing that a committee of five be appointed to investigate the advisability of holding some of the meetings in other cities than Albany. The resolution was carried, but the appointment of the committee was deferred.

A motion was made that the council be empowered to temporarily fill any vacancies which might occur during the year. This, however, was lost.

A motion was made that the medical schools be advised to include diseases of the mind in their curricula. Dr. Jacobi, in defense of this motion, lamented the backwardness of the medical schools. To this Dr. Rochester, of Buffalo, and Dr. Macdonald, of Albany, replied, stating that such courses had been instituted in the Buffalo college and Albany college, respectively, some five or ten years ago. After a rather humorous discussion the motion was carried.

Dr. Macdonald next introduced a resolution regulating the use and sale of cocaine, which was carried.

President's Address.—The first feature of the scientific session was a brief but interesting address by the president, after which the consideration of the various papers was immediately taken up.

Danger Signals of the Skin.—The first paper was presented by Dr. L. DUNCAN BULKLEY, of New York. He pointed out briefly the significant rôle played by the skin in the human economy as the regulator of temperature, the excretory function, etc., and the vital relation it bore to the rest of the body, as was shown by intestinal ulcers after extensive burns. He showed that the condition of the skin should be taken as an index of the conditions prevailing elsewhere in the organism, thus in syphilis the skin was often the key to many of the subsequent difficulties, such as locomotor ataxia, brain tumor, and heart, liver, and kidney lesions.

He referred to the brief and often valueless treatment given to syphilitic patients at many of the mineral springs, recounting how the patient was misled and how affections might later develop.

Eczema, he continued, was too often regarded as a purely local disease, while in point of fact it was often a signal of a more important condition. Thus, general eczema was often a sign of physical and nervous breakdown, while the localized disease might be regarded as nervous or metabolic in origin. Thus, this affection, with all its discomforts, might be considered a blessing in disguise, inasmuch as it enlightened the physician as to the existing internal condition.

He further showed that acne, while often disregarded, was a sign of metabolic disturbance associated with constipation and due often to a breakdown, overstudy, confinement, etc. Cold, clammy hands and feet

should lead to further examination. The relation of acne to the men and the sexual apparatus was shown to be intimate, and errors in diet or gastric disorder might cause it. Thus, if its meaning was correctly interpreted, acne might be a benefit.

The significance of psoriasis was next treated of. It was declared that psoriasis might follow nervous strain, febrile disturbances, or nursing, and was often associated with urinary disorders, such as a decreased or increased amount of urine.

Chronic urticaria was seen to be due often to faulty metabolism and digestive disturbances, and pruritus suggested lowered nerve vitality.

The paper pointed out the fact that boils and carbuncles were too often regarded as purely local affairs, and that it was now known that some other cause must be associated, for pus organisms could not grow without suitable media. The signal given by dermatitis maligna was to warn against carcinoma of the mammary gland.

Lupus vulgaris often indicated a tuberculous lesion elsewhere in the body. The significance of exanthematous rashes, rose spots, etc., was next pointed out. As a conclusion, it was stated that the skin should not be regarded as simply a covering for the body, but as an important organ whose signals should be studied, heeded, and correctly interpreted. And all skin lesions should not merely be treated locally, but the underlying cause should be investigated.

Dr. F. C. CURTIS, of Albany, corroborated much that Dr. Bulkley had said, and likened the skin to the tongue as an index of internal conditions.

The Importance of Aural Examination and Functional Tests for Healthy People.—Dr. WILLIAM SOHIER BRYANT followed with this paper. He referred to the great frequency of deafness without the knowledge of the patient, which might be either unilateral or bilateral. As a general rule, he said, chronic ear disturbances did not tend to improve or even remain stationary, but usually became progressively worse. The normal hearing was far more powerful than the needs of ordinary daily life required, so that no defect was noticed until the process had gone on so far as to be practically incurable.

The most frequent cause of deafness was given as chronic middle ear catarrh, with sclerosis and a deposition of calcium salts. The next most frequent causative factor was chronic suppurative disease of the ear, and as the lesion progressed the hearing diminished.

It was shown that the parts once lost could not be regenerated. The drum membrane, however, seemed to be an exception to this. The disease progressed slowly and might even expose the meninges with only an occasional headache.

When rarefaction of the labyrinthine capsule occurred to any extent, the obstacles in the road to cure were shown to be practically insurmountable.

The reader suggested careful and scientific tests to be made upon even healthy persons' ears as a prophylactic measure to most affections.

Dr. ALLEN, of New York, took up the discussion, referring to the hereditary tendency of ear troubles, and also touched upon hereditary eye disturbances.

Practical Legislation for the Prevention of Blindness from Ophthalmia Neonatorum.—Dr. F. PARK LEWIS, of Buffalo, presented a very eloquent and forceful appeal on this subject. He brought out the curability of the disease (as by Credé's method), recommended legal protection for the infant, and deplored the criminal carelessness shown to these helpless infants at birth. He exhibited illustrations, and stated that twenty-six per cent. of all blindness was due to this disease.

He conceded the fact that the child came into the world through an infected medium, but stated that this

infection, if it found its way into the child's eyes, could be effectually destroyed.

He recommended the enactment of four provisions: 1. That the infant is entitled to protection. 2. That the State is entitled to protect itself. 3. To place the means of prevention in the hands of the parents or nurse. 4. Having placed the means of protection in the hands of responsible parties that they be bound to use them.

This, he continued, could only be done by thorough and wider dissemination of information on the subject of gonorrhœa till it was fully understood. Leaflets should be distributed by health authorities, giving warning and instructions. If this was carried out, one fifth of all blind schools would eventually be empty. He did not insist upon any special germicide, but left that to the discretion of the practitioner.

The discussion of this paper was brief, Dr. CALLAN lamenting the indifference of not only the laymen, but the profession as well. Dr. DAVIS agreed to the sentiments embodied in the paper.

A Plea for New Methods in the Prevention of Blindness was the subject of a paper by Dr. LUCIEN HOWE, of Buffalo. He used charts to illustrate the causes of blindness in children, and spoke on the different germicides employed. He showed that the percentage of silver in any preparation was not proportional to its germicidal activity. He concluded with a plea for new methods and some other remedy as efficient as silver nitrate.

Dr. CALLAN opened the discussion with remarks which for the most part agreed with those of the author.

The discussion was continued by Dr. A. Jacobi, who complimented Buffalo upon her excellent supervision of her midwives, etc. He spoke of the great number of women in New York city who were attended by ignorant midwives, and further stated that child-bed fever was as common there now as it was years ago, but that the death certificates were made out to conceal the true cause of death. He approved of a midwife system, but insisted that the women be clean and educated.

Dr. ALLEN referred to the fact that trachoma was frequent in New York and Brooklyn, and was spreading. He advised the appointment of inspectors.

Dr. DAVIS recommended the old silver nitrate solution, but thought that it should be neutralized immediately or within two minutes.

Chloroma was the subject of a paper by Dr. C. S. MERRILL and Dr. A. J. BEDELL, of Albany. The paper was both thorough and scientific, but, owing to the short time left before adjournment, had to be presented hurriedly. The case was one observed at the Albany City Hospital. After the usual clinical history the patient succumbed.

(To be continued.)

Book Notices.

Polypus of the Nose. By EUGENE S. YONGE, M. D., Honorary Assistant Physician, Manchester Hospital for Consumption and Diseases of the Throat. London: Sherratt & Hughes, 1906. Pp. 174.

In a small but admirably composed volume, Yonge gives us his views, not only on the clinical manifestations, the prognosis, and the treatment of nasal polypi, but on the pathological histology, ætiology, and bacteriology of these growths as well. The work is unusually well illustrated, clear, and instructive. The chapter on operative treatment is perhaps the most valuable of all, while the introductory historical résumé is as scholarly as it is interesting.

Geschmack und Geruch. Physiologische Untersuchungen über den Geschmackssinn. Von Dr. WILHELM STERNBERG. Mit 5 Textfiguren. Berlin: Julius Springer, 1906 (through G. E. Stechert & Co., New York). Pp. viii-149. (Price, 4 marks.)

The function of the tongue is a two sided one: To work out the mental nourishment, that is, to reproduce the thoughts in speech; this function has been fully studied—physiology, psychology, and pathology of speech, have found their investigators. But the other function of the tongue, that is, as the organ of taste, has not before been so fortunate. The author has undertaken to make the necessary investigations, experiments, and studies, the result of which he has embodied in this book. He has very thoroughly gone into the subject, and the book gives a clear review of our knowledge of taste.

Conferences on the Moral Philosophy of Medicine. Prepared by an American Physician. New York: Rebman Company. London: Rebman Limited. Pp. xiv-368.

The ethical teaching of this book is excellent. From the literary point of view, it is in some respects rather peculiar, especially in the matter of punctuation. Yet, curiously enough, literary style is one of the subjects that are somewhat prominent in its contents. As regards such matters, however, *quot homines tot sententia*.

The author, evidently an earnest and philanthropic person, inculcates conduct which cannot fail to make physicians more appreciative of each other and more highly esteemed by the laity, and his discourse is never tedious. He has shunned temptation to "lecture" his readers; instead, he entertains them and provides them with many a bit of information. The book deserves to be widely read and seriously pondered. Not since Dr. James Jackson's *Letters to a Young Physician* has there appeared a book that has seemed to us such wholesome reading for medical men.

Animal Micrology. Practical Exercises in Microscopical Methods. By MICHAEL F. GUYER, PH. D., Professor of Zoology in the University of Cincinnati. Chicago: The University of Chicago Press, 1906. Pp. ix-240. (Price, \$1.75.)

This volume is the result of the author's experience as a teacher during the past ten years, and it is intended to guide the student step by step, directing him what to do with his material and telling him why he does it, at what stages he is likely to encounter difficulties and how they may be avoided, and thus drilling him thoroughly in fundamental and standard methods.

As the book is intended to be practical, it describes such methods for the study of histology as the author has found best. There is a section that gives a brief account of the principles of the microscope; in an appendix the formulæ of the most widely used reagents are given; and there is a useful table of a large number of tissues and organs, with directions for their preparation for microscopical study. The volume will prove a useful textbook both for the class and for the individual worker.

BOOKS, PAMPHLETS, ETC., RECEIVED.

Transactions of the American Dermatological Association at Its Twenty-ninth Annual Meeting, held in New York on December 28, 29, and 30, 1905. Official Report of the Proceedings. By Charles J. White, M. D., Secretary.

A Treatise on Orthopædic Surgery. By Royal Whitman, M. D., Clinical Lecturer and Instructor in Orthopædic Surgery in the College of Physicians and Surgeons of Columbia University, N. Y., etc. Third Edition. Philadelphia: Lea Brothers & Co., 1907.

Official News.

Public Health and Marine Hospital Service
Health Reports:

Public Health and Marine Hospital Service, during the

Good Hope—Valparaiso	Jan.	12-19	11	
Holland—Cebu	Jan.	12-19	2	
Holland—Cebu	Jan.	12-19	11	
Holland—Batavia	Jan.	6-17	2	
Holland—Batavia	Jan.	14-21	1	
Holland—South Africa	Jan.	12-19	1	
Holland—New Orleans	Jan.	13-20	2	
Mexico—Atlix	Jan.	12-19	1	
Mexico—Dahab	Jan.	12-19	1	
Mexico—San Juan	Jan.	5-12	1	
Mexico—St. Juan	Jan.	12-19	2	
Montana—Chouteau County	Dec.	1-30	1	
Montana—Powder River	Dec.	1-30	1	
North Carolina—Greenville	Jan.	12-19	1	
Oregon—Clatsop	Jan.	11-18	1	
Texas—Houston	Jan.	5-12	1	
Washington—Spokane	Dec.	29-Jan. 12	16	
Wisconsin—Appleton	Jan.	12-19	1	
Wisconsin—La Crosse	Jan.	12-19	2	
Wisconsin—Milwaukee	Jan.	5-19	8	
<i>Foreign.</i>				
Africa—Cape Town	Dec.	8-15	1	
Brazil—Bahia	Dec.	8-15	2	
Brazil—Pernambuco	Nov.	15-30		26
Brazil—Rio de Janeiro	Dec.	8-22	10	
Canada—Cape Breton, Sydney	Jan.	12		Present.
Chile—Antofagasta	Dec.	24	3	
Chile—Coquimbo	Dec.	24	19	2
Chile—Iquique	Dec.	24		Present.
China—Chefoo	Nov.	13	1	In U. S.
<i>S. Raleigh.</i>				
China—Shanghai	Nov.	26-Dec. 2	1	
Ecuador—Guayaquil	Dec.	1-15		10
Great Britain—Hull	Dec.	22-29		1
Great Britain—Sheffield	Dec.	31-Jan. 7	1	
India—Bombay	Dec.	18-25		1
India—Calcutta	Dec.	8-15		6
Italy—Genoa	Dec.	20-27	1	
Persia—Nine localities	Nov.	30		Present.
Russia—Odessa	Dec.	29-Jan. 5	5	
Russia—St. Petersburg	Dec.	15-29	14	
Spain—Barcelona	Dec.	23-30		2
Spain—San Felleu de Guixols	Dec.	29-Jan. 5		1
<i>Foreign.</i>				
Ecuador—Guayaquil	Dec.	1-15		5
<i>Insular.</i>				
Philippine Islands—Manila	Nov.	25-Dec. 1	1	
Philippine Islands—Provinces	Nov.	25-Dec. 1	115	77
Philippine Islands—Provinces	Dec.	1-8	34	28
<i>Foreign.</i>				
India—Bombay	Dec.	18-25		3
India—Calcutta	Dec.	8-15		109
India—Rangoon	Nov.	17-24		15
India—Rangoon	Dec.	8-15		43
<i>Foreign.</i>				
Australia—Brisbane	Nov.	17-24	2	2
Brazil—Rio de Janeiro	Dec.	8-22	23	9
Chile—Arica	Dec.	21		
Egypt—Alexandria	Dec.	9-31	2	2
Egypt—Suez	Dec.	30	1	
India—Bombay	Dec.	31-Jan. 1	1	
India—Calcutta	Dec.	18-25		10
India—Calcutta	Dec.	8-15		1
India—Rangoon	Nov.	17-24		29
India—Rangoon	Dec.	8-15		18
Mauritius	Nov.	12-16	6	83
Peru—Callama Valley	Dec.	22		Present.
Peru—Mollendo	Dec.	4-18	9	

Public Health and Marine Hospital Service:

List of changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending Janu-

BLUE, RUPERT, Passed Assistant Surgeon. Granted leave of absence for two days, from January 22nd.

LLOYD. B. J., Passed Assistant Surgeon. Ten days' leave of absence granted, from December 24th, amended to read twelve days.

MASON, H. R., Pharmacist. Granted leave of absence for seven days, from January 15, 1907, under Paragraph 210 of the Service Regulations.

SIMPSON, FRIENCH, Assistant Surgeon. Relieved from duty at Baltimore, Md., and directed to proceed to Fort Stanton, N. M., reporting to Medical Officer in Command for duty and assignment to quarters.

WARREN, B. S., Passed Assistant Surgeon. Granted leave of absence for five days, from January 16th.

Promotion.

Assistant Surgeon J. S. Boggess commissioned as passed assistant surgeon, to rank as such from December 5, 1906.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending January 26, 1907:

BISPHAM, WILLIAM N., Captain and Assistant Surgeon. Relieved from duty at Fort Logan, Colo., and ordered to proceed to Fort D. A. Russell, Wyo., and report in person not later than February 20th, to the commanding officer, 10th Cavalry, for duty with that regiment to the Philippine Islands. Upon arrival at Manila ordered to report in person to the commanding general, Philippines Division, for assignment to duty.

COX, WALTER, Captain and Assistant Surgeon. Relieved from duty at Fort Sill, Okla., and ordered to proceed to Fort Robinson, Neb., and report in person not later than February 20th, to the commanding officer, 10th Cavalry, for duty with that regiment to the Philippine Islands. Upon arrival at Manila ordered to report in person to the commanding general, Philippines Division, for assignment to duty.

HESS, LOUIS T., Captain and Assistant Surgeon. Ordered to proceed to Fort Ethan Allen, Vt., to accompany the 23rd Battery Field Artillery to San Francisco, Cal., and on completion of this duty ordered to return to place of receipt of order and revert to his leave status.

LEWIS, WILLIAM F., Captain and Assistant Surgeon. In addition to his other duties at the Army General Hospital, Presidio of San Francisco, Cal., ordered to attend the medical needs of Fort Mason, Cal., and act as attending surgeon, Headquarters, Department of California.

MURTAGH, JOHN A., Captain and Assistant Surgeon. Granted leave of absence for one month, with permission to apply to the Military Secretary of the Army for an extension of one month.

WOLFE, EDWIN P., Captain and Assistant Surgeon. Relieved from duty at Fort Hancock, N. J., and ordered to proceed to New York city and report in person to the officer in charge of the Medical Supply Depot in that city for duty in that depot.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending January 26, 1907:

CURL, H. C., Surgeon. Detached from duty with the Department of Government and Sanitation, Canal Zone, and ordered to report to the Surgeon General of the United States Navy, Washington, D. C., for special duty.

DUNIGG, J. T., Assistant Surgeon. Ordered to the Naval Hospital, New York, N. Y.

EVANS, S. G., Surgeon. Ordered to the Naval Hospital, Charleston, S. C.

GILL, J. E., Assistant Surgeon. Detached from the *Dubuque* and ordered to the Naval Recruiting Station, Kansas City, Mo.

GROW, E. J., Surgeon. Ordered to the Marine Recruiting Station, New York, N. Y., and to additional duty in attendance upon officers and men of the Navy and Marine Corps of New York city not otherwise provided with medical aid.

MICHEL, R. H., Assistant Surgeon. Orders of January 4th modified; detached from the Naval Recruiting Station, Kansas City, Mo., and ordered to the *Dubuque*.

ODELL, H. E., Passed Assistant Surgeon. Ordered to the Newport Naval Hospital.

PICKRELL, G., Surgeon. Detached from the Bureau of Medicine and Surgery, Navy Department, and ordered to the Naval Academy.

REEVES, I. S. K., Passed Assistant Surgeon. Detached from the *Scorpion* and ordered to the Naval Medical School Hospital, Washington, D. C., for treatment.

RUGE, O. G., Pharmacist. Appointed a pharmacist from January 15, 1907.

SCOTT, T. W., Pharmacist. Appointed a pharmacist from January 15, 1907.

STIBBENS, F. H., Assistant Surgeon. Appointed an assist-

ant surgeon, with the rank of lieutenant, junior grade, from January 4, 1907.

STRINE, H. F., Passed Assistant Surgeon. Detached from duty in the Naval Hospital, New York, N. Y., and ordered to the Naval Hospital, Naval Academy, Annapolis.

THOMPSON, E., Surgeon. Detached from the Naval Station, Charleston, S. C., and ordered to the Naval Station, Guantanamo, Cuba.

WRIGHT, B. L., Surgeon. When discharged from treatment at the Naval Hospital, New Fort Lyon, Colo., ordered to duty in that hospital.

Births, Marriages, and Deaths.*Born.*

McCULLOCH.—In Fort Meade, South Dakota, on Sunday, January 20th, to Dr. Champe Carter McCulloch, Jr., U. S. Army, and Mrs. McCulloch, a daughter.

WILSON.—In Fort Hamilton, N. Y., on Monday, January 14th, to Dr. William H. Wilson, U. S. Army, and Mrs. Wilson, a son.

Married.

HAUVER—REMSBURG.—In Middletown, Maryland, on Wednesday, January 16th, Dr. Roy V. Hauver and Miss Margaret E. Remsburg.

LUKIN—THORNTON.—In Pamplin City, Virginia, on Wednesday, January 16th, Dr. Frank H. Lukin and Miss Alice Thornton.

REYNOLDS—DOBELBOWER.—In Philadelphia, on Wednesday, January 23rd, Dr. Victor M. Reynolds and Miss Lulu Annette Dobelbower.

STOLTE—GRAY.—In New York, on Friday, January 18th, Dr. Hermann Stolte, of Milwaukee, and Mrs. F. Gray, of Graetz, Germany.

Died.

ADAIR.—In St. Paul, Minnesota, on Thursday, January 10th, Andrew Alfred Adair, son of Colonel G. W. Adair, Medical Department, U. S. Army.

CLEVELAND.—In Poughkeepsie, N. Y., on Monday, January 21st, Dr. Joseph Manning Cleveland, aged eighty-two years.

CRUMMER.—In Omaha, Nebraska, on Thursday, January 24th, Dr. B. F. Crummer.

DOUGLAS.—In Baltimore, on Tuesday, January 22nd, Dr. George Douglas, of Wilshire, South Carolina, aged fifty-six years.

GRAY.—In Boston, on Thursday, January 17th, Dr. Robert W. Gray, aged seventy-one years.

JOHNSON.—In St. Louis, Missouri, on Monday, January 14th, Dr. T. A. Johnson.

LAUMANN.—In Mount Holly Springs, Pennsylvania, on Friday, January 11th, Dr. W. H. Laumann, aged sixty-eight years.

LE BARBIER.—In New York, on Monday, January 21st, Dr. Henry A. Le Barbier, aged fifty years.

LONG.—In St. Louis, Missouri, on Wednesday, January 16th, Dr. James Long, aged sixty-nine years.

LOTT.—In Philadelphia, on Tuesday, January 22d, Dr. William Clawson Lott, aged forty-six years.

MAYHAM.—In Fond du Lac, Wisconsin, on Monday, January 21st, Dr. Thomas Mayham, aged seventy-seven years.

PATTERSON.—In Huntersville, West Virginia, on Thursday, January 17th, Dr. Pruyn Patterson, aged sixty-eight years.

ROANE.—In Charles City, Virginia, on Friday, January 18th, Dr. Junius Roane, aged eighty years.

TOWNSEND.—In New Brighton, Staten Island, N. Y., on Sunday, January 27th, Dr. Charles Wilmont Townsend, aged forty-two years.

WHITNEY.—In New York, on Tuesday, January 22d, Cordelia Coles, wife of Dr. Albert B. Whitney and daughter of the late Dr. Frederick W. Hurd, aged sixty-four years.

WEMPLE.—In San Francisco, on Tuesday, January 15th, Dr. Emmet L. Wemple, aged fifty-eight years.

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Original Communications.

THE OPEN AIR TREATMENT IN PSYCHIATRY.*

BY WILLIAM MABON, M. D.,

New York,

Superintendent and Medical Director, Manhattan State Hospital,
Ward's Island.

Somewhat over five years ago, in June, 1901, the late Dr. A. E. Macdonald introduced tent life for the care and treatment of the tuberculous insane at Ward's Island. The serious problems of caring for that class of patients had, prior to that time, embarrassed this particular hospital, as well as others. That tuberculous insane patients may be kept and treated to their advantage, and incidentally to the advantage of their fellow inmates, in canvas tents, and throughout the several seasons of the year, has been most successfully demonstrated. Following this experiment, it was found that the outdoor tent life had also a remarkably good effect on the feeble and untidy patients, and then the convalescent class, those who are about to step back into their accustomed places in the outside world, were placed under the same conditions and advantages of outdoor life with most beneficial results.

Three years ago, the late Dr. Emmet C. Dent, superintendent of the Manhattan State Hospital, West, inaugurated the open air treatment for the acute insane. Fully equipped camps were established for those suffering from acute deliria, anæmia, insomnia, and the various physical ailments coincident with the acute psychoses. The tents and pavilions in use were designated by letters, and known as Camp A, B, C, etc. He began with tents, built on wooden platforms, for the accommodation of twenty-five patients. In winter these tents were heated with iron stoves. They were supplied with closets and running water, but were lacking in some of the advantages and accessories which are now in use in the newly constructed wooden pavilions. While embracing many desirable features, these tents were found to be inferior to the structures now in use for the reason that they could not be kept open in bad weather, and during wet nights they were oftentimes close and humid, proper ventilation at the cone of the tent being impossible.

The camps now used for the acute insane are situated on high, dry ground, which slopes gently toward the waters of Hell Gate, giving a south-

ern exposure and an ocean breeze. The rush of waters through Hell Gate and the passing of vessels of navigation through the channel make a scene varied and picturesque, relieving the ennui of many otherwise tedious and wearisome days.

These camps are several hundred feet from the permanent reception building, and in no wise interfere with its light and ventilation. We find that the most satisfactory structure is of wood and glass, in size 20 by 70 feet, accommodating twenty-five patients, the per capita cost of which is about \$120.00, including the lighting, heating, and plumbing. It is built upon cedar posts driven into the ground, leaving the earth undisturbed underneath. The sides, ends, and gables are practically open. The sides are also movable, so that in the warmest weather, if desired, there need be absolutely nothing partaking of the nature of an enclosure. During the winter, the windows occupying at least one half the entire side and end are left open, thus enabling us to keep the temperature down to from 45° to 60° F. The roofs are shingled or covered with paroid material, and in hot weather are additionally protected by a canvas hood. Thus sheltered from the extreme summer sun, their temperature is comparatively low. Structures of this character are lighted by electricity, equipped with steam heating apparatus, with steam tables for warming food, with water closets and baths, and, in fact, with everything in the way of proper sanitation. The more robust patients take their meals in the adjacent congregate dining room, while the food is brought to those who are weak and feeble.

Weather permitting, those who are able are outside the building entirely, either in the shade of the trees, or under small canopies, the camp buildings being merely used as accessories to the open air for sleeping and bathing purposes, and as a protection from storms. We are now building, as an adjunct to these camps, an open air sitting room which will not be heated, but in which the patients can be protected during the inclement weather of all seasons by enclosing the sides with glass. Our present equipment in the women's division of the hospital consists of two wooden pavilions, each accommodating twenty-five patients, and two large tents of like capacity, which are now being replaced by new structures of the pavilion type before described. This gives a total accommodation of one hundred beds for women. The average period of residence in camp life for each acute case is about three months, so

* Read at a stated meeting of the New York Academy of Medicine, January 17, 1907.

that in a year the present capacity accommodates nearly four hundred patients, or about fifty per cent. of the entire number of admissions for women.

One of the camps is used exclusively for bed cases, and as these improve physically, they are sent to one of the other camps, or to the convalescent or industrial departments, and newly admitted cases are transferred to fill the vacancies. Almost the entire admissions of the acute insanities can be given the advantages of the open air treatment by this plan, with a comparatively small equipment.

In selecting patients for the camp, no discrimination is made because of violent or suicidal tendencies. Indeed, more of these cases have been treated in the open camps than on the wards of the permanent reception building, and only one casualty has occurred, although their proximity to the water would appear to be dangerous. The proportion of nurses is practically the same as that on wards where similar cases are cared for.

Drawing, as we do, from the poorer classes of people in the crowded districts of Manhattan Island, stress and strain with physical disability must of necessity enter very largely into the ætiology of a large percentage of our acute and recoverable cases. In the one hundred and fifty cases treated in two of our camps, examination upon entrance showed the hæmoglobin in over one hundred cases to be as low as 55 per cent.; the highest was 95 per cent. and the average was 70 per cent. In addition to the hæmoglobin reduction, the other evidences of marked physical breakdown were constant reduction in weight, and evidence of decided disturbance of the gastrointestinal tract. Sleep was insufficient, and delirious states very frequent. The indications for treatment in these cases are usually clear, and the camp life meets the situation better than anything yet tried.

A few abstracts of cases will serve to illustrate the results of this method of treatment:

CASE I.—R. V. Admitted February 8, 1906; a picture of mental stupor, with marked muscular rigidity and general debility. On admission to the camp the red blood cells were 4,000,000, leucocytes 10,000, and the hæmoglobin 70 per cent. The patient's nutrition was much affected, her weight being but seventy pounds. She was completely disoriented, and for several days showed slight elevation of temperature up to 101° F. Tube feeding was necessary for two weeks. After a camp residence of three months, she showed a gain in weight of twenty pounds, the red blood cells were then 4,500,000, the leucocytes 8,000, and the hæmoglobin 85 per cent. She brightened up mentally and took much interest in the camp and its freedom, and seven months after admission was discharged as recovered.

The second case illustrates the beneficial results of treatment among the exhaustive type occurring during the puerperium:

CASE II.—G. F. The patient, while pregnant, five months before admission, was subjected to great hardship, and became restless and nervous. Delivery occurred shortly before her commitment, and it is said the labor was normal. She entered the hospital in a state of delirium, with the delusion that her child was dead, refused food, had a temperature of 99° to 100°,

with sordes on the teeth, a foul coated tongue, and distended abdomen. A blood examination showed 3,800,000 red cells, 12,000 leucocytes, and 63 per cent. hæmoglobin. She was treated in the continuous bath for one week, where her general condition improved. She was then removed to the camp. Her weight on admission was one hundred pounds, and it is said that she never weighed more than one hundred and thirty pounds. Owing to her constant restlessness, her refusal of food, necessitating tube feeding, and her loss of sleep, there was no gain in weight during the first week, but at the end of the first month of her stay in the camp she gained ten pounds in weight, the red blood cells rose quickly to over four millions and the hæmoglobin to 80 per cent. The only medical treatment was an occasional laxative and a simple tonic t. i. d. The delirium rapidly subsided, the delusions disappeared, and three months after admission she was discharged perfectly recovered, having gained twenty-five pounds.

The third case is one typical of manic excitement with exhaustion and delirium:

CASE III.—I. V. Weighed on admission seventy-three pounds; red blood cells, 4,200,000; leucocytes, 10,000; hæmoglobin, 65 per cent. She had marked evidence of gastrointestinal disturbance, and the case mentally was one of pronounced delirium with marked hallucinations. This woman also was unable to obtain much sleep. Under camp treatment, the condition of delirium and excitement rapidly subsided, and she soon began to sleep and partake of food. Complete recovery took place in three months, with a gain in weight of seventeen pounds.

The fourth case was a delirium complex, with a history of two years' impaired general health:

CASE IV.—This young woman, A. B., was twenty-five years of age, and a work girl on the east side of town. On admission, she maintained fixed positions, was completely disoriented, refused food, and apparently reacted to hallucinations. Her weight was ninety-eight pounds, and the most she ever weighed was said to be one hundred and twenty-five pounds. The red blood cells were 3,700,000 and the hæmoglobin 65 per cent. This patient also had gastrointestinal disturbance. After a preliminary treatment in the continuous bath for one week, during which the condition of her intestines and mucous membranes greatly improved, she was transferred to the camp. The state of delirium and stupor subsided, and her weight greatly increased. In eight months she was discharged recovered, weighing one hundred and twenty pounds.

Many other individual cases might be cited illustrating the rapid physical and mental improvement which takes place. Gain in weight is most pronounced; the average change is a gain during the first month of six pounds, the extremes being a gain of eighteen pounds, with an occasional loss of one or two pounds in cases requiring more than ordinary care and attention, and in whom forced feeding was resorted to, but it was found that during the second and third months these cases showing the loss at first, afterwards showed a marked gain.

The proportion of the various forms of insanities under treatment in the two camps connected with the reception service were, manic depressive or exhaustive types, 40 per cent.; dementia præcox where the general health demanded immediate attention, 30 per cent.; and the alcoholic, hysterical, depressive, and anxiety types, 30 per

cent. Many cases where delirium is present, as in manic depressive insanity, and in the infective, exhaustive psychoses, are given preliminary treatment in the continuous bath, after which they are transferred to the camps. The general routine treatment is the same as that given to indoor cases, but with what we consider better results.

Among our admissions there is a comparatively large number of the exhaustive type occurring during the puerperium. These patients enter the hospital in a wild state of delirium, with frenzied anxiety and depressive delusions. They are extremely restless and their temperature ranges from 99° to 101°. They are emaciated, with sallow skin and blanched mucous membranes, with flabby muscles, and the usual evidence of disturbed metabolism. The majority of these patients do extremely well under the method outlined, and the second case is a fair illustration of the value of this treatment.

A careful analysis of the types of insanity which show most marked improvement under camp treatment indicates that the infective and exhaustive groups, the manic depressive cases, and the undifferentiated depressions are the most hopeful. We also find that cases of marked deterioration following overstrain are oftentimes much improved by camp life. It is a striking, as well as an encouraging, experience to see a complete mental restoration follow the reestablishment of normal physical health. The percentage of recoveries in cases cared for in the open air is high, and we find that out of one hundred and fifty patients treated in Camps C and D during one year, sixty-one have been discharged as recovered. This is a recovery rate of 40 per cent. The mortality has been and is extremely low, two deaths only having occurred in the camps, one of which was a case of alcoholic neuritis with gastrointestinal complications, and the other a case of exhaustion and delirium in manic depressive insanity. Two manic depressive patients suffering from advanced pulmonary tuberculosis died soon after their transfer to the pavilion for the tuberculous insane.

After the patients have been under treatment sufficiently long to improve the general health, we notice that in recoverable cases the insanity is either well on toward recovery or we are in a position to accurately make a prognosis. In the group of cases where exhaustion is the main ætiological factor, there is no more important restorative than the reestablishment of the proper amount of sleep. Among our patients, there are many who obtain only two or three hours sleep out of the twenty-four, and in some instances may go four or five days with entire loss of sleep. Under treatment in the camp, the constant exposure to fresh air and sunlight very frequently brings about a more normal condition, and oftentimes the patients reach, in the course of a month, an average of six to eight hours sleep out of the twenty-four. It is to be emphasized in these cases that no drugs are used to relieve the insomnia. The warm pack and the continuous bath, in connection with the open air treatment,

are far more efficacious, trustworthy, and desirable. In certain individuals, tube feeding has to be resorted to, but usually for only short periods immediately following admission. The delirious cases and the catatonic group of dementia præcox, perhaps, require more tube feeding than the other types.

Those patients whose gain in weight was not coincident with mental improvement show that we cannot always expect mental and physical disease to react in constant ratio. Several cases of the paranoiac type of dementia præcox show a remarkable increase in weight, with very little if any mental improvement. We can say, however, that, although in this type of cases, we cannot expect a recovery coincident with the physical restoration, we do find that the mental symptoms are modified, and the patients made more comfortable, many of them becoming useful members of our household and able to assist in the work of the wards, laundry, and sewing room.

Aside from the hygienic advantages derived from these camps, the moral effect upon the insane has considerable influence toward their recovery. The freedom from the restraint of bars and locked doors is appreciated to such an extent that vacancies in the camp bring a premium among the more intelligent class of patients, and is it to be wondered at when "scarcely more than a score of years ago, our asylums were still prison-like structures, gloomy without and gloomy within. With few exceptions, the wards were guiltless of ornamentation and the barred windows, the locked door, the crib bed, the massive furniture fastened to the floor and the dozen or more inhuman devices for mechanical restraint made up a picture well calculated to strike terror into the heart of the newcomer and to fill with despair the unhappy victim of prolonged incarceration."

Dr. A. E. Macdonald, in discussing camp life for the insane, in the ninth annual report of the Manhattan State Hospital, East, says:

"The mental improvement, even in cases where recovery was not to be looked for, has been a gratifying feature of the camp experiment, and depending largely, as it has, upon the patient's satisfaction with his new surroundings, has served to dispel one of the doubts with which the experiment was undertaken. It was apprehended, not only that the patients themselves might resent their transfer, but that similar objection might come from their relatives and friends, since innovations, even progressive ones, are apt to be frowned upon by those who constitute the majority in the clientele of a public hospital in a cosmopolitan city. Even at the outset, however, the protests, whether from patients or their friends, were surprisingly few, and latterly they have been more apt to arise, if at all, over the patient's return to the buildings, when that became necessary."

Dr. E. C. Dent, in the sixteenth annual report of the State Commission in Lunacy, in speaking of the camp for the acute insane, said:

"The arrangement of the camps makes a most desirable classification possible. The noisy and disturbed, the quiet and depressed, as well as those commencing to show evidences of convalescence, can be cared for in such a tent or pavilion, apart from each other, and

permits us to utilize our nursing force to better advantage."

"The absence of any evidence of restraint, the unlimited supply of pure air, certainly places the patient under the most favorable surroundings, and I do not hesitate in saying that convalescence is established from four to six weeks earlier than in similar cases cared for in the acute wards."

In conclusion, it has not been my wish to present this subject with undue enthusiasm, but inasmuch as normal individuals are benefited by camping out, it is not surprising that its benefits are found to be far greater for those who are sick in body and mind. The experience of the Manhattan State Hospital for the past five years shows conclusively that the open air treatment is particularly beneficial for the following classes of the insane:

1. The tuberculous.
2. The feeble and untidy.
3. The retarded convalescents.
4. The acute insane, in whom the psychosis is associated with anæmic blood states, delirium, and loss of sleep.

THE SCRANTON TYPHOID EPIDEMIC. PRELIMINARY NOTE.

By JONATHAN M. WAINWRIGHT, A. M., M. D.,
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The epidemic of typhoid fever at Scranton, Pa., has in some ways been quite remarkable. Scranton in years past has had comparatively little of this disease, and it seems quite certain that there was no unusual amount during the past fall. The beginning of the epidemic probably occurred early in December, but owing to laxity on the part of the physicians in reporting the disease the full seriousness of the situation was not apparent to the health authorities till about December 12th, on which day twenty-four cases were reported. From this day on until about January 5th, an average of about forty cases a day were reported. From the latter time until January 19th there was a marked decrease, so that from January 13th to 19th average daily report was only six. Up to January 19th the total report was one thousand and seventy-six, with ninety-three deaths. Scranton at present has a population of about one hundred and fifteen thousand, so that the morbidity represents nearly one person in a hundred.

The investigations of the board of health at once showed that the source of the epidemic must be the public water supply. The exhibition usual under such circumstances where a private water company is interested followed. The Scranton company published manifestos and questionable analyses to show the purity of its water as long as it could do so without appearing ridiculous. The discovery of the typhoid bacillus itself in two points in the water system has furnished the final proof. The bacillus was isolated by Dr. Fox in the State Laboratories in Philadelphia.

The exact source of the epidemic was in the water from the Elmhurst Reservoir, the principal tributary of which runs through Moscow, a town

of some eight hundred people, a few miles above the reservoir. Apparently all the sewage in the town empties into the tributary stream more or less directly. Only certain sections of Scranton are supplied by this reservoir, and practically all the cases are grouped in these sections. It is, of course, true that there have been cases in other portions, but investigation has shown that all of these cases worked in, or frequently visited, the sections supplied by Elmhurst.

Just what case it was that polluted the water shed has not as yet been discovered in spite of the most rigid search by the State and city authorities. That there was some very intense and sudden pollution is, of course, self evident. A possible factor in the suddenness may have been a heavy snow storm (equivalent to about 2 inches of water) which occurred November 15th; and which was followed by heavy warm rains on November 22nd, or about two weeks before the earlier cases appeared. Another factor which has added to the trouble is this: For many years past the water from Elmhurst was discharged from the top over a spillway and run through a brook several miles long and then into a distributing reservoir, from which later it was supplied to the city. On October 29th this system was stopped and the water was piped directly to the city from an out take near the bottom of the lake so that the dose of bacilli was supplied by quick delivery and in a concentrated form. It appears that these and other arrangements were carried out by the water company at will and with no counsel from sanitary experts.

As stated before, it was very soon apparent to the city authorities that the Elmhurst water was the whole source of the epidemic, and the plan of campaign at once instituted had this solely in view, although all other means by which the infection could be spread from patient to patient were most rigidly supervised. It was fortunate that there was in reserve another reservoir which presumably had not been infected and the water company, to its great disgust, was ordered to cut out Elmhurst and serve the city with the purer water. This was done December 15th, and proved to be the greatest safeguard, as shown by the fact that just three weeks from the date of change the force of the epidemic was suddenly broken.

Instructions were at once given to the people to boil all water and milk, the latter, of course, being considered a dangerous vehicle. All public drinking taps were ordered closed. Hotels, restaurants, railways, schools, factories, and all other similar places, were ordered to supply their people with boiled water and milk only. An inspector was at once detailed to see that these orders were carried out. Inspection of the water shed and milk supply was also begun, and continued till the State authorities arrived and assumed control of all factors outside the city limits. The State inspectors found twenty-eight more or less direct nuisances on the water shed.

Early in the epidemic the houses containing typhoid were placarded, and sanitary officers left circulars of instruction issued by the State for

the sanitary care of patients. A free distribution of lime was made at all typhoid houses. Of course, many of the patients were in straitened circumstances, and a corps of visiting nurses was established on such a scale that each patient who could not afford a private nurse was seen by a visiting nurse each day. An elaborate card index system giving for each case the report of the sanitary officer, the visiting nurse, and the lime distributor was begun, and another inspector was appointed to check up the work of the first three attendants.

There are many unsewered districts in Scranton, and the dumping privileges had for years been somewhat promiscuous; it was therefore considered necessary that these and all other things in the city should be given such a cleaning as they had never had before. A medical inspector was appointed to take charge of the work, and under him is a "bacilli brigade," consisting of sixteen to twenty policemen, twenty-five to forty employees of the Department of Public Works with fifteen wagons, which are distributing some three hundred bushels of lime daily and clearing up all menaces.

The descriptions of panic in the city in the lay press have, of course, been wildly exaggerated. Nothing approaching undue alarm has ever been felt, and indeed it was with great difficulty that many could be persuaded to follow out the directions of the health authorities. The local authorities have from the first felt that the situation was well within their grasp. Almost one fifth of the patients were cared for in the hospitals, and it is a matter of some local pride that the hospitals could meet all demands. At one time, however, the hospitals were somewhat taxed, and an emergency hospital was put in readiness in the National Guard Armory. This, while kept fully prepared, has fortunately not been needed.

It now seems evident that the wisdom of the stated methods and the efficiency with which they are being carried out is demonstrated by the fact that the epidemic now seems to be broken. The vast majority of the thousand odd patients were infected at the time the alarm was sounded and the period for the development of these having passed the daily rate immediately fell off so that within one month the epidemic was practically over, though, of course, a few late cases and a few secondary cases are expected to appear for some little time.

The saving grace for Scranton in its time of trouble has been its mayor, Mr. J. Benjamin Dimmick. From the beginning of the epidemic practically his whole time has been given to fighting the disease. Personal inconvenience and the sacrifice of other interests has not been considered in the face of his responsibility for his threatened city. It is in a very large degree to his singleness of purpose, breadth of view, and ability for organization that scores of cases and many deaths have been prevented, and only those who have worked with him will ever know the debt which his city owes him.

Note.—Up to January 31st, the number of cases

reported has been 1,121, with 100 deaths. The average number of cases reported daily for the last eleven days has been four.

A FURTHER STUDY OF PERFORATION OF THE BOWEL IN TYPHOID FEVER.

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(From the Pennsylvania Hospital.)

In January, 1905, I presented before the medical section of the College of Physicians a study of fifty cases of perforation in typhoid fever occurring in the Pennsylvania Hospital.¹ The following figures and results will bring this work up to the present time. I am indebted to both my medical and surgical confrères of the hospital staff for permission to utilize their cases, and take this opportunity of thanking them for their courtesy. I feel it is necessary to present an apology for bringing before you such a trite subject as that of perforation in typhoid fever, but the staff of this hospital is so constantly brought face to face with the serious problems in this disease, which have both medical and surgical aspects, that I feel we should make our results known to the medical profession.

Since January, 1903, to October 20, 1906, there have occurred 29,873 cases of typhoid in Philadelphia, with 3,257 deaths. Considering that at least one third of these deaths are due to perforation, we have had 1,085 perforation cases to deal with in this city. Some of these cases certainly should have recovered; and it remains for the few attending physicians to decide exactly how many of them are to be recognized and submitted to surgical interference and how many saved. Our ideas as to the percentage of recoveries some years ago were probably too rosy. Recent experience shows, I think, a greater mortality in these operative cases than we anticipated. The following figures include the cases of perforation in the Pennsylvania Hospital occurring from May, 1901, until the presentation of this paper in October:

Year.	No. of cases.	Total deaths.	Perforations.	Operative cases.	No. of operative cases recovered.	Recovery.
May, 1901-1902	509	35	8	5	3	0
May, 1902-1903	799	55	16	12	4	0
May, 1903-1904	696	63	26	20	6	0
May, 1904-1905	462	34	10	8	2	0
May, 1905-1906	1,599	55	18	9	9	0
May, 1906, et seq.	—	—	6	6	0	1
Totals	3,006	242	84	60	24	13

In estimating the mortality percentages (excepting the operative mortality percentage) I will exclude the cases occurring after May, 1906. The general mortality is 8.05 per cent., that is, in 3,006 cases 242 deaths occurred. The perforative mortality is 2.59 per cent., that is, in the 3,006 cases 78 cases of perforation occurred. The proportion of perforation to the total number of deaths is 32.2 per cent., that is, almost in a little over every three cases one perforation occurred. The operative recoveries in the total number of cases

¹ Read by invitation before the meeting of the Society of Clinical Surgery in Philadelphia, held on October 26, 1906.

² University of Pennsylvania Medical Bulletin, May and June, 1905.

is 21.6 per cent., that is, of the 84 cases of perforation, 60 were operated on with 13 recoveries.

It is interesting to note, and the comment was made in my previous article on perforation, how the perforative recoveries seem to go in flights. Both the medical and surgical staffs of the hospital have been much discouraged during the past eighteen months, for there has been no recovery from perforation in this hospital since October 30, 1904, until August 31, 1906. During this interval there have occurred thirty-four cases of perforation, 22 of which have been operated on. Case LXXXI was the first one to recover. Some two or three of the patients operated upon lived for days after the operation, but two died from secondary perforations, and one died from toxæmia.

From 5 to 15 years.....	10 patients.	66 patients.
From 15 to 25 years.....	26 patients.	
From 25 to 35 years.....	30 patients.	
From 35 to 45 years.....	11 patients.	
From 45 to 55 years.....	4 patients.	
Sex: Male, 64 boys; 77 women; 1. White, 73 patients; negroes, 11 patients.		

In the present series of thirty-three cases there were no perforations in the first week; nine occurred during the second; fourteen in the third; two in the fourth; six in the fifth; one in the sixth. In one case there is no history to be secured. The earliest perforation was on the eighth day (Case LII), and the latest was on the thirty-sixth day (Case LVII). Two of the late cases (Cases LVII and LXV) occurred in relapses; one (Case LVII) on the thirty-sixth day of an intercurrent relapse; and the other (Case LXV) on the seventh day of a true relapse. Thirty-two of the thirty-three cases occurred between the second and fifth weeks, inclusive. The combined cases therefore result as follows:

First week.....	2	65 = 76 per cent
Second week.....	18	
Third week.....	38	
Fourth week.....	9	
Fifth week.....	11	
Sixth week.....	2	
Seventh week.....	1	

Number of Perforations.—One perforation in sixty-eight cases; two perforations in five cases; three perforations in four cases; four perforations in one case; six perforations in one; and in five cases there is no definite record, though I have assumed there was but one perforation.

The Size of Perforations.—In my previous article on the size of perforation the comparison was made with pin points, pin heads, slate, and lead pencils, etc. It is obvious that in many of these cases the size can only be approximated; in the haste of operation measurements are often not taken. I have deemed it wise to combine the cases and put the measurements either in millimetres or centimetres or in inches. The results of the eighty-four cases are as follows:

1 mm. (lead pencil).....	2
2 mm. (lead pencil).....	27
3 mm. (lead pencil).....	8
4 mm. (lead pencil).....	7
5 mm. (lead pencil).....	4
1 cm. (.4 inch).....	1
3 cm. (.50 cent piece).....	1
Perforated appendices.....	2
Not mentioned (all small).....	32

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The Relation of Perforation to the Ileocæcal Valve.—Eighty-eight per cent. of the perforations in this study are in the ileum.

In the first 12 inches.....	38
In the second 12 inches.....	10
In the third 12 inches.....	0
In the fourth 12 inches.....	5
In the fifth 12 inches.....	1
In the sigmoid.....	1
In the colon.....	2
In the caecum.....	1
In the appendix.....	4
Perforating gland.....	1
Localization not mentioned, but all in ileum.....	20

Concerning the Presence of Chill at the Time of or Subsequent to Perforation.—In fifty-eight cases (68 per cent.) there was no chill; in eleven cases there was no mention of chill being present, though the history would seem to indicate it was not. These eleven cases therefore added to the fifty-eight cases would give us sixty-nine cases, or 83 per cent. In fourteen cases chill was present at, or subsequent to, the supposed time of perforation (16.9 per cent.).

Cases which had chills: Case LV, second perforation, LVI, LXVII, LXXI, LXXV, LXXXI, LXXXII.

These cases have also been studied as to the presence of hæmorrhage. Hæmorrhage occurred at or about the time that perforation was suspected in nine cases (10.8 per cent.). In ten cases (12 per cent.) hæmorrhage occurred at times preceding perforation; in several cases, for instance, Case LVIII and Case LXXIII, even a week or ten days before perforation occurred. In three cases hæmorrhage occurred two days before perforative symptoms were noted (Cases LXII, LXVII, LXX). In fifty-six cases (79.5 per cent.) there was no hæmorrhage, and in eight cases no definite record.

Diagnosis.—The diagnosis rests on the tripod of the subjective symptom pain, and the physical signs, tenderness with rigidity, combined with an extensive experience in the study of typhoid fever and all its complications. The presence or absence of liver dulness is of no consequence. The leucocyte count is of no value. It must be remembered in a certain proportion of the cases pain will neither be complained of nor rigidity be present. I am convinced that the important things to keep in mind in making a diagnosis are, to exclude pneumonia and pleurisy; retention of urine, even though there seems to be no physical signs to call our attention to such a condition (a catheter must be used); iliac or femoral thrombosis; and peritonitis. Either peritonitis or appendicitis of course are operative, and need not bother us in making the differential diagnosis.

Study of Cases Diagnosed as Perforation, But Proved Otherwise.—I have collected twenty cases as a basis for this study. In this number thirteen were operated on; seven escaped operation; eleven patients recovered, and nine died. In the study of the first ten cases two cases of appendicitis and two of left basal pneumonia were mistaken for perforation of the intestine. In the last ten cases studied femoral and iliac thrombosis and peritonitis for which no cause could be discovered led the list. The study of the twenty cases therefore is as follows:

Pneumonia.....	3
Femoral and iliac thrombosis.....	3
Necrosis of the caecum.....	3
Appendicitis.....	2
Peritonitis.....	2
Gastritis.....	1
Enterocolitis.....	1

Hæmorrhage	1
Perforations due to typhoid	1
Perforations due to other causes	1
Perforations due to other causes	1
Perforations due to other causes	1

Six of the recent supposed perforative cases were operated on, three of the patients recovering. Of the four patients not operated upon two recovered. The mortality of the two is therefore the same, 50 per cent.

Autopsies.—Of the eighty-four perforative cases but thirty-three of them were subjected to completed autopsy; five partial autopsies through operation wounds were made, making the total number of autopsies thirty-eight. Special attention in these autopsies has been paid to the attempts at closure of the perforations. In nine of the total number of cases there was some attempt usually on the part of the omentum to plug up the perforation. In Case III the ileum was found slightly adherent to the abdominal wall; in Case V the omentum was slightly adherent to the intestines; Case XVI showed adhesion and exudate about a large perforation in the posterior part of the transverse colon; Case XVII showed the perforation sealed by another loop of ileum; Cases XXXII and LXXII are the two healed perforations; in both cases adhesions existed between other intestinal coils and the peritoneal coat of the bladder; in Case X the omentum was found lightly adherent, and on breaking up the adhesion the perforation discharged faecal material; in Case XLV the same condition as in Case X existed; in Case LXV the omentum was adherent for 3 cm. above the free border of the ileum. (Case XV showed obstruction, a kink, after operation 25 cm. above perforations.) But eighteen of the sixty cases operated on were posted. As far as the autopsies go general fibrinopurulent peritonitis in fifteen cases was the most probable cause of death. In but three cases did other causes seem to enter into it. Case LIII, exhaustion due to vomiting (?); Case LVIII, acute vegetative endocarditis also present; and in Case LXXVIII the toxæmia and beginning pneumonia (clinical) seemed to be factors. Neither the first nor the last case was posted after death. Eighteen of the nonoperative cases, excepting the two healed cases (Cases XXXII and LXXII) had peritonitis; six of them had in addition bronchopneumonia (Cases L, LII, LXXII, LXXIII) or lobar (Cases LVIII and LXV) pneumonia.

Conclusions from the Study of the Cases on the Operating Table and at Autopsy.—In perforation in typhoid fever there is not much tendency to wall off the perforative area. Sometimes the omentum may produce a temporary plug to the leak, but the peritoneal infection has already occurred and rapidly progresses from that time. The two cases of healed perforation showed adhesions between the coils of the ileum and the wall of the bladder, but in each case the patient died from other complications. Neither were operated upon.

A certain proportion of cases of perforation occur in combination with other serious complications of typhoid fever, when the patient is really in extremis or moribund. In such cases no credit can accrue to surgery, and operation should not be recommended.

While typhoid fever patients stand operative procedures well, I am far from convinced that wounds heal well after such interference. At times when the toxæmia is severe the serum loses much of its gluing properties, and the wounds, though remaining clean, will show no tendency at all to unite. I have seen at least three clean wounds which failed to show any evidence of closure after a week or more had elapsed. Two of them ruptured suddenly, and the intestinal contents were extruded through the wound.

Finally, and here I desire to tread very softly, I am of opinion that the subsequent surgical care of these operative cases should be carefully considered. I am not convinced that the subsequent drainage of the wound by means of the so called "Murphy method" with the Fowler position is a good thing for typhoid perforative cases. The conditions in typhoid are vastly different from that in patients with a peritonitis from perforative gastric ulcer or infections of the gallbladder or appendix. In typhoid a man or woman is usually exhausted by two or three weeks of his disease, is frequently toxic and delirious, and I cannot think it wise to sit such patients up in bed unless such treatment is a matter of vital importance. I have thought I have seen it do decided harm to toxic patients whose condition otherwise after operation seemed very satisfactory.

To reduce the length of this report, the abstract of the clinical histories will be omitted. In a future article, however, based on the study of one hundred cases of perforation, they will be included, as well as the post mortem findings. For the sake of completeness, the conclusions reached in the previous paper, based upon the study of those cases, are again printed:

CONCLUSIONS.

1. Perforation of the bowel in typhoid fever is more common than is generally supposed, occurring once and a trifle over in every three deaths.
2. The most common time of perforation is between the fourteenth and the twenty-first days. In 92 per cent. of the cases in this series the perforation occurred between the second and fifth week inclusive. The earlier cases are probably perforation in a relapse; now and then perforation may occur without evidence of previous illness.
3. Perforation occurs in cases of all grades of severity, from the ambulatory to the hæmorrhagic type. It is most common in those with moderate (25 per cent.) and severe (50 per cent.) infection (75 per cent.). It is more common in the hæmorrhagic than in the mild cases (10.8 per cent. to 8 per cent.).
4. The ileum is the common site of perforation (88 per cent.); the majority occur within twelve inches of the ileocaecal valve; the appendix and colon, respectively, are the next most frequent sites of perforation in this series of cases.
5. Pain of some kind is present in 75 per cent. of all cases. In 50 per cent. of the cases the onset is sudden and severe and of increasing intensity, localizing itself to a special zone. In 20 per cent. of the cases the pain is of slow onset, not localized, with general distribution. In some cases (12 per cent. of this series) no pain is complained of, and the usual symptoms of perforation are absent.
6. Tenderness and rigidity are present in from 75 to 65 per cent., respectively, of all cases, and are usually combined; in some cases either one or the other may

be wanting; rigidity especially may be absent in cases with rather a pendulous and relaxed abdominal wall.

7. When perforation is suspected the temperature should be taken every hour; only by this means can the immediate rise and slow fall to normal or subnormal which often occurs be detected; in some cases, and especially those of extreme toxicity, no noteworthy change at all in the pulse, temperature, or respiration can be detected when perforation occurs. Diagnosis is then only an inference.

8. Distention (if absent during the course of the disease and at the time of suspected perforation) is a late symptom of perforation. The obliteration of liver dullness is not a reliable sign of perforation.

9. The study of the leucocytes is of little aid. In a few cases their increase is such as to assure you of your diagnosis. In a considerable number of cases there is a decided reduction in leucocytes after symptoms of perforation. Differential counting is not of practical use.

10. Before being assured of our diagnosis right sided pleurisy, pneumonia (especially in the young), cholecystitis, acute gastrointestinal indigestion, femoral and iliac thrombosis, appendicitis, peritonitis without perforation, cystitis, rupture of a mesenteric gland, or even hæmorrhagic exudation into the abdominal muscles (Zenker's degeneration) should be considered. Even then mistakes in diagnosis will be made.

11. While nature will infrequently close one, two, or even three perforations, the only rational procedure when perforation occurs is operative interference. No case is too desperate for the attempt. Not infrequently the so called mild cases succumb, while very ill ones recover.

12. The diagnosis made, time for operation has arrived; its important point is rapidity. Closure of the perforation and drainage is all that is needed; fifteen to twenty minutes should suffice.

1834 PINE STREET.

THE RADICAL OPERATION FOR EMPYEMA OF THE ANTRUM OF HIGHMORE.

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In 1901 I described for the first time my method for a broad opening of the antrum of Highmore through the nose,¹ together with a favorable report of several cases operated in. A year and a half later I published the histories of other patients operated upon according to this method.² Again a year and a half later I was fortunate enough to be in a position to describe another series of cases.³ I now have the histories of thirty-eight patients operated upon in this manner.

The treatment through the ostium maxillare or through a small opening made through the middle or lower meatus does not give good results, neither are the results satisfactory, which are gained by an opening into the antrum of Highmore through the alveolar process or through an opening in the fossa canina, while the resection of the external wall of the maxillary antrum together with the internal wall, the Luc-Caldwell method, represents a too large interference not in proportion to the disease. Not satisfied with all these different methods used

formerly, I developed my own method, which I shall first describe, and then enumerate its advantages. The reason for this is that there have appeared since the publication of my articles several descriptions of methods of operations, asserted to be new, which are more or less identical with my own method, the authors of which ignore my *modus operandi* entirely. The main point in my method consists in the resection of the forward two third parts of the lower concha and of the inner wall of the antrum of Highmore not only in the extent of the lower but also of the middle meatus, in such a manner, that there will be formed a wide communication between the antrum and the nose.

My method is quite often identified with Claoué's operation, published about a year later,⁴ and some authors speak of a method of Réthi-Claoué, as does Piffi,⁵ who seems to think that I perform the resection of the inner antrum wall only through the lower nasal duct, while Gavello⁶ states that my method and the one of Claoué differ very little from each other.

Both methods are absolutely not identical; on the contrary, between both exists an important difference. Claoué places the opening only in the lower nasal duct, while I place it not only in the lower but also in the middle meatus. I have expressly emphasized that an opening in the lower nasal duct is not sufficient. It is important that the opening should be large, and for this purpose the lower nasal duct is usually not large enough. It is not advisable to make a small opening; I tried formerly to use an opening in the lower meatus only, but without success, even later after Claoué had described his method, I have a few times again made an opening in the lower meatus alone; but I usually was only successful after having enlarged the opening to the middle meatus. The difference in the size of the operation is only small, while the larger opening is of greatest importance. It is not pleasant to enlarge the opening after some time has elapsed and to be forced to undertake a second bloody operation. A small piece of mucous membrane of about one or two centimetres, usually not even healthy, does not play a rôle here; besides I have never seen anything detrimental resulting from it, neither have I ever seen harm done by a resection of the lower concha, which resection in these cases is not even complete. However, a part of the lower concha is also reached in the Luc-Caldwell method. Richards⁷ also makes the opening either in the lower or only above the lower concha and does not resect the concha if the concha is not much enlarged.

The technics of my operation is as follows: First of all it is necessary to paint with a cocaine-adrenalin solution the lower concha inside and outside and the external nasal wall of the lower and middle nasal duct. As only a small quantity of cocaine is being used there is no danger of intoxication. The operation is nearly entirely painless, and it is

¹ Eine Radikaloperation der Kieferhöhle von der Nase her zum Beseitigen hartnäckiger Empyeme. *Wiener medizinische Wochenschrift*, 1901, No. 52.

² Eine Radikaloperation hartnäckiger Kieferhöhlenempyeme von der Nase her. *Prager*, 1903, No. 12.

³ Die Radikaloperation des Kieferhöhlenempyems von der Nase her. *Wiener klinische Wochenschrift*, 1904, No. 12.

⁴ Claoué, Traitement des suppurations chroniques du sinus maxillaire par la résection large de la partie inférieure de la partie nasale du sinus. *La Semaine médicale*, October 15, 1902.

⁵ Piffi, Zur Operation und Kasuistik der chronischen Oberkieferhöhlenentzündungen. *Prager medizinische Wochenschrift*, 1906, Nos. 17 and 18.

⁶ Gavello, I metodi conservativi di cura delle sinusiti mascellari croniche. *Archivio italiano di otologia, rinologia, e laringologia*, 1905, Nos. 2 and 3.

⁷ Richards, The Treatment of the Maxillary Sinus Through the Nose. *Journal of the American Medical Association*, September 16, 1905.

very seldom necessary to again use the cocaine during the operation. The lower concha is then loosened from its insertion in its outer two thirds with one or two clippings of the scissors and dissected in its inner one third with a conchotome or curved scissors. The external wall is opened with a chisel through pressure of the hand, and the edges of the opening so formed are to be made even on all sides, not only upwards but also downwards, that is toward the external wall of the lower as well as of the middle nasal duct, so that a broad opening for communication is formed between the maxillary antrum and the nose. When I first performed this operation I placed bismuth subgallate tampons in the antrum after cleansing it; two days later I examined it with my endonasal mirror and if necessary scraped it with a sharp spoon, eventually with my retroflected spoon. At present I mostly use the sharp retroflected spoon immediately after opening, if I suspect a deeper seat of inflammation, examine carefully the walls and scrape everything which looks suspicious. After from two to three days I can always convince myself that no infected matter has remained. Lately I have never used more than one quarter of an hour for the entire proceedings, and for the operation proper only four to five minutes. General anaesthesia never becomes necessary. Excruciating pain, inflamed swelling, oedema, which are observed in the Caldwell operation, have so far not been observed. As soon as the discharge of pus becomes less I do not wash out the antrum so often, which is done in the beginning daily, while later on every second, third or fourth day.

The statement of some authors that a direct inspection of the antrum in this operation is impossible I wish to correct; the back parts can be seen directly, while the front parts can be seen with a small mirror. However, Piffel⁸ asserts that it is possible to look from the nose into the antrum with the help of the Zangl nasofacial funnel, and to observe the front parts with a small laryngeal mirror. He further states that curetting and scraping of granulation could be done from the nose under direct eye observation.

Why should we not, therefore, make an opening right away from the nose, and save the patient the opening from the outside according to Luc-Caldwell? As we have seen, the objection made by some is untenable, that we cannot look into the antrum by an operation from the inside, or introduce instruments into it, or scrape it. On the contrary, if the operation is performed as I have described it and the opening is made large enough, we can even have a better view of it. It is true, the operator must possess more manual skill for the inside operation than for the external process. It is, however, not necessary to hasten the inside operation as we have in adrenalin a styptic remedy which keeps the field of operation free from blood for quite some time. If, therefore, I am not successful with washing from the ostium maxillare or from the space made by the extraction of a carious tooth, and if it is necessary to stop the formation of pus, I operate, as described, from the nose. The interference is much smaller (as the external wall is saved), than is the radical method, where the external maxillare alone is opened

or together with the inner wall. Another advantage is the circumstance that the patient prefers an interference from the inside to an operation from the cheek.

I do not intend to be casuistical and wish only to state that thirty-two patients from the thirty-eight operated upon have been cured; a few of these patients had been treated by me before I operated upon them, with washing from the ostium maxillare or from the alveolar process, or as stated before from an opening in the lower nasal duct, but without success; two I have lost sight of three or five weeks after the operation, when the pus discharged was greatly diminished; and four patients whom I have seen as late as a year and a half after the operation, had a small discharge of pus.

It is strange that some authors (Escat, Vaquier) have seen better results from the Clauoué method, in which the interference is smaller; but it seems as if the cases which were operated on were of less inflammation. This is also shown by the fact the Clauoué never found it necessary to use curetting.

To summarize. It is of no import whether a smaller or larger piece of skin is removed. On the contrary the disadvantages of a smaller opening are often quite considerable. The interference does not become more difficult if the opening is made somewhat larger, and one will prefer to make a larger opening, right at the start, as the chances are better with a greater communication; besides, one can predict whether the case will be a light one or severe, or whether there do not exist grave changes in the antrum. Furthermore, it is not indifferent to the patient whether he will have to submit later to a second operation for an enlargement of the communication. While the opening from the lower nasal duct alone suffices in light cases, my method suits also the more difficult cases, because it is possible, when making a large opening to perform the necessary operation in the antrum from the lower as well as from the median nasal duct. Since I use this method I have avoided the external opening. This method has replaced in my hands the Caldwell operation, even in such severe cases where I would have otherwise performed this operation. In view of the size and technics as well as in view of the success my method has proved to me the most satisfactory of all these radical operations.

7 GARNESONGAS

REVIEWAL OF SOME ÆTIOLOGICAL FACTORS OF INVALIDISM FOLLOWING CHILDBIRTH.*

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My principal object in presenting this paper is to elicit discussion regarding the ætiological factors of invalidism following labor; in other words, as to why women are not more frequently in as good health after labor as before pregnancy. We hear much valuable discussion of the methods of operative technique, but too little of the ætiological factors producing the conditions.

The status of child bearing in relation to subsequent pelvic disease places women between

* Read before the North Branch of the Philadelphia County Medical Society, October 16, 1906.

⁸ Piffel, *loc. citate*.

two evils. In conforming to the moral and physical laws of procreation, they should be benefited by the functional activity of the organs of reproduction, rather than invalidated thereby as appears so often to be the case.

Regarding pregnancy and labor as physiological processes, the natural laws are either erroneous or else something is radically wrong with obstetrical technique, or, in the observance of the rules essential for the preservation of health, on the part of the patient during the pregnant or puerperal period; assuming that much of the discomfort, following parturition, by reason of the fact that some or all of the following manifestations can so frequently be traced directly to a previous labor, viz., subinvolution; catarrhal endometritis; and the well known nervous phenomena; malposition of the uterus; procedentia; menorrhagia; ovarian congestion, cystocele; rectocele, etc. Many of these subjects have the impression "faulty obstetrics" indelibly stamped upon them.

The author is inclined to the belief that the predominant ætiological factors are "faulty technique" and too little regard for the "minor details" in the conduct of pregnancy, labor, and the puerperium. The major details are of necessity, as a rule, properly cared for.

There are two classes of subjects who become invalids or partial invalids subsequent to labor, and it is safe to conclude from a conservative estimate that fully seventy-five per cent. of those going to the gynæcological clinics are of that class attended by the midwife or the general practitioner who has not the time to devote to the minor details in obstetric practice. In studying the relative frequency of the post partum pelvic and other diseases, between the class referred to and those confined under better environment and more favorable circumstances, attended by a competent nurse and practitioner, we find that the invalidism is traced much more frequently to avoidable causes in the former than in the latter class.

Predisposing Factors.—The predisposing factors are: (1) Lack of knowledge on the part of the laity as to the importance of proper hygienic measures; (2) inattention on the part of the practitioner, not especially interested in obstetrical work, as to the position of the child, pelvic mensuration, and the effect of pregnancy on the maternal organism, all of which effect materially the character of mechanism and the subsequent condition of the patient.

Most women have a very poor conception of the proper hygiene of the pregnant state, as to clothing, exercise, bathing, and diet as preventive measures against the various manifestations of toxæmia. Education along this line is much needed.

Diagnosis of the position of the child and the approximate size of the pelvis and fœtus by mensuration are prerequisites for the successful conduct of a labor. The abnormal position of the fœtus can, in the large percentage of cases, be converted into the normal by external version if recognized in due time. Dystocia from moderate degree pelvic contraction or obliquity, with a

fully developed or over grown child, in the absence of external evidence of deformity, are conditions rarely possible to recognize except by mensuration.

The rule advised is "the external measurement of all primiparæ" and "internal measurement when the slightest evidence of deformity exists" and "the measurement of all multiparæ who give a doubtful or questionable history of previous labors." Little dependence is placed upon internal fœtometry, except to determine approximately suspected overgrowth or marked disproportion.

Recognition of these facts give the obstetrician an opportunity to adopt the appropriate measures for the abnormal delivery, thereby decreasing the probability of invalidism after labor.

The effect of pregnancy on the maternal organism requires the closest observation and scrutiny. Analysis of the urine at regular intervals for albumin and the percentage of urea is the keynote to the degree of renal disturbance and the degree of irritation resulting from the products of catabolism. The patient who is made familiar with the following facts: "That headache, vertigo, disturbed vision, dimness of vision, or any prodromal subjective symptom of toxæmia in the mean time, demands an extra and immediate analysis of the urine and the immediate establishment of the appropriate diet under the physician's care," rarely develops uræmia or eclampsia.

Factors During Labor.—1. The influence of posture on mechanism. 2. The modifying effect on injuries to the birth canal by anæsthesia. 3. Protection of the perinæum during birth of the shoulders as well as the head. 4. Instrumental delivery.

The most favorable maternal position is not always the lateral, nor always the dorsal, but the position which favors correlation of the appropriate diameters between mother and child that will facilitate the birth of the latter with the least amount of injury to the former. The left lateral position, or possibly lateroprone in exceptional cases, favors anterior rotation of the fœtal head with the least amount of injury to the maternal pelvis when the child occupies the left positions, and *vice versa* when the child occupies the right positions.

The injury to the anterior vaginal wall in the locality of the vesicovaginal ligaments resulting from faulty attitude, viz., moderate or excessive extension of the fœtal head after rotation has taken place, can usually be obviated by the dorsal position with flexion of the thighs and elevation of the maternal shoulders. This is an injury so easily overlooked and one which inevitably results in cystocele when not repaired. The application of the Walscher position is quite as valuable in the reverse attitude, i. e., excessive flexion in the anterior positions, also excessive extension in the persistent posterior positions. While the Walscher position no doubt increases slightly the conjugate diameter of the inlet, I do not believe it is of any great value for this purpose, but does favor correlation of the appropriate

diameters under certain circumstances. The point emphasized is this, "posture influences mechanism and the preservation of the normal mechanism insures the least degree of injury to the maternal soft parts."

Of the modifying effects of anæsthesia on injuries, I simply urge its more universal adoption, preferable chloroform administered to the obstetric degree for the purpose of aiding relaxation in retarded labors, during the second stage only, and for the purpose of retarding precipitate labors. For prolonged anæsthesia in serious complications or obstetric operations, ether is the choice.

Protection of the perinæum during birth of the shoulders is quite as important as during the birth of the head. It is not unusual to find one or both arms folded over the back instead of the normal attitude which prevents the shortening of the bisacromial diameter, and unless manually corrected, results in perineal injury. In this connection I protest most emphatically against the method of holding back the approaching head by direct pressure for the purpose of preventing perineal lacerations. The further moulding and elongation of the head on the floor is prevented by this method and the circumference corresponding with the circumference of the outlet increased, while on the other hand, when deep lateral pressure is made, the circumference of the head is lessened and the further moulding and elongation favored.

Much injury inflicted upon the maternal soft parts by instrumental usage is unavoidable and therefore justifiable, but injuries inflicted from their premature application simply for the purpose of saving time, before the natural physiological process has been given every opportunity, is not justifiable.

Post Partum Factors.—1. The time for repair. 2. The method of repair. 3. No repair at all. 4. The general management of this period. These are the most important factors.

We err in judgment as to the time for repair largely because of the strong determination to adhere to one of two cast iron rules, viz., the "immediate" or the "intermediate period," rather than to make the distinction between the classes of patients appropriate for each period. No uniform rule can be adopted; judgment must be based on the following points: Will the patient's condition at the end of labor warrant the thorough examination necessary to determine the extent of the injuries, and the thorough immediate repair? If so, are the injuries of such a nature that immediate repair will give as good results as the intermediate?

The large percentage of lesions are, no doubt, confined to the perinæum, the first or second degree, and should be repaired immediately under ordinary circumstances, while high wall injuries, the extent of which cannot always be appreciated at the end of labor in the presence of bleeding, also cervical lacerations, are positive indications for the delayed operation, excepting that class when immediate repair is necessary to control hæmorrhage.

The advantages of immediate repair are: First, the patient need not be subjected to a second operation, under anæsthesia, and this I believe to be the strongest point in its favor, although the local application of cocaine is all that is often required for wall injuries when the skin surface is not broken. Second, puerperal sepsis is less liable to develop, although this danger is reduced to a minimum under strict observance of asepsis and antisepsis. If the microorganisms are present they will almost as readily invade the normally contused tissues as a laceration sinus.

The advantages are: First, the unfavorable condition of the patient at the end of a tedious labor, particularly when accouchment forcé has been applied. Second, the absence of competent assistants, and many other necessities to scientifically repair any other than the moderate degree perineal lesions. Third, hæmorrhage and œdema. Fourth, difficulty in coaptating the deeper tissues, especially the muscle fibres.

The advantages and disadvantages of the delayed or intermediate operation are largely the reverse of the stated points, plus the decided advantage of better results obtained in the repair of cervical lesions at a later period, and the detection and repair of high wall injuries, frequently overlooked in the beginning. Better results are obtained in the latter class, because the tissues are less friable; the sutures hold better; the lesions are less tortuous; are more clearly defined; do not require denudation, simply freshened with gauze or curet; accuracy of tension in applying sutures in the absence of primary swelling; the patient has recuperated from the ordeal of labor; the circulation is more perfect than soon after the removal of intraabdominal pressure and union is quite as satisfactory.

The cervix at the end of labor is distorted, irregular in outline, the smaller portion between the tears thin and retracted, the larger thicker and bulging, and accurate coaptation is extremely difficult or impossible. Careful study of this lesion on successive days of the puerperal period shows gradual improvement from day to day. Below the contracting ring it is passive, thin, flabby, and relaxed. This independent action is but temporary. Slow and gradual readjustment of the cervix takes place, commensurate with the degree of involution of the uterine body, assuming more and more from day to day the regular contour, regardless of lacerations until the fifth or eighth day, when it has assumed a more regular outline, and the tear becomes a clean cut injury in appearance and reality, with no difficulty in accurate coaptation.

Trachelorrhaphy before readjustment is very frequently followed by subinvolution, just as the uterus with cervical lesion to any extent, is followed by subinvolution later when not repaired at all.

The following rules are observed at our clinics: a. Immediate repair when convinced from the primary examination that the lesion involves the perinæum alone, or the tissues in immediate juxtaposition thereto, when the patient's condition will warrant it, excepting the complete variety.

b. When deep vaginal or cervical lacerations demand immediate repair to control hæmorrhage, otherwise the cavities are packed with gauze and operation deferred. The second day rather than a later period is selected for the complete tear, or when fistulæ are complications, at which time all lesions are repaired from above downward. The condition of the patient will rarely permit these operations at the end of labor, nor is the physician prepared for them. While this is not the best time for cervical repair, it is better than at the end of labor, also better than to subject a patient to the second operation during the puerperium.

For all other varieties, including the cervical, high vaginal, or vestibule, the intermediate period (preferably from the fifth to the eighth day) is selected.

Some one has said that "the method of repair is elementary." This may be true of the minor degree lesions, but certainly it is not true of the more extensive injuries if perfect continuity of tissues is to be restored and preserved.

Briefly, the technique, applicable in both immediate and intermediate repair, consists of the removal of all clots and lochia with hot sterile water, the removal of any necrotic tissue, packing of the cervical canal with gauze, closure of the cervix with interrupted chromic catgut, walling off of the upper portion of the vagina with cotton or gauze sponges, closure of the sinuses from above downwards, the deep ones with interrupted sutures, the superficial with the continuous chromic catgut, the sphincter when repaired reinforced on the skin surface with two or three silkworm gut sutures.

The Criticisms Offered.—First. Against the method of repairing the perinæum before the expulsion of the placenta. The reasons are self evident.

Second. The attempt to scientifically repair anything but the minor degree injuries in the absence of competent assistants, with poor light and the inability to observe strictly the rules of asepsis and antisepsis.

Third. The method of repairing the perinæum on the skin surface and depend upon union by granulation on the interior. Relaxation and partial or complete rectocele results subsequently.

Fourth. Against allowing the minor degree laceration to take care of itself. If the custom of making a second examination on the second or third day after labor is adopted they may be found when not previously suspected. It matters not how slight nor apparently insignificant the injury, it breaks the line of continuity, favors relaxation, and is an important factor in subsequent invalidism.

Fifth. The freedom of patients before involution is well established. There can be no reasonable objection to a patient getting out of bed by the ninth or tenth day, providing the then gravid uterus is repositioned when lying down by elevation of the hips, or, better still, occupying the knee chest position for five minutes, thus releasing tension on the uterine supports and aiding in the process of involution. The position should

be taken each night on retiring, from the tenth day to the end of the third week.

Sixth. Against the use of douches after normal labor except for some positive indication.

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SOME ATYPICAL MANIFESTATIONS OF PALUDISM.*

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The cardinal symptoms of an ordinary type of malarial fever, as you well know, are chill, fever, and sweating, followed by defervescence. This phenomenon, however, by no means represents the only form in which paludal intoxication manifests itself. In quite a large class of cases, frequently encountered by the practitioner in malarial regions, these symptoms are not only absent, but the manifestations of plasmodial infection partake of a character as varied as Proteus himself.

But in whatever form manifested there is one symptom which may be regarded as pathognomonic, is constantly present, and characterizes all forms of malarial infection—the periodicity of the occurrence of the symptom or symptoms complained of—in other words, the recurrence at a certain time of day, or in a certain number of hours or days of the self same symptom or symptoms.

The following cases represent a few of the striking forms in which this atypical malaria has been observed in my practice:

CASE I.—M. B., female, twenty-six years of age, married, no children. I was called to see her on September 21, 1898. She complained of dysmenorrhœa. Menstruation had begun the day previous, but was attended with such violent pains that she was obliged to go to bed. I had treated her four years before in a case of parenchymatous metritis, but she had gotten well of that disorder and had had no trouble from it during these years. The usual remedies and procedures for this condition were administered and applied, but to no purpose. The flow after the fifth day ceased, but there was no abatement of the pains, in spite of hypodermic injections of morphine, which had to be resorted to after the failure of the other anodyne agents to bring relief. On the 20th of October, nearly one month from the date of my first visit, she remarked in answer to inquiries that she dreaded to see the morning, that she got on fairly well during the night and early morning until about nine o'clock, when the pains would set in, and then she would have no rest till about the same hour in the evening, when they would subside. Upon this I immediately prescribed quinine, directing that fifteen grains be taken at eight o'clock the following morning about one hour before the recurrence of the paroxysm. On my visit this day she was considerably better, the symptoms of pain had been felt at the usual hour, but were slight and of short duration. This treatment was continued for one week, followed by a tonic containing iron and arsenic for two weeks, when the patient was discharged cured. During the entire period of her illness there was not the slightest elevation of temperature.

CASE II.—F. J., fifty-six years of age, a widow, mother of six children, an invalid, being a victim of progressive (spinal) muscular atrophy. I was called

* Read before the Tidewater Medical Society, December 6, 1906.

to see her on July 20, 1901, having had attended her eighteen months before for chronic gastritis. She gave the following history: For a week past she had been subject to attacks of profound malaise in the epigastrium. The feeling complained of was not simply nausea, but combined the latter and a general sick feeling. It was independent of the ingestion of food; her appetite was good, and the partaking of food in no way inconvenienced her. This feeling came on regularly at or about eleven o'clock in the forenoon. Had felt no chill, and had had no fever.

The theory of the mosquito as the agent for the transmission of the malarial parasite to the human subject was then in the full tide of discussion in the medical journals. The room of the patient was also evidently the temporary headquarters of a few battalions of these pests, for their singing and bite could be heard and felt every moment. Taking these facts together, the presence in large numbers of mosquitoes in the room of the bed ridden patient, and the periodicity of the occurrence of the symptoms complained of, I concluded that the case was one of malarial infection and prescribed quinine, to be taken in ten grain doses at ten o'clock in the morning. The sequel was similar to that of Case I, the patient being discharged within two weeks from the time of beginning the treatment.

In the foregoing cases the diagnosis was based upon clinical observation only, which was, however, confirmed by the therapeutical test. In the cases to be cited the diagnosis was in every case confirmed by a microscopical examination of the blood.

CASE III.—Thomas W., fifty years old, a laborer. I saw him on March 16th of the current year. He gave the following history: Fourteen years ago, while at work, he received a ghastly wound on the upper third of the right leg on the fibular side by a fall on a piece of iron. The scar extends across the tibialis anticus and extensor muscles and the anterior tibial nerve. Since then he had been subject to periodical attacks of rheumatic pains at the seat of the injury, and in his opinion the present disorder was of a similar nature. He complained of pain and excessive tenderness in the scar and surrounding area. There was no other symptom complained of. The patient was put on sodium salicylate in combination with potassium citrate and opium, and an anodyne lotion to be applied to the parts. Little or practically no improvement attended this course of treatment. During the following week, in the course of further examination, he mentioned the fact that he felt better every other day, and that the day following would be his sick day. Upon this a specimen of his blood was obtained and submitted to a microscopical examination. To my surprise the red blood corpuscles were fairly loaded with the tertian parasites of Laveran. There was marked anæmia, hæmoglobin test showing 40 per cent. No blood count was made. The patient was given twenty grains of quinine sulphate daily for one week. This was reduced to ten grains per diem the following week, supplemented by a ferruginous tonic containing Fowler's solution. He was able to go to work on the third week, the pain in the leg and tenderness having completely subsided.

CASE IV.—M. B., female, about thirty years of age, married, a mother of three children, was gravid in the seventh month when I saw her on the 21st of May last. Her history was briefly this: She had been ill since February with pain in her left hip; but, though she had been under constant treatment by her physician, she had grown from bad to worse, until now she had lost the use of that member. She could only sit in a certain posture in her rocker and sleep, being unable

to lie in bed. The pain was aggravated by the least motion. With the assistance of her husband, and after much ado, she was made to lie in bed on the sound side and a thorough examination made. It was found that the point of greatest tenderness was at the point corresponding to the point of exit of the great sciatic nerve, between the trochanter major and the tuberosity of the ischium, and extending upward along the course of distribution of the superior gluteal nerve. Little motion could be elicited in the hip joint; crackling or crepitation was also obtained. Forcible extension brought instant relief from pain and tenderness in the affected parts. A provisional diagnosis of chronic rheumatic arthritis having been made, the patient was given sodium salicylate, ten grains; lithium citrate, five grains; liq. morph. acetat, fifteen minims in an agreeable menstruum, three times a day. Salines for the bowels were ordered, counter extension applied, and massage twice a week was given. No satisfactory result from this treatment was obtained. After ten days of this line of treatment the patient acquainted me with the fact that she always felt better every other day, and that she had observed this since the inception of her disorder in February. Obtaining a specimen of her blood, it was subjected to a microscopical examination. The following were the findings: Tertian plasmodia in large numbers, with a goodly sprinkling of flagellate forms; leucocytes, 13,200; erythrocytes, 2,400,000; hæmoglobin, 30 per cent. Stained specimen showed absence of eosinophiles. The patient was at once put upon cinchonic treatment; fifteen grains of quinine sulphate being given daily; ten grains at 9 a. m. and five grains at 3 p. m. On the day for its recurrence after this treatment was inaugurated, the paroxysm of pain was slight and continued in ever increasing slowness until it finally disappeared. The dose of quinine was reduced to ten grains per diem after the tenth day, and arsenic in the form of liq. potass. arsenitis in five minim doses, three times a day, was added. The patient was able to walk with a crutch two weeks from the date the correct diagnosis was made and walked without any support four weeks thereafter. She had a normal labor on July 3rd. On the 17th of July the microscope disclosing the entire absence of the hæmatozoa in the blood, the cinchonic treatment was discontinued, and the patient put upon a ferruginous tonic.

CASE V.—H. C., a female, sixty-five years old. I was called to see her on the same day as that of Case IV, May 21st. She told me she was having a similar attack to the one for which I treated her four years before, namely, that she was passing blood in large quantities with her urine, that she had been doing so for the preceding three days, and that she was very weak in consequence. The specimen of the secretion in the urinal shown me had more the appearance of blood than urine. Though I have been her physician for the past twelve years I had no recollection of ever treating her for hæmaturia. A careful examination failed to disclose any fact or facts which might help determine the source of the blood. I therefore prescribed the following:

- ℞ Fluid extract of ipecac.....3ss;
- Fluid extract of ergot.....5;
- Fluid extract of digitalis.....3ss;
- M. Sig.: A teaspoonful every four hours.

A favorite prescription in hæmorrhagic conditions. On my visit the following day she was out and I did not see her. When I saw her the third day she informed me that she was slightly better; there was less blood passed, and the urine had the appearance of coffee. After continuing this kind of medication for one week the patient informed me that she had observed that her urine cleared up one day and became bloody the next. I in-

structed her to collect the amount voided in twenty-four hours in a vessel, and send a specimen of this to my office for examination. The following are the findings of the urinalysis: Color, blood red; reaction, alkaline; specific gravity, 10.35; albumin, 4 per cent.; sugar, negative. The sedimented matter under the microscope showed the presence of red blood corpuscles pigmented with the tertian parasites in abundance. Under cinchonic treatment the hæmaturia disappeared in the course of one week. At no time was there fever.

CASE VI.—I. S., female, about thirty-five years of age, married, four children. She came under my care on June 8th last, giving the following history: She had been ill for eight weeks; had had two physicians, but had derived no benefit from their treatment. The principal symptoms complained of were severe pains in the right umbilical region, directly parallel to McBurney's point; the pains lasted from twelve to twenty-four hours and were intractable to all medication. Neither hypodermic injections of morphine, of which her physicians had given her several, nor turpentine stupes sufficed to do more than give a temporary relief. A profuse diarrhoea would then supervene, lasting for two days, when the pains would cease and she would be comfortable for the rest of the week. On the eighth day the same process would recur and the same cycle of pain and diarrhoea be repeated. She felt as if matter accumulated in a cavity situated in the course of McBurney's point, giving rise to the pains on repletion, the pains subsiding when empty. The stools at first were watery, then mucous; towards the end they were mucous streaked with blood. There was profound anorexia; the tongue was coated and flabby; eyes sunken; the facies pinched; the general appearance one of extreme exhaustion. Examination disclosed no lesion which can be detected by the recognized method of physical examination of the parts affected. In the absence of a satisfactory datum on which to base a diagnosis the patient was given daily a high enema of one quart of warm water containing twenty grains of silver nitrate in the hope of influencing favorably any inflammatory condition of the intestinal mucosa which may have escaped detection by manipulation, administering at the same time by the mouth a powder, consisting of salol, ten grains; sodium bicarbonate, ten grains; calomel, one sixth of a grain, three times a day. The octan attack recurred, notwithstanding this treatment. My suspicion as to the paludal character of the disorder was then aroused, and an examination of the blood was made. The quartan forms of the plasmodium of Laveran were found in large numbers. The patient was given twenty grains of acid quinine a day—ten grains at 9 a. m. and 3 p. m., respectively. She took at the same time a mixture containing five minims of liq. potass. arsenitis, ten minims of tinctura ferri chloridi and one thirtieth of a grain of strychninæ sulphatis after meals, three times a day. On the following eighth day, at the expected time of the recurrence, only a slight symptom was felt. The treatment was continued for two weeks when she complained of cinchonism, and the quinine was reduced to ten grains a day. She was discharged three weeks from the time of making the correct diagnosis.

CASE VII.—George C., forty-nine years of age, a laborer, consulted me in my office July 4th. The anamnesis was as follows: In the middle of April last he had been awakened from sleep one night about one o'clock by a violent spasm or shock which went through him; he then became unconscious. On regaining consciousness the following morning, about nine o'clock, he felt extremely weak and exhausted, and was told by his wife and attendants that he had foamed at the mouth and had had convulsions, but of this, of course, he had no knowledge. Two weeks afterwards he had

another shock, less severe than the first. He was not troubled any more until the 19th of June, when he had another attack, then a second on June 26th, and a third on the previous night, July 3rd. He was in mortal terror of another attack, fearing it would be the last of him. Suspecting by the periodicity of the attacks that the process might be of malarial origin, I obtained a specimen of his blood and submitted it to microscopical examination while he was waiting in the office. My suspicions were confirmed; quartan parasites, with flagellate forms, in large numbers, were to be seen in the field. The patient was put upon cinchonic treatment; the paroxysms ceased, and he discontinued treatment at the expiration of four weeks, a second blood examination giving negative results as to the presence of malarial organisms.

CASE VIII.—E. T., female, twenty-one years of age, single. I had attended her in the winter of 1904-05 in an attack of nervous dysmenorrhœa. I observed during the exacerbations, which occurred quite often, that she would go off in epileptiform convulsions. On August 10th last I received a telephone message to come and see her on a certain street in Berkley whither she had moved. On my arrival I was informed by her aunt that she was having some attack similar to that for which I had treated her before; that for three successive evenings at about eight o'clock, she would go off in a cataleptic seizure, with hands and limbs rigid and eyes rolled back and fixed, remaining in this condition until about three or four, when she would begin to relax and become herself again by eight in the morning. A local physician had been called in on the first night of the seizure and had administered some sedative, which was effective in overcoming the rigidity of the muscles the first night, but the remedy had failed to act in the two succeeding evenings. The regularity of the occurrence of the seizures, and its duration, corresponding as it does to a febrile stadium, led me to suspect malaria after eliminating all other possible cause or causes for the attack. Accordingly I put the patient on quinine, obtaining at the same time a specimen of blood for examination. This confirmed my diagnosis, as did also the cinchonic treatment on my second visit. Tertian parasites in abundance were to be seen in the field of the lens. The patient felt slight symptoms of the attack at the usual time which was evidently aborted, as it soon passed away. She continued under treatment for ten days when she was discharged.

CASE IX.—E. W., female, twenty-two years old, married, three children, was gravid in the fifth month. On June 29th, I was called to see this patient, who gave the following history: As early as March last she had been troubled with a persistent, hard, metallic cough and aching in the left breast. She had had two physicians during this period, but neither had succeeded to relieve her of the aching. There was no pain, but a persistent aching. It usually began about four in the afternoon, attained its maximum intensity at nine, and began to subside by ten o'clock. By one or two in the morning it was sufficiently quiet to enable her to go to sleep. The site of the aching was in an area about two inches in diameter, situated between the third and fifth intercostal spaces and equally distant from the outer border of the sternum. There was a slight dullness on percussion from the fourth rib to the clavicle and marked impairment of vesicular resonance. There were no râles. The expectoration, which was slight, consisted of glairy mucus. Three examinations of the sputum made at different times revealed the presence of staphylococcus aureus, but no tubercle bacilli. Sedative and stimulant expectorants having failed to relieve the aching, on September 5th an examination of the blood was made. Two distinct groups of the ter-

tian organisms were found in great numbers, together with a large proportion of segmenting bodies. Upon this the patient was put upon cinchonic treatment, fifteen grains of quinine sulphate daily being given. The improvement under this line of treatment was not as prompt as in the other patients, but was more decided than under the treatment directed to the pulmonary condition. The aching did not disappear altogether, but was considerably abated. On the 16th of October labor set in, which was finally terminated by forceps, the pains being too weak to expel the child. One week after the birth of the child the aching in the breast ceased, though the tonic treatment, consisting of arsenic, iron, and strychnine, which had been given since the 25th of September, was continued for one week longer, when it was discontinued.

It is easy to multiply examples and cite cases illustrative of the protean forms in which paludism manifests itself, but my paper has already grown to a great length, and I will forbear to task your patience any longer. The following deductions, however, may be fairly drawn from the foregoing cases:

First.—That chill, fever, and sweating are not always the mode of onset of malarial infection.

Secondly.—That the seat of pathological change or congenital defect is often the point of attack of plasmodial invasion.

Thirdly.—That periodicity is the one pathognomonic symptom of all forms of paludal infection.

Fourthly.—That women are oftener the victims of malarial infection than men.

Fifthly.—That quinine is the standard remedy for malaria.

1. In all the cases cited there was no chill nor elevation of temperature in a single case.

2. Tissues which have undergone pathological changes and those which are congenitally defective are more susceptible to the toxine, which is elaborated in the process of segmentation of the hæmatozoa. What the factors are which determine the variation in the mode of manifestation of this toxæmia, so that in one patient it takes the form of a febrile reaction, in another a painful paroxysm, or a seizure of some sort in an organ previously crippled by disease or congenitally defective, are at present not fully determined, but the fact is fully attested by ample clinical observation. In Cases I, II, III, VI, and IX the symptoms were referred to organs which had been the seat of disease action. In cases IV, V, VII, and VIII the presumption is that the organs affected were congenitally defective.

3. Periodicity is what might be expected from our knowledge of the life cycle of the malarial organism. It is an important symptom and is present in a large proportion of cases. It is not easy to detect its presence in a few cases.

4. From my observation women suffer more frequently from malarial infection than men. Fully eighty per cent. of malarial fever cases in my practice are women. This is different from the results obtained by Osler from observations made at the Johns Hopkins Hospital in Baltimore (1). Of 614 malarial fever patients in his collection only 121 were females. Mosquitoes, the agents of transmission of the malarial para-

site, are as a rule found in dwellings and protected places. Women, or rather the majority of women, spend most of their time indoors and are thus more exposed to infection from mosquitoes than men are; hence, the greater frequency of malarial infection among women. I should like to know what have been the observations of other physicians on this subject.

5. The statement that quinine is a standard remedy for malaria would seem superfluous but for a desire to call attention to the fact that some cases resist quinine, even when given in massive doses, as in the following case:

CASE X.—B. R., female, about thirty-nine years old, a multipara. I was called to see her on June 21st, and found her in bed bathed in a cold, clammy sweat, with hands and feet cold, and a deep, sighing respiration. She had been seized three hours before I saw her at eleven o'clock in the forenoon. The case having been diagnosed as an algid form of pernicious malarial fever, the patient was put on fifteen grains of quinine sulphate in acid solution twice daily. She responded so promptly to this treatment that my visits were discontinued on the Fourth of July. She also, contrary to instructions, discontinued the preparation of arsenic and iron which she had been advised to take for two weeks. On July 16th, I received an urgent telephone message, summoning me to her. I found her in a state of profound collapse, drenched with a cold perspiration, the night shirt and bed clothing next to her wet. The respiration was deep and slow, very slow, six per minute; the pulse weak and thready, 120 beats per minute. She complained of a feeling of a heavy load in the epigastrium. I immediately gave her hypodermic injections of seventy-five grains of quinine sulphate, administering at the same time by the mouth three drachms of brandy in hot tea, surrounded the body with hot water bottles, and covered her with blankets. At three o'clock she had reacted and was warm and comfortable. At ten she had a slight difficulty in hearing from cinchonism. Microscopical examination of the blood made the following day revealed the presence of the hæmatozoa in numbers such as I have rarely seen. It seemed as if there was an amœba on every red cell; it was difficult to find a cell free from a parasite. The red corpuscles presented a shrunken, cremated appearance. Hæmoglobin was 20 per cent. No differential count was made. Stained specimen showed marked hypoeosinophilia. The quartan forms and the æstivoautumnal parasites were the forms present, and a large number of crescents and flagellæ. The patient was given thirty grains of the bisulphate of quinine per rectum once a day, and twenty grains of the sulphate per os twice daily. She thus received seventy grains of quinine daily. Notwithstanding these heroic doses of quinine the paroxysm of chill recurred regularly on the fourth and eighth day; the chill on the fourth day being milder, that on the eighth day being severer. It was a typical double quartan. At the end of two weeks the patient's stomach rebelled against the quinine, vomiting every dose she took as soon as she swallowed it. She became nervous and irritable and suffered from loss of sleep. Microscopical examination of the blood made at this stage showed no appreciable diminution in the number of the parasites. Quinine was, however, discontinued and methylene blue in three grain doses, three times a day, substituted. The effect of this agent on the patient was magical. The nervousness disappeared; she slept soundly; her appetite improved. But the quartan and octan chills continued. At the expiration of two weeks the patient exhibited a revulsion to this drug, vomiting every dose she took. It was there-

fore discontinued. Microscopical examination of the blood at this time showed little or no change for the better in the number of the hæmatozoa. The flagellæ and crescents were seen floating in the field as on the first examination. Meanwhile the patient showed marked melanæmia; on the palmar and plantar surfaces, as well as in the face, were large blotches of dark discoloration. She was now given seven minims of Fowler's solution, three times a day, with instructions to reduce the dose by one minim on the appearance of toxic symptoms. She continued this treatment, reducing the dose drop by drop, until even one drop produced a disagreeable sensation. By this time the chills had stopped; the melanæmia disappeared; the malarial organisms had also disappeared from the blood; the hæmoglobin was 70 per cent.; the patient presented a healthy appearance. In the two months, from June 21st to August 20th, she took no less than two ounces and a half of quinine, until she got to the limit of tolerance for the drug. Still, in spite of this large quantity, the chills continued, and the microscope repeatedly proved the presence of the parasites in great numbers.

This by no means disproves the efficacy of quinine in malarial fever. It is simply the exception which proves the rule, and it shows that there are some cases of malarial infection which resist quinine. In view of this fact the dictum of Osler that "the physician who at this day cannot treat malarial fevers successfully with quinine should abandon the practice of medicine" (2), cannot be accepted without modification.

References.

1. *Allbutt's System of Medicine*, ii, p. 723.
2. *Ibidem*, p. 742.

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THE DEGENERATIVE TYPES OF MYOCARDIAL DISEASE.*

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The medical textbooks of ten years ago devoted the greater part of the space allotted to the heart to the disorders of the valves, and differential diagnosis of these lesions was laid down with a minuteness that seemed to accurately distinguish each change present. Prognosis was almost invariably stated as bad. Clinical and post mortem evidence soon showed us that many of the finer points of differentiation were utterly futile in practice and that the signs were often caused by muscular disease. At the same time we learned that chronic endocarditis is in many cases not incompatible with a relatively comfortable and active life, the chief dependence of which lies on the condition of the myocardium. Therefore during late years the attention of physicians has been largely withdrawn from the study of endocardial disease and has been centred on disorders of the heart muscle, which we have found to be not only more frequent in occurrence but also more serious in nature.

It is but recently, however, that we have attempted clinical differentiation of the types of myocarditis, though we fully realize how differently the various forms react to treatment and the great benefit which follows proper measures when the condition be cor-

rectly recognized early, and proper management at once instituted. In the hope that study of the forms of this group of disorders may guide us to a more complete understanding and a yet more satisfactory treatment, I beg to present this brief paper which is directed chiefly to the anatomy and treatment of certain degenerative forms of myocardial disease.

My material has been taken from my personal experience in private and hospital practice and from the study of a series of 457 cardiac cases at the autopsy table. In a very considerable number of cases I have found disease of the myocardium to have been responsible for death, and yet to have passed unrecognized through those stages in which much might have been done to prevent or arrest the lesions. Seventy of my 457 patients died as a direct result of myocarditis, which was present as a primary or complicating lesion in 330 cases.

We are generally accustomed to group practically all types of myocardial disease under the head of myocarditis. Now, as a matter of fact, but few of the heart muscle lesions are really inflammatory in nature, though many of them are caused by inflammatory agents. For example, it is quite proper for us to consider the myocardial conditions which ensue in consequence of pericarditis as a myocarditis, but it is manifestly quite incorrect to class the alterations which follow sclerosis of the coronary arteries or those which occur after diphtheria or typhoid as inflammatory. In a very large class of myocardial diseases the changes are essentially degenerative in character, and if we call them such, we shall place the true nature of the disease process with which we are contending before us in a more clear light.

I shall make no attempt in this short paper to include or discuss all types of myocardial degeneration, but I shall limit myself to those which I have found most frequently in post mortem examinations and to those which experience has shown to be most important from a clinical standpoint.

OCCURRENCE.—Of my 457 patients who died with or as a result of cardiac lesions, 330 cases presented degenerative types of myocardial disease, 214 chronic endocarditis, complicated in 142 instances by disease of the muscle, 51 acute endocarditis and 66 pericardial diseases, associated in 44 cases with myocarditis. Manifestly these statistics do not include the very large number of patients who died of conditions in which the myocardial degeneration figured as a mere subsidiary factor though also obviously at least certain of these excepted instances might be rightly included in the series. As regards sex, 231 cases of the 326 have been among men as against 99 cases from a series of 131 in women. Thus it is seen that rate of occurrence is relatively higher among women; I believe this of little significance, however, as the changes are directly dependant on the ætiological factors concerned in the production of the lesions, and practically on these alone. These agents seem to have been more frequently operative among women than men in my series, probably due to the fact that my patients have been chiefly seen at the great charity hospitals of New York.

Although it is impossible to prove, I believe that degeneration of the myocardium is relatively more frequent among the relatively well to do than among the poor or middle classes, and among professional rather than laboring men. The reasons for

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these general statements will appear as we discuss the ætiological factors concerned in the production of these diseases.

Pathological Anatomy.—I have elected to discuss but four distinct types of myocardial degeneration since these include all those which I have found common and most important.

Albuminous Degeneration.—Ninety-six of the 330 cases showed this change. It is probably the most frequent type of myocardial degeneration with which we meet clinically. It is essentially an acute process and either early death or early recovery takes place, or it passes over into some other type of degenerative lesion. It does not exist as a chronic condition. As a rule, nearly all parts of the heart muscle are equally affected, though in some forms it may be localized even in a small area. Gross inspection of the heart shows the muscle to be lighter in color than normal, while the cut surface is turbid in appearance, abnormally moist and swollen.

The consistence of the muscle is reduced, and, as a rule, the myocardium in these cases is found relaxed and the heart chambers filled with blood. Laminated and anæmic thrombi are very commonly found in the cavities. Cardiac dilatation, paralysis, and even rupture, when associated with high blood pressure, are occasionally seen. The blood vessels of the heart are congested or anæmic, according to the special ætiological factor concerned.

Microscopically the heart muscle cells are swollen, turbid, and the cytoplasm is filled with minute albuminoid granules which cause the swelling and turbidity mentioned. These granules apparently originate from a transformation of the actual cytoplasm of the cells and not by deposition. In the more extreme cases the nuclei of the muscle cells are involved in the same process, and both nucleus and cytoplasm are alike transformed into a foreign form of albumin of similar nature in so far as can be determined by microchemical reactions.

Physiologically the effect on the fibres is to decrease their contractile power and in marked cases more or less physical disintegration takes place.

Albuminous degeneration is induced by acute toxic conditions, particularly those of bacterial nature and this is the sort of heart lesion which is found in the toxic types of pneumonia, in sepsis, in scarlatina, and in nearly all the acute infectious diseases, as well as occasionally in those of longer standing, as typhoid and the more active cases of tuberculosis. The lesions are produced in acute alcoholic poisoning and in many other less frequent toxæmias. The clinical manifestations of heart failure which appear so commonly in these conditions are familiar to all of you.

Healing is unquestionably complete in most of these cases where dilatation does not occur and where actual cellular destruction does not take place, but the condition is very apt to be followed by fatty degeneration, or, when dilatation has supervened, by fibrosis.

Fatty Degeneration.—This associated with infiltration was found in 188 cases and predominated in 102 of these. It occurs most frequently as a sequence of parenchymatous or albuminous degeneration. It is a subacute process as a rule, though it

often becomes chronic. It is a much more permanent condition than albuminous degeneration.

Fatty degeneration consists in the transformation of the proteids of the heart muscle cell into fatty substances, or probably more commonly a transformation of the degenerated albuminoid granules into fat. Gross inspection of the heart commonly shows that the organ is enlarged, but the walls are more or less thin, yellowish red or grey in color, and soft in consistence. Varying grades of dilatation, usually ventricular, are the rule, and the walls of the ventricles are more extensively diseased than those of the auricles. The nucleus of the cells is rarely or never involved, and microscopically one finds the heart muscle fibres studded with minute oil globules, commonly mingled with more or less granular parenchymatous material.

White thrombi are very frequently found in the heart cavities, and the vessels of the myocardium are generally anæmic. Obviously the muscular possibilities of these degenerated and fatty cells is much decreased, and the force of the systole is reduced, hence the tendency to dilatation.

Healing of pronounced lesions of this variety is obviously limited. No doubt a certain amount of the fatty material may be absorbed and removed, but probably the condition is chiefly relieved by increased activity on the part of the less diseased fibres. Fibrosis is particularly apt to follow in such cases.

Fatty degeneration of the heart is mostly found following such prolonged infectious processes as typhoid fever, and exists typically in its most exquisite form after diphtheria. It is too commonly thought that cardiac failure after this disease is due to purely nerve paralysis, as a matter of fact this fatty change of the heart muscle is often responsible. Fatty degeneration of the heart also occurs in long standing tuberculosis, syphilis, and like conditions. It also results from endarteritis of the coronary vessels, in which case cardiac aneurysm or rupture is very apt to follow, especially when complicated by eventual coronary thrombosis.

This variety of myocardial disease is not apt to be found in uncomplicated obesity, but is common in chronic and in some acute metabolic disturbances, as gastrointestinal disorders, yellow atrophy of the liver, and in eclamptic conditions, also uræmia. It is very frequently associated with a similar disease change effecting the media of the arteries.

Fatty Infiltration.—Fatty infiltration is not sharply differentiated pathologically from many cases of fatty degeneration, nevertheless I believe that there is a very important clinical distinction in the greater results which are to be secured by the treatment of this condition.

Fatty infiltration is very common, particularly in well to do and indolent subjects. It is also frequent among brain workers, so called, particularly those who associate this manner of life with deficient exercise and too abundant food. The portions of the organ mostly involved are beneath the epicardium and along the bloodvessels and fibrous sæpta.

The condition is usually easily recognized on mere gross inspection, by the abundant deposition of fat which surrounds the heart and extends with the stroma into the myocardium. The walls are

generally thick, but obviously a considerable portion of the thickness is made up of fat. The heart is soft, yellow in color, and the invaded muscle appears turbid grey, while the consistence is greatly reduced. Occasionally the heart in these cases is almost incredibly soft, especially when the infiltration is associated, as it very commonly is, with more or less fatty degeneration.

Microscopically we find that the deposition of fat has consisted in a transformation of the normal areolar supporting stroma of the myocardium into adipose. Almost invariably we find that the heart muscle cells show atrophy and fatty degeneration of greater or less degree, probably due to pressure.

Healing must take place through the removal of the abnormal fat and this may be complete, so that if muscular atrophy has not advanced too far or if fatty degeneration is not pronounced, practically complete healing may result. When proper treatment can be enforced it is followed by the most certain relief seen in any of the severe degenerative types of myocardial disease.

The effects of fatty infiltration on the physiological activities of the heart are too well known to demand elucidation here, manifestly it is usually associated with adiposity, and hence is easily recognized.

As we have already indicated, the condition most commonly arises when either too much food is taken in or when the ingestion is not oxidized in the course of the body metabolism. Examples of the first are well shown in the familiar glutton's heart, in the epicure, or when, as often occurs, the character of food selected is not well suited to the true wants of the body, though often too well adjusted to the tastes of the patient. This is the condition which we find in the ordinary obese person; it is the form of lesion at the seat of the beer drinker's heart, a type which is common enough in Germany, particularly in beer loving Bavaria, where fatty infiltration of the heart, associated with fatty degeneration forms the essential lesion of the "Münchener Herz."

This same type of heart is frequently seen in our better class patients, particularly in the great cities where physical indolence is often a matter of necessity for the business man who sits hour after hour and year after year in his office, allowing himself but slight physical work, and at the same time pouring into his digestive tract the amounts and quality of food which might be well calculated for a farmer, a hunter, or a foundry man. I have frequently observed this type of heart in the animals of the New York Zoological Park, especially in those which in the wild are called upon to range wide and constantly for a scanty food. In the park, as is the case with the business man, an abundance of choice food is presented without adequate physical work for proper oxidation, this form of heart disease follows, and is often in these animals, as in man, the direct cause of death.

We must make no mistake in expecting this type of heart only in the obese, though naturally it is most commonly found in this class. We also see it frequently in those who are not overly nourished, and when the general deposit of fat is not abnormal. This form is also common in those whose early life has been spent in physical activity, but who have been, either voluntarily or involuntarily, deprived of their physical work by the demands of middle and late

life. The paths of nourishment to the heart, the habits of food, in quality and quantity, have already been formed and, as you all know, these are very likely to be held to through life; as a result an abnormal deposit of fat takes place about the heart. I have seen this condition mostly in those whose youthful activities have been somewhat excessive or specialized, as in the college athlete, whom I believe, in so far as regards his cardiac condition in after life, is rather a less good risk than his college mate who has never distinguished himself in athletics.

Brown Atrophy.—So far these types of myocardial disease have been quite well, though I think not sufficiently recognized, but we still have another and a very common type of myocardial degeneration of great clinical importance and which has been but very infrequently described, nor has, in my opinion, its recognition clinically been sufficiently impressed upon us.

Brown atrophy of the heart is a chronic condition, often following incompletely healed albuminous degeneration of the myocardium, though most commonly arising slowly and independently as a result of some usually long standing ætiological factor. In point of occurrence it is frequent in my series, being found present in 62 patients out of the 330 of the entire series. It occurs very commonly mixed with fatty changes, being so associated in 18 instances.

As a rule, the heart is small, as might be expected from the name, but it may be found only slightly atrophied, especially when it follows in cases of cardiac hypertrophy. It is oftentimes very small, even as little as one half the normal size. In color the muscle is distinctly brown, mahogany like, and the consistancy is not greatly altered, though at times the muscle appears to be somewhat rubbery. As a rule, the condition is most marked in the walls of the ventricle, though it also occurs in those of the auricles as well.

Microscopically the essential change consists in atrophy of the individual cells and in the transformation of the cytoplasm or in the deposition in the cytoplasm of a fine brown iron bearing pigment which is found most abundantly at the poles of the nucleus. Generally the striation of the muscle is less obvious, but the nucleus is ordinarily uninvolved.

In most cases the heart is neither dilated nor otherwise anatomically malformed. The most marked effect on the function of the organ is diminished muscular power with resulting minimized circulatory activity. It is most often associated with general or local arterial disease, that is with arteriosclerosis.

Brown atrophy of the heart is rarely or never followed by healing, in so far as we are able to determine. It is a permanent change, inevitable in its results when once established.

This type of myocardial disease occurs, as we may say, physiologically in old age, it is the normal senile heart, but it is also found in youth and middle age under many diseased conditions, especially those characterized by prolonged toxæmia. It is the heart characteristic of chronic alcoholism, morphinism, and like conditions. I have reproduced this lesion artificially in animals, the subject of long

standing experimental poisoning. It is seen in chronic tuberculosis, in some cases of persistent syphilis, and, as we have already mentioned, it is the cardiac condition natural to slowly developing arteriosclerosis of the coronary vessels. Brown atrophy also follows long continued overwork of the heart; thus it is seen in cases of Graves's disease and in nearly all conditions where persistent tachycardia is a prominent symptom.

Course of Degenerative Myocarditis.—Clinically it is frequently impossible to distinguish these various types of degenerative cardiac disease, except as we are able to identify the prominent ætiological factors as we secure them, either from personal observation or from the history of the patient. We are, however, generally sufficiently able to discriminate from the ætiological factors with our knowledge of the most frequent pathological changes which commonly follow such conditions. It is thus often entirely possible to differentiate the various types of myocardial degeneration quite satisfactorily. The symptomatic course of the different forms, however, are often quite similar, and the general manifestations are throughout practically the same, so that they may be conveniently discussed together. Obviously albuminous degeneration, occurring as it does chiefly in the course of the acute toxæmias or infections, produces some quite distinctive signs.

History.—As we have already indicated, the history of the patient, as a rule, gives at once the probable chief ætiological factor, leading directly to a more or less definite decision as to the type of degeneration predominating, for this reason the past and present personal history must be fully elicited and considered.

Personal Complaints.—I am fully convinced that we are prone to give too little credence to the complaints of the patient in this type of myocardial disease. We are too apt to assume that sensations of slight pain in the region of the heart, of feelings of fullness, or of distress on exertion, are assumed or exaggerated by the patient. More than once I have had occasion to assure myself at the autopsy table that the patient was quite correct in his diagnosis of "heart disease," when I had attributed these obscure and apparently indefinite subjective symptoms to gastric inflation, to myalgia, or at times to even worse, hysteria and neurasthenia. The complaint of cold feet and hands, and of cold nose are often symptoms to be seriously considered and investigated to see if there be in the wide peripheral portions of the circulatory tree a stagnation or retardation of the blood flow which may indicate a deficient heart force representing a stage of myocardial degeneration. Shortness of breath on inadequate exercise is a frequent symptom complained of.

Peripheral Circulation: As just mentioned, a slowing of the circulation in the peripheral parts of the body, other explanations being wanting, may be indicative of myocardial degeneration; as a rule, in such instances the pulse is weak, soft, and easily compressible. It is often arrhythmic, particularly if any extra strain be imposed upon the heart, as by exercise or mental excitement. Directly connected with these manifestations in long standing cases are those of visceral engorgement, varicose veins, slight

œdema, scant flow of urine, and reduced urinary solids.

The Heart: As has already been discussed under various pathological anatomy the size of the heart varies greatly under the different forms of the disease, and here again the ætiological factors and their probable result must be constantly kept in mind for the proper interpretation of cardiac dullness. Murmurs may or may not be present. As a rule they develop in serious cases when the heart is overstimulated, as by contraction of the vessels from the use, I should say abuse, of such drugs as adrenalin, strychnine, and the like, or by over exertion. The precise manner of production of the murmur is, as you know, open to question; personally, I believe that they are due to relative incompetence with relaxation of the muscular rings of the valves. The heart action is irregular, again more markedly so, when increased work is thrown on the organ, the strength of the systole is changeable and the second aortic and pulmonary sounds fluctuate in intensity, while the systolic sounds also vary in tone and in length. More or less cardiac distress ordinarily develops, and heavy percussion over the organ causes discomfort. Occasionally, particularly in acute albuminous and in fatty types of degeneration, actual increase in cardiac dullness after exertion may be demonstrable.

General Visceral Disturbances.—These vary, of course, according to the amount or degree of local anæmia or congestion present in the various viscera. Naturally this is symptomatically most obvious in the brain where failing mental functions, lack of response to mental or physical stimuli, mental torpor, and the like are not uncommonly due to primary degenerative disease of the heart with consequent sporadic attacks of cerebral anæmia. The same class of symptoms also appear in the spinal cord. They are very marked in the kidney at times when, as a result of deficient action on the part of the heart, insufficient excretion may follow, or occasionally, as recently pointed out by Preble, albumin and even blood cells may appear in the urine purely as a symptom of this primary cardiac condition. Similarly congestion of the liver, enlargement and tenderness of the spleen, perhaps with subsequent induration may follow. Pulmonary engorgement with expectoration of blood stained sputum may be seen.

DIAGNOSIS.—Some of the chiefest points of diagnosis have already been mentioned, but I wish to emphasize certain facts essential to diagnosis and to particularly attract your attention to methods which I have personally found useful in the detection of less marked instances of this condition. We have already, perhaps sufficiently, mentioned the irregularity and inconstant tension of the pulse. In this regard I do not consider the use of the finger as sufficiently accurate, and for that purpose I prefer to employ one of the more simple clinical sphygmomanometers, such as the Janeway or pocket Sahli. In most cases you will find that the pressure varies markedly from minute to minute, and in determining this point we should, in so far as possible, divert the patients mind so as to eliminate the psychological variation of blood pressure as much as possible. A persistently variable or inadequately low blood

pressure, especially under stimulation, as from exercise or mental excitement, I consider a point of considerable value, but a constantly low and regular pressure I do not think of so much diagnostic significance as one which varies considerably from time to time, even though usually of medium tension.

Peripheral and visceral congestions are, of course, points of obvious value; occasionally congestion of the retinal vessels, as determined by the ophthalmoscope proves of great diagnostic use. The capillary response, as shown by usual methods, is helpful in the elucidation of this point.

Auscultation of the heart, under varying conditions, is, of course, most necessary and, as we have already pointed out, the cardiac tone and length of the various epochs give us a more or less certain measure of the character of the muscular action producing these sounds.

A simple method, which must, however, not be applied to every case, and especially not to those in which acute albuminous or fatty degeneration is suspected, is to carefully outline the boundaries of the heart if necessary by auscultory percussion, and then to again mark them after rather severe exercise, as running or other active physical exertion. In nearly all forms of myocardial degeneration, except in brown atrophy, as we have mentioned, enlargement of the heart can often be thus demonstrated in suitable subjects.

The general visceral disturbances, have, I think, been sufficiently discussed for estimation in diagnosis and, as time lacks, we are anxious to pass on to the more important questions of prognosis and treatment.

PROGNOSIS.—Prognosis must depend largely primarily on proper determination of the particular type of degeneration present. In albuminous degeneration it is commonly good, except when proper treatment cannot be carried out or when the ætiological factors cannot be eliminated, as in prolonged infections. I think that, as a rule we do not sufficiently impress on our patients the importance of prolonged care of the heart in these conditions, especially in recovery from the more serious infections.

The prognosis in true fatty degeneration is bad, as regards ultimate and complete recovery, and the immediate prognosis usually errs on the side of too great utopianism in my experience. Treatment in these cases must always be prolonged, if permanent results are expected.

The prognosis in fatty infiltration is good when proper treatment can be enforced for a sufficiently long time. Except for the lesser degree of albuminous degeneration I think, that it is the most favorable of all these types of myocardial degeneration.

In brown atrophy the prognosis depends almost entirely on the extent to which the disease has gone. It must be remembered that in this condition anatomical healing is a practical impossibility, though life may exist for an indefinite time with this condition of the myocardium. Treatment is but palliative, and the changes are irradicable, nevertheless the patient ordinarily lives to die from some other and commonly secondary condition and not from the myocardial disease itself.

TREATMENT.—It is undesirable to consider the treatment of these various types of myocardial degeneration in a general way, since one of the chief

objects of this paper is to point out that treatment must first be based on a correct recognition of the character of the lesion at fault, and success in the management of these cases depends in considerable degree on the different measures of treatment required for the various forms of the disease.

Albuminous Degeneration.—We have too long neglected systematic care of the heart in those numerous acute toxic and infectious conditions in which this type of myocardial degeneration commonly appears. In my opinion absolutely essential in the prevention of this lesion is active conservation of the cardiac energy in the early stages, particularly in the acute infections. The primary measure in this direction is rest, rest which gives the least possible strain in the heart muscle and therefore rest in bed. I have seen serious cases of albuminous myocarditis follow such simple infectious processes as mild tonsillitis, and its relatively frequent occurrence in influenza is well known to you all. In a considerable number of cases the hyperæmia appears to be largely concerned in the production of the lesion. I mean that independent of any primary toxic condition the simple heat produced in certain febrile states is productive of the degeneration. Therefore I think that wide excursions of temperature should be prevented, when possible, particularly by such simple measures as the alcohol and sponge baths. One of the most marked cases which I have ever seen followed by complete recovery was evidently due to high fever which was manifest in a simple case of mumps. I even believe that the use of antipyretic drugs, in small doses is indicated in such instances as fail to respond to simpler methods of treatment. I wish to particularly caution against over stimulation in those numerous conditions in which this type of degeneration is apt to arise. Most stimulants impose more work on the already diseased myocardium, and though they may apparently temporarily benefit, in the end they cause yet more serious disease of the heart. It is much better in these cases to relieve the peripheral pressure by the nitrites, chloral, or by the use of friction and warm baths.

I have failed to find any drug which seems to prevent this type of myocardial degeneration *per se*. The bowels should be kept freely open, if necessary, by the use of drugs, and the urinary and dermal excretion should be held at their maximum so as to prevent the retention of metabolic toxins which, no doubt, add very materially to the genesis of albuminous degeneration.

I am well aware of the fact that in this type of disease we rarely have to do with the cardiac condition alone, but we are usually dealing with a general disease condition of considerable, often paramount gravity, and it is perfectly obvious that we must treat the patient or case and not any particular organ of that person, but I do think that recognition of the changes which are inevitably taking place in the heart muscle, will save many cases by treatment which in the end may prevent the development of a most serious and perhaps permanent disease of the heart.

One of the most important stages of this type of degeneration is that found in convalescence from the various infections. In these conditions in particular, cardiac over stimulation is to be avoided, for it is

at this time that we look for removal of the albuminous granules from the muscle cells and replacement by normal proteid substance. When this does not take place fatty degeneration or fibrosis is the inevitable sequence, both conditions of more or less permanent character. We must particularly avoid metabolic poisoning in this stage of recovery when disease of the myocardium is present. The bowels, skin, and kidney must be kept active, and the amount of food material must not be greater than the body is able to absorb, since metabolic poisoning is so favored, and also because the work of the heart is so increased. Therefore, while the general nutrition of the body must be kept at the maximum, and no organ suffers more from lack of proper nutrition than the degenerated heart, excess of food is unquestionably bad, and in my opinion we are, many of us, too apt to overnourish patients in many instances of convalescence. It has never been satisfactorily shown that fatty tissue taken in as food becomes deposited in the parenchymatous cells in fatty degeneration which follows as the natural sequence of unhealed parenchymatous degeneration, but at least all of us know that over nourishment, coupled, as is usually the case, with improper excretion, is highly productive of lasting disease of the myocardium following albuminous degeneration.

For the reasons thus stated, it is apparent that exercise must be always carefully considered and never be excessive in recovery, on the other hand I feel confident that insufficient exercise with incomplete burning of the food products and defective support of the circulation retards absorption of the disease granules and favors replacement with fat. Thus it appears that constant attention must be given to the condition of the heart in so far as we are able to determine by the stethoscope and sphygmomanometer, so that we may accurately judge as to the proper amount of cardiac work and nutrition which can be expected to give the best results in any given case.

Fatty Degeneration.—As we have seen from the anatomical characteristics of fatty degeneration, and from its dependent relationship to preexisting albuminous degeneration, treatment in fatty degeneration cannot be expected to yield brilliant results. In most cases where I have met with good and permanent results, I have concluded that I have been mistaken in my diagnosis or at least in my estimate of the extent of disease present.

We have already discussed under parenchymatous degeneration those measures which appear best calculated to limit or prevent the development of fatty degeneration, and the general hygienic measures advocated in the former condition apply with equal force in this type of disease. In this condition even a more cautious consideration of the question of exercise is demanded, and while over stimulation is most harmful, insufficient stimulation causes increase of the lesion.

I do not believe that we have any medicinal measures which are of the slightest benefit in this condition, except as they may correct other visceral, perhaps contributory, disturbances or as they may be required to lessen the blood pressure or at times, to increase it. For the former purpose I have preferred the nitrates, especially nitroglycerin, and for the latter I have derived the best results from ergot

and digitalis, occasionally substituting the former by strophanthus. Strychnine I believe to be useless, except perhaps for temporary use. An earnest attempt must be made in every case to find the causative factors and if still operative to remove them. When this is due to arterial disease, we may often accomplish a great deal by the administration of the iodides, irrespective of syphilitic disease and by the proper application of massage or other more active exercise.

High altitudes are to be avoided in this form of heart disease and all sudden strains such as might occur under strong mental or physical excitement must be strictly interdicted. The quantity of liquid in the food, I believe to be best reduced and the amount of salt also lessened on account of the action on the blood and kidney, thus tending to inadequately raise blood pressure. Tobacco should be absolutely prohibited, but I believe that the use of wine and whiskey when taken in small amounts, in those accustomed to these foods, is beneficial rather than otherwise. Beer and ale, in any such amounts that give any satisfaction are to be absolutely excluded. Tea and coffee are not to be allowed for habitual use, though I think that strong coffee is often one of our best remedial measures in these cases when cardiac or circulatory stimulation appears to be indicated.

The Nauheim treatment is perhaps the most satisfactory of all methods in this type of disease. It is much more successfully given at Nauheim, than by any of the artificial methods practised here, largely, I believe, because patients going to Nauheim are prepared to make a business of their treatment, while here, unless they are actually bedridden, it is practically impossible to get the same persons to live up to the routine life which contributes so importantly to the Nauheim régime. I have had too little experience with the artificial treatment to speak with authority concerning it, but it is my impression that most of the good results are obtained by the rigorous control of all the doings of the patient, rather than from the action of the carbonic acid baths.

Exercise is a most important question, and a most difficult one. It must in all cases be systematically enforced and be wholly under the control and guidance of the physician, otherwise it should be reduced to a minimum, at least in all active cases.

As I have previously intimated, treatment in fatty degeneration of the myocardium is most unsatisfactory, and its successes are almost wholly dependant upon checking the progress of the disease or the relieving of symptoms, or of concomitant visceral disturbances outside the heart. Good results are obtained, when the diagnosis is wrong and especially in those cases where instead of degeneration we are dealing with fatty infiltration.

Fatty Infiltration.—Given moderate compliance on the part of the patient and intelligent management on the part of the physician, brilliant results should follow the treatment of fatty infiltration of the heart provided that the lesion be not too long standing or that it be not too markedly complicated by degenerative changes in the muscle cells or by fibrosis.

The first essential in the management of these cases is the prevention of further extension of fatty infiltration. This is primarily to be accomplished by

proper adjustment of the diet. It is usually impracticable to put these patients at once on a strict obesity diet, indeed in a considerable number of cases true obesity may not exist, and the excessive fatty deposit may be more or less limited to the cardiac membranes. This step is also contraindicated in most pronounced and in many milder cases by the fact that the myocardium is often the first tissue to suffer from the malnutrition which immediately follows this measure. Cardiac anæmia with fatty degeneration and dilatation may supervene and speedily terminate the case. It is my custom first to cut out the most deleterious and least nourishing articles, as, let us say, potatoes and sweets. These are replaced, at least at first, by an increase in the amount of meat and should always be associated with the use of small doses of digitalis or strophanthus. As the case progresses other articles may be gradually withdrawn, until the patient at the end of a greater or lesser time, is on a strict obesity diet. This must always be effected much more cautiously than in cases of obesity without cardiac disease, and during this substitutive stage the patient should be frequently seen and closely observed, otherwise, dilatation or rupture and death follow.

All articles of food, such as beer and other substances, notably tobacco, which are known to have a direct toxic action, are to be withdrawn at once. It is well during the first few days of this treatment to have the patient in bed, or to at least keep him very quiet so that heart strain is reduced to a minimum.

The fluids of the food must be diminished to a point measured by the comfort of the patient, and perspiration is to be favored by massage, warm sponge baths, or occasionally by hot packs. In some cases, occurring in young and robust subjects the Turkish or Russian bath given under the direct supervision of the physician may be used, but with most patients I consider this to be a dangerous procedure, certainly in the early conduct of the case and before the physician is fully acquainted with the stamina and reaction of the patient.

At first the exercise should not exceed that to which the patient is fully accustomed, though in people of sedentary habits, as in office workers, massage and passive movements should be begun at once, preferably with the patient in bed. These are to be increased from day to day, depending on the reaction of the patient. As soon as the case has progressed sufficiently, personal exercise in the open air is to be preferred. In this regard we may, to a considerable degree, comply with the likes and dislikes of our patient, but the exercise must be graded and should each day stop just short of, or at the symptom of dyspnœa after the method so fully elaborated by Oertel. In some cases this may be well accomplished by giving the patient definite and increasing distances to walk or inclines to mount. In several cases when absence from business has been impossible, I have had the patient climb a certain number of stairs to his office, each day increasing a few steps until all could be mastered without excessive fatigue. When it is possible, outdoor walks or exercise is, however, to be preferred, and a very palatable dose for some men is found in a prescription of so many holes of some definite golf course

each day. Later a certain time at tennis, played in moderation and saneness is yet better. I have found in all instances that when the form of exercise prescribed was agreeable to the patient, not only would it be carried out more faithfully, but also better results were so gained where pleasure and inclination blend with duty. Later hunting and even mountain climbing in moderation may be safely advised. It must be fully appreciated that, especially as regards exercise, each case is a law unto itself.

As to the employment of drugs to facilitate the absorption of excessive fat, I am in general, opposed to these means, and while, of course, the bowel must be kept freely open, preferably by concentrated salines, active purgation is often most dangerous, and is not to be considered. The use of thyroid products and of similar drugs is also usually to be discountenanced, though in several cases when strict enforcement of dietary and exercise rules could not be secured or when I have felt that rapid reduction of the fat was absolutely necessary, I have used thyroid products, reprehensible as the measure may seem. I have always employed the drug, however, in conjunction with digitalis or strophanthus and only when the case has been under my closest supervision. In this regard I must cite one case where rapid fat deposition, following typhoid had taken place in a young woman to the stage of almost constant dyspnœa and marked circulatory deficiency:

I placed the patient at once on a well chosen diet, begun the use of digitalis and a few days later, on account of the acute exigencies of the case, I began the use of thyroid tablets in a dose of 5 grains, three times daily. My results were early and most gratifying, but as soon as the patient was able to be out and to take exercise the thyroid tablet was discontinued. The case progressed most satisfactorily, the heart action becoming excellent, and the loss of general adipose being fully as rapid as I thought wise to permit. The patient was finally discharged with the request that she return in a month, meanwhile all drugs had been discontinued for some two weeks. After the month had passed my patient presented herself, so greatly reduced that I was alarmed, but even forced exercise failed to demonstrate any muscular deficiency of the heart, and I had to confess that the cardiac condition was the best that I had seen it. She then told me that she had been so delighted with the cosmetic effect of the fat reduction that when I had ordered the thyroid tablet discontinued she had doubled the dose and had used the drug constantly up to the time that she came to see me, this though I had fully explained the nature of the drug and its dangers to her. Such is woman. A month later the patient, who had meanwhile sailed for Europe, came down with a second serious and prolonged case of typhoid. Her attending physician later wrote me, evidently with as much surprise as I myself experienced, that throughout the long course of the infection, the heart had given absolutely no trouble, and she returned to America in better condition in so far as the heart was concerned than I had previously seen her. Since this time a judicious diet, coupled I feel certain with the surreptitious use of thyroid product has kept this young woman in excellent condition.

Purges may be acceptably used in a good many cases but when they cause weakness or set up, as they may do, inflammatory disease of the gut, they are not, of course, to be continued. As a rule, I have found the concentrated salines most useful, such as

sodium phosphate, magnesium sulphate and sometimes bitter Kissengen water. Diaphoretic drugs are not in my opinion advisable, though in strong and well selected cases the hot bath, the carbondioxide bath, and in a few instances, the full Nauheim treatment are excellent measures. I have found exercise, carefully measured and performed, clothed in a sweater or some other warm and porous article of clothing, much the safest and best.

Once a patient has been relieved of fatty infiltration of the heart, means must be taken to prevent a redeposition of fat. When constant exercise is not practical except such as may be obtained in the room or private house, I insist that the patient shall take a certain period each year, during which the fat producing foods are reduced usually with a proportionate increase in the nitrogenous elements. A few weeks spent in the woods hunting some of us have found to be a very palatable prescription for the purpose of keeping excess adipose down and to thus stimulate and relieve the heart muscle. The precise form of exercise may be fitted in each case to the personal likes and possibilities of the individual patient, but this method of treatment I have found to be especially desirable in those cases where a considerable portion of time in early life has been spent in athletic work and where in latter life through the demands of a sedentary occupation, this exercise can no longer be kept up. As we have already mentioned, this class of patients is particularly liable to develop fatty infiltration of the heart.

Brown Atrophy of the Heart.—As we have stated under pathological anatomy the lesions of brown atrophy are permanent, and in so far as we can tell, healing and restitution takes place only through increased action on the part of the less diseased fibers and through replacement of necrosed and atrophied cells by connective tissue. Nevertheless treatment serves to obviate the further progress of the disease and to place the heart under the best possible functional state. It is therefore necessary in these cases that the general condition of the body be as good as possible and especial attention to the excretory functions are particularly urgent since this is a disease of toxic origin in a predominating number of cases.

The bowel and skin must be kept active. The question of proper nutrition is also a most important one in this type of degeneration and very difficult to determine in a general way, since the diet must be adapted in each case to that particular instance. Some patients do best on a diet rather rich in meat, others thrive on a generous supply of carbohydrates, though by excessive feeding we must be careful not to engraft on the brown atrophy a condition of fatty degeneration or infiltration, as was found in eighteen of my cases.

Since this disease is so very intimately associated with arterial disease, and with syphilis, especial attention must be given to the arterial condition. Many cases show vast improvement under the iodides, and when the arterial tension is deficient vasoconstrictors as ergot and strychnine are well exhibited, or when, as is more commonly seen, the tension is too high, vasoconstriction is to be combatted by the use of the nitrates, sometimes by the temporary employment of chloral, or of strontium bromide. When the condition is due to general an-

æmia, not dependent on arterial disease, iron and arsenic often produce marvelous results and a diet rich in iron bearing substances is well chosen.

In that group of cases such as in Graves's disease or in those highly nervous individuals where the heart action is too rapid, sedatives such as a bromide, especially that of strontium, and occasionally the use of belladonna or digitalis or strophanthus in small doses are desirable; these measures are especially urgent where brown atrophy is associated with cardiac dilatation, and obviously rest in bed with quiet mental and physical surroundings is also to be insisted upon. As in acute parenchymatous diseases of the myocardium and in febrile conditions, the ice bag over the cardiac region is often productive of very good results in these cases of tachycardia.

In old age, where brown atrophy of the heart is more or less physiological, I think that we have no drug which relieves the dyspnœa and quiets overaction and intermittence like alcohol given as food and taken with the regular meals. The form of alcohol must depend on the particular characteristics of each individual, as a rule I have found that rye whiskey given well diluted in egg nog, as a punch, or in the excellent form of a "high ball" is most efficacious. In other cases sherry, port wine, or milder forms of the wines may act best. Food and exercise are questions of difficulty and must be individually decided for each particular case.

Careful study of the patient and thorough appreciation of the character of the anatomical changes and their productive factors will in most cases enable us to so manage brown atrophy of the heart as to give comfort and happiness to the patient until some extraordinary strain such as a serious renal lesion or a pneumonia upsets compensation when acute cardiac dilatation and death are to be feared.

In brown atrophy as in all the other types of degenerative myocardial disease, constant care and supervision of the patient is necessary, and symptomatic treatment of most varying character must be from time to time applied. In no class of cases does a careful study of individual characteristics pay both patient and physician more than in the treatment of the degenerative lesions of the heart muscle.

44 WEST NINTH STREET.

BERIBERI, ITS HISTORY, SYMPTOMS, CAUSATION, AND TREATMENT.

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Authors are not agreed upon the ætiology of the word Beriberi. Bontius (*De Medicina Indorum*) and Ridley (*Dublin Hospital Report* II., p. 227) have it derived from sheep, one account of the similarity of the gait between this animal and the patient. Good (*The Study of Medicine* IV., p. 480) takes Bepepi as meaning a shell, and quotes Eustathius for such an opinion. Marshall (*Notes on Ceylon*) says it is but a repetition of the word beri, which means, in the language of Ceylon, weakness or impotence. From whatever source it comes, it was surely known to Eristrate, according to Manget.

Synonyms are: Bepepi: Eustathius; beriberia. beriberi: Boritius; hydrops asthmaticus: Rogers; beri-beri: Ridley; ballismus beri-beri: Smediam; synclonus beri-beria: Good.

Beriberi and barbiere are apparently the same affection; the former representing the acute and the latter the chronic form of the disease. Such an opinion is found in the writing of Bontius (*loc. cit.*), Good (*loc. cit.*), J. Copland (*Dictionary of Practical Medicine*, part I., p. 163, London, 1885), Marshall, Clark (*On Diseases Which Prevail in Long Voyages to Hot Climates*, etc., London, 1792, Vol. I., p. 99), Scott, 1838 (Vol. I., p. 243).

Ætiology.—Beriberi was once supposed to be peculiar to the climate of India, especially to the island of Ceylon, the coast of Madras, and Gandgam. Hamilton says that beriberi is ripe when the season of the "Monsoon winds" is past and the atmosphere damp and cold; also sudden severe thermometric undulations of the weather. Percival believes that bad food is a prolific cause. Weather variations, especially at Pulitopan influence the increase of the disease. Hunter testifies to have seen it among sailors having been badly fed.

With a better knowledge of the pathology of the disease its habitat was recognized in latitudes and altitudes other than those of India. Beriberi is met on all continents. Cases are reported from Dublin, Saint Gemmes-Sur-Loire, Tuscaloosa, Ala., Arkansas State Asylum, and Little Rock. It is my sad privilege to chronicle twenty cases having originated in the vicinity of the village of Carencro, La., mostly among the black race and natives of the State.

Dutrouleau (*Maladies des européens dans les pays chauds*) gives a short notice of it, for Martinique. Bontius (*Dictionnaire de médecine*, Paris, 1823) says that beriberi was sometimes taken for lumbago. Until recently a great diversity of opinion has existed regarding the cause of beriberi. According to Pechelaring and Winckler it is caused by the presence in food and infected habitations or ships of specific microorganisms. Beriberi has no dependence on anæmia. From one of my patients, chemical and microscopical analysis made by Dr. H. L. Ducrocq shows, hæmoglobin past 70, plasmodia, urine embryos of filaria; fæces uncinaria and few eggs; ankylostoma duodenale. In the blood of beriberi patients, bacilli and micrococci are to be found. Pure cultures of those micrococci give a nerve degeneration of a like nature to that found in beriberi where injected into rabbits and dogs. Beriberi is produced by some microorganism. In one hundred cases only once was a kind of filaria found in the blood. Ankylostoma was only met with eight times (*Lancet*, Dec. 26, 1891). Beriberi is due to a bacillus cultivated from rice; the same was found in the blood of rats that had died after eating this rice (de Lacerde Bentley-Scheube, *Die Beriberi Krankheit*). Organisms were sought in the blood of patients while alive and numerous microorganisms, cocci, and rods were found.

Four varieties of organisms cultivated from the blood of beriberi patients are as follows: (1) *Micrococcus albus*, a micrococcus which was immobile, acrobic and which liquefied gelatin; (2) *Micrococcus tetragonum flavus cocci* arranged in tetrad forms; (3) *Micrococcus flavus*, also aerobic and liquefying gelatin; (4) *Bacillus flavus*, short rods in pairs and chains, in active motion, aerobic and with spore-formation (W. K. Hunter, *Lancet*, July 31, 1897).

Dr. J. Tswzuki of the Japanese army reports in

the *Archiv für Schiffs-und Tropen-Hygiene* for July, 1906, that he has demonstrated the microorganism of beriberi. It is a diplococcus measuring from 0.4 to 0.5, by 0.7 to 0.8 of a micron, consisting usually of two small globules which lie close to each other but sometimes of an isolated corpuscle and again of a short chain of three or four bodies. It can be stained with all aniline dyes and by Gram's method. It does not possess the property of locomotion, but shows an active molecular motion and it does not produce spores. The author took as a basis of his experiments the theory that beriberi was an infection and that its organism can not be found in the urine of the patient, as in other infectious diseases, such as typhoid fever. After experimenting for many months he was able to demonstrate a specific diplococcus which always agglutinated with beriberi serum, but never with serum of healthy persons. His diplococcus, injected into rabbits and guinea pigs, induced beriberi symptoms in these animals. He was able to observe the acute or cardiac form and the chronic or paralytic form of the disease, which correspond to the clinical picture in man. The post mortem examination of the animals showed lesions similar to those found in man in cases of beriberi. The Japanese name for beriberi is kakke or beriberi-coccus (*New York Medical Journal*, August 11, 1906).

All those patients of mine live on low, damp or marshy lands. Their food is the same as that of other planters having habitations on elevated or dry and drained lands. There is no history of syphilis. One, a young white woman, is the offspring of tuberculous grand-parents; the other white woman, who is married, is the direct issue of a neurotic, mute and deaf father, who is strongly addicted to liquors.

Symptoms.—The disease begins in this manner: The patients complain of languor, weakness and heaviness of the legs. Walking is an effort, the knee joint and feet feel loose, and sometimes the knees knock together. Movement in the leg is diminished and the patients are easily fatigued; pains are felt all over the body, but particularly in the calves of the legs. This general malaise lasts for a time more or less long. Then an œdema first appears on the dorsum of the foot, ascending to about the knee; next is the face, which may swell considerably; ascites, which are not uniform in development, are more pronounced in the hypogastric, inguinal and epigastric regions. The stomach bulges out and is very painful; the œdema continues posteriorly in the neck, shoulders, and muscles of the back and, inferiorly, the buttocks.

Edg. M., ætas fifty, consulted me at my office for some swelling of the feet, difficulty in walking and rather a loss of sensation in the lower extremities. Dyspnœa, face œdematous, urine normal. I took the trouble to be some acute renal disorder and prescribed accordingly. There was no improvement; on the contrary, his condition went from bad to worse till he died, three weeks after his consultation at the office. In this case the anasarca was rapid; the upper and lower extremities disproportionately large, with complete anæsthesia.

Miss M. M., ætas twenty-three, presented the cardiac or paralytic form. The more prominent symptoms were acute pains along the spinal cord; violent dyspnœa; paralysis of the lower extremities; emaciation; cough and expectoration so nauseous that no one

could stay in the room. Strychnine, iron, quinine, and cod liver oil triumphed and to-day she walks, though weak in the legs.

At first the heart's sounds are normal and respiration follows the cardiac condition. When loud, tumultuous beats develop, the breathing becomes more and more laborious, ending at last in a troublesome dyspnoea. The pulse is weak and passes eighty beats per minute. There is no fever, no hypertrophy of the liver nor of the spleen, and due to no treatment whatever, the oedema, after having lasted more or less long, disappears but to return again. One of my patients, a white woman, for the past three summers becomes dropsical, to be free from the trouble during the cold season and early spring, being then only bothered by weakness of the legs, necessitating the use of crutches; also pains in the legs with occasional febrile movements and convulsions in the right toe; no chill with the fever. With the return of the warm season oedema of the legs and face reappears, and with it the heart's sounds grow louder, beating strongly against the chest; the organ seems to be displaced and no valvular lesion is to be discriminated. Prostration increases with the anasarca; the face is puffed and expresses anxiety; the appetite is lost, digestion is poor, and during the course of the malady most of the food is vomited. The bowels are obstinately confined, so much so that clysters and purgatives are often powerless. The knee jerk *nil*: wrist and foot drop; sleep is much disturbed. Patients do not, or only lightly, feel the floor when walking, and I would not suggest to any one of them to walk with closed eyes for fear they fall. There is no lung trouble. Special pains were experienced by the white woman and described as pins in the calves of the legs and dorsum of the feet; she also complained of globus hystericus, although not hysterical. Perspiration seems to be more profuse on the head and chest than on other parts of the body. By picking the legs with a pin the zone of hyperæsthesia was clearly delineated with the anæsthesia. An acute, agonizing, constricting pain on the heart manifested itself a week or ten days previous to E. M.'s death.

The white woman is paralyzed from the knee downward and also in the hands. There is no history of syphilis nor of tuberculosis in the offspring of the drunkard, all of whose children suffer from a variety of nervous neuroses. The well water which the white family and blacks drink is brackish and oftentimes it has a creamy, oily consistence on the surface.

This paper is written from symptoms collected as observed and met with in my patients.

Treatment.—Dick, who treated many beriberics in Kanartic in 1782-1783, obtained good results from pills of extractum elaterini composition and gentian one fourth grain each, hourly, till copious evacuations of the bowels took place. This medication was repeated every three days. Later, Dick treated with some advantage with full doses of spirits of nitre, the wine of antimony, and frictions with warm camphorated oil. Bloodletting and mercurials failed. Christie, however, pushed mercurials combined with squill to salivation. He recommended cordials and especially punch made from the tincture of juniper, stimulating beverages and warm liniments; during

convalescence he prescribed tonics of wine and porter. He blistered the chest in the severe forms. To combat vomiting he used brandy; either against dyspnoea and laudanum against the spasms. Digitalis gave bad results.

Hamilton, Colguhoum, and Rogers bled copiously and according to the patient's strength; to sustain the action of bloodletting mercurials were prescribed internally and externally with an occasional dose of calomel and gamboge. Ridley (1814) recommends the same treatment, having himself been sick twice with beriberi. His favorite purgatives were calomel and potassium bitartrate. He had the lower extremities frictioned with a liniment composed of camphorated oil and turpentine. He also gave a pill of one to two grains of calomel and of two or three grains of powdered squill every three hours, and as a beverage, cream of tartar or a punch of juniper. He blistered the back of the neck, the back and painful regions.

Needless to reproduce I. Bontius' opinion (1642), nor Tulpus', Sauvage's (1772), Lind's (1788), J. Clark's (1792), for the described treatment is the same as theirs.

The modern treatment is altogether tonic; the removal to a healthier locality, and Europeans to return to their own country. Some doctors are greatly in favor of aperients at the commencement of the disease, such as iodium sulphate, carlsbad salts, etc. Other physicians prescribe salicylic acid or sodium salicylate. Bälz prescribed salicylic acid. Digitalis is highly praised. Phlebotomy as recommended by Marshall has lately been praised by Anderson and Bälz. Morphine should be given for the relief of oppression and dyspnoea; potassium bromide in severe hyperæsthesia. The Japanese doctors are much given to ordering a species of bean (*phaseolus radiatus*, Japanese: *adzuki*), which possesses diuretic properties, as food.

I was very much pleased with the use of Basham's mixture in combination with the tincture of cinchona, half drachm each, four times a day, with two drops of Fowler's solution and tincture of nux vomica, separately. Lime and sodium glycerophosphate acted very well. As a diuretic I have used potassium acetate, digitalis, and lithium citrate. Four of the negroes recovered; the rest of my patients thanked me for my services and some employed root doctors and others, regular physicians.

I am not aware that any Louisiana physician has written anything on this subject previous to this article.

November Health Report of the Panama Canal Zone.

—The November report of the Department of Health, Isthmian Canal Commission, shows there were 241 deaths in a total population in the Canal Zone, including Panama and Colon, of 89,881, corresponding to an annual death rate of 35.76 per 1,000 population. Of the 241 deaths there were 40 among the whites, 192 among the blacks, and 9 among the Chinese. Five white employees died; one of tuberculosis, one of peritonitis, one of malaria, one of empyema, and one of pneumonia. There were 8 deaths from typhoid fever, 41 from malarial fever, 1 from æstivoautumnal fever, 7 from malarial cachexia, 2 from hæmoglobinæmic fever, 7 from dysentery, 6 from beriberi, 5 from septicæmia, 16 from tuberculosis of the lungs, 1 from general tuberculosis, and 2 from pernicious anæmia.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LVIII.—How do you treat acute synovitis? (Closed January 15, 1907.)

LIX.—How do you treat phlegmasia dolens? (Answers due not later than February 15, 1907.)

LX.—For what purposes and in what manner do you use opium in preference to any of its constituents or derivatives. (Answers due not later than March 15, 1907.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable, no one answer to contain more than six hundred words.

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of \$25 for the best essay submitted in answer to question LVII has been awarded to Dr. J. Ballagi, of Homestead, Pa., whose article appeared on page 171.

PRIZE QUESTION NO. LVII.

THE USE OF MERCURY IN SYPHILIS.

(Concluded from page 220.)

Dr. Felix Amabile, of New York, remarks:

The selection of a mode of administering mercury to a syphilitic patient is dependent upon the age of the patient, whether infant or adult, the severity of the infection, susceptibility of the patient to the action of mercury, and the stage of the disease in the patient seen.

No mercury is administered during the first stage of syphilis until the rash has made its appearance. In adults, with the disease of the average severity, the method of choice is the one of deep muscular injections of mercury salicylate suspended in liquid paraffin; this is the cleanest, most satisfactory and economical method of administering mercury. The patient's susceptibility is first tested by an initial dose of corrosive mercuric chloride, gr. $\frac{1}{20}$ to $\frac{1}{16}$, dissolved in water \mathfrak{M} 10 and given hypodermatically in the usual manner; no symptoms of mercurialization developing the patient receives his first deep muscular injection the following day.

The injection mixture is a 10 per cent. mercury salicylate in liquid paraffin previously made up and sterilized by the pharmacist; half an ounce in a wide necked glass stoppered bottle kept in the office is a sufficient amount to have on hand, and will keep indefinitely; mixture to be shaken well before using; an ordinary glass barrel syringe and a needle about one and a half inches long are used; syringe if used for the first time is cleansed with alcohol and ether and if used for this purpose exclusively need not be cleansed of

the oil each time it is used, so long as ordinary care and cleanliness are employed when it is put away; the needle is sterilized by immersion in alcohol or passing it several times through the flame of an alcohol lamp. The patient being in a standing posture, hands resting on the back of a chair, the site selected for injection is the most prominent and fleshy portion of the buttock; this is about one inch to either side of the intergluteal fissure and about two inches above the plane of the tuberosities of the ischia; the skin is cleansed first with a little green soap tincture and water on a pledget of cotton, followed by one with alcohol; the syringe is loaded with the desired dose, the needle attached, and the needle rapidly plunged straight in for one half to one inch, depending upon whether patient is thin or fleshy; the syringe is now unscrewed for a moment and the end of the needle examined; if a few drops of blood make their appearance the needle is reinserted; the reason for this procedure is to obviate the only danger outside of infection, connected with this operation, viz., the puncturing of a bloodvessel and the depositing in it of the oily fluid, causing an embolus. With these precautions this cannot occur. The syringe is screwed on again and the dose injected; the needle is rapidly withdrawn and the injected site is massaged for a few moments with the pledget of cotton previously used with alcohol; the puncture wound is touched with collodion and covered with a small piece of adhesive plaster. The first dose given is 5 \mathfrak{M} , increased gradually to 10 \mathfrak{M} once a week, injecting right and left buttock alternately.

In malignant forms of the disease, or where secondary symptoms are of such a severity as to make it imperative that the patient come under the influence of mercury in the shortest time possible, injections of corrosive mercuric chloride dissolved in water and given hypodermatically once or twice daily are indicated; the dose is from $\frac{1}{16}$ gr. to $\frac{1}{4}$ gr., size of dose increased quite rapidly. When dangerous symptoms are controlled it is best to go on to the deep muscular injections of the salicylate of mercury in liquid paraffin.

In certain severe cases where mercury is indicated, yet patient develops symptoms of mercurialization on the first dose and shows a marked idiosyncrasy to mercury in all its forms given by any mode, mouth, injection, or inunction, it will often be found that such a patient is in a very poor physical condition, and under the proper treatment with tonics, such as iron, quinine, and strychnine, and in conjunction with cod liver oil during the cool months of the year, proper foods, and good air and rest, he will stand the injections as well, and do as well under them as any other patient, provided the dose is very small at the start and very slowly increased.

Some patients there are who will object to the injection method regardless of how dextrously the needle and syringe are manipulated. Here the mouth administration of mercury is the second best method. Begin with a tablet triturate of the yellow iodide of mercury, $\frac{1}{10}$ gr., three times a day after meals; increase gradually till

patient begins to show signs of salivation or complaints of cramps or diarrhoea, when the dose is reduced by one third to one half its size, and this is the size of the dose for the patient to continue on. If patient complains at the start with the smallest dose combine the yellow iodide of mercury in capsule form with half to one grain of powdered black pepper.

In infants with syphilis gray powder, $\frac{1}{10}$ gr. to 1 gr. given three times a day, is best; another good method is to put 5 grains to 15 grains of the official mercurial ointment on a belly band and allow skin to slowly absorb it; put the amount on every morning.

Patients after six months' steady treatment with mercury are placed on tonic treatment for one month minus mercury, when it again is resumed. Mercury is given exclusively during the first year, after that potassium iodide is given separately per mouth in conjunction with the mode of administering mercury by deep muscular injection, or the two, potassium iodide and mercury combined in a mixture and given per mouth; the latter method is the best after the first year.

R Potassii iodidi, 3v;
Hydrargyri iodidi rubri, grs. iss;
Syrupi sarsaparillæ compositi, / āā Jii.
Aq.

Misce et Signa.

One teaspoonful three times a day in water.

The inunction method of treating syphilis, though effective, is too difficult and inconvenient of administering properly and too filthy for modern private practice to-day, except in infants, as already indicated.

Dr. Gustav Hausser, of Cincinnati, O., states:

As soon as the diagnosis of syphilis is fully established mercury salicylate is given intramuscularly in a ten per cent. suspension of petrolatum, prepared as follows: Ten per cent. (by weight) of mercury salicylate is added to liquid petrolatum, this is put into bottles, which are then placed in a hot water bath so as to thoroughly sterilize the suspension; the bottles are then corked with sterile corks and kept until future use.

An ordinary hypodermic syringe, best one used expressly for this purpose, having a slip joint needle is employed; the needle itself should be one and a half inches long for an individual whose gluteal muscles are well developed, and one inch long to be used for a poorly developed gluteal region. The injections are given deep into the gluteal muscles upon alternate sides.

The patient is made to stand upright; firmly upon both feet; the site of the injection is about the centre of the gluteal muscles, and about one and a half inches from the anal fold; this is cleansed with soap and water, then with alcohol upon sterile cotton, and lastly ether; the latter, besides cleansing the skin of oily particles, also has a decided anæsthetic effect. The bottle containing the suspension is thoroughly shaken, the cork removed, and the syringe filled with about fifteen drops of the suspension, the needle attached, is then rapidly passed through an alco-

hol flame to sterilize it, the syringe is held upright and all air expressed, after which it is held firmly but gently between the index finger and thumb (as one would hold a pen while writing), the needle is then plunged rapidly to the hilt into the site of injection and at right angles to the surface of the skin; the syringe is detached from the needle, which is done rapidly and with little manipulation with the slip joint syringe; the proximal end of the needle is closely watched to see if the needle has entered a bloodvessel, in which case the suspension will slowly ooze out; and be followed by a drop or more of blood, should this occur the needle must again be withdrawn and another puncture made (oozing after the withdrawal of the needle shows that a bloodvessel has been traversed, and need cause no alarm, as no trouble will be likely to result). If the implantation has been found safe the syringe is again attached to the needle and the piston is pushed slowly but firmly, until ten drops of the suspension are injected. The needle is then quickly withdrawn and the puncture sealed with sterile flexible collodion or zinc oxide plaster, which may be removed in a day or two.

The injections should commence immediately upon the diagnosis being made, ten drops being injected every three to four days upon alternate sides of the buttocks until a course of fifteen injections have been given; then a period of rest for three months is allowed, during which time the patient is to report every two to three weeks for observation, at the end of this time a second course of twelve to fifteen injections is again given, followed by a period of about six months' interval, after which a third course is usually required.

This, as a rule, suffices for the average case, but the patient should be kept under observation for several months longer, reporting at three to four weeks interval.

Concluding I would state that I have never seen any untoward bad effects, abscess, or other troublesome condition in several hundred injections made by this method, and have seen many cases clear up promptly by this treatment which resisted the older methods.

Therapeutical Notes.

For Hæmoptysis.—Courtois-Suffit and Laffay recommend the following combination in the treatment of pulmonary hæmorrhage:

R Ergotini, 2 grammes;
Cinch. liq. 2 grammes;
Syrup. p. 2 grammes;
Aq. 2 grammes.

M. To be taken in teaspoonful doses during the twenty-four hours (say, once every hour.)

Le Nord médical, November 15, 1906.

Liquid Mustard Plasters.—Boulé (*La Clinique*, July 13, 1906) has found that some of the inconveniences of mustard leaves, or sinapisms, may be avoided by making a solution of volatile oil of mustard (4 to 6 grammes) in alcohol of 90° (enough to make 90 c.c.). In order to make the application, it is only necessary to moisten a layer

of cotton or gauze with this solution, and apply to the desired locality, cover it with a bandage or a layer of wadding.

Thiosinamine in the Treatment of Sclerotic Otitis.—Lapau, of Madrid (*Revue hebdomadaire de laryngologie, d'otologie et de rhinologie*, December 15, 1906), has published a preliminary note upon the treatment of deafness resulting from sclerotic changes in the tympanum, especially when produced by chronic catarrhal otitis. In his first group of cases which he had treated four years previously, the patients were not benefited by thiosinamine, and he discontinued this method. Recently, however, he has resumed it, since Sugar, Hirschland, Kassel, and others have reported successful results. The remedy was used both hypodermically and through the Eustachian tube. For hypodermic use a fifteen per cent. alcoholic solution was employed, of which 1 c.c. (15 minims) was injected. For injection into the tympanum a ten per cent. glycerin solution was used (a few drops at each insufflation). Excellent results were reported in cases of sclerotic lesions consequent upon suppuration in the middle ear (adhesions, bands, ankyloses, etc.). Tapia is now investigating the subject anew, and promises to publish a detailed report in the near future.

What Should Not Be Done in Angina Pectoris.

—At the conclusion of a lecture upon this subject, Professor Lemoine (*Le Nord médical*, November 15, 1906) gives a brief résumé of things to be avoided in treating these patients: 1. In true angina pectoris, caused by ischæmia of the heart in the course of arteriosclerosis at the time of the attack, heart tonics should not be given, such as digitalis ergot, caffeine, strophanthus, convallaria majalis, etc. These agents would only increase the arterial tension, which is already too high. They should not be employed until the period of the disease occurs when the myocardium, attacked by sclerosis, is enfeebled, so that the cardiac fibre becomes inefficient. Huchard is of the opinion that during the attack the usual nerve sedatives, such as antipyrine, potassium bromide, sulphoanmethane, ethyl carbonate, paralydehde, and chloral hydrate, should not be used. He also denies any therapeutical utility to belladonna and cocaine for these cases. In his opinion the therapeutics of true coronary or aortic angina is included in amyl nitrite, spiritus glycerylis nitratis, and sodium iodide. 2. Do not use potassium iodide for too long a time, as the potassium salts act unfavorably on the heart structures. After a brief period we may for the potassium substitute sodium iodide. 3. Do not refuse the benefits of general sedatives and hypnotics to patients suffering with pseudoangina pectoris, when the pain is the most prominent symptom. 4. Do not forget to treat the underlying general condition which may cause the anginose symptoms (such as gout, diabetes, etc.). 5. Do not regard as useless the well established principle of revulsion (made over the precordial region, especially the ice bag and wet cups) in cases of angina pectoris of infectious origin.

White Swelling of the Knee.—The preferred treatment by Benoît (Paris Thésis, 1906, *Journal de médecine*, November 11, 1906) is by modifying injections (of which the best are camphorated naphthol, guaiacol, or creosote in oil, and iodoform in ether, or in oil). In children this is the only treatment to be considered; in adults surgical measures may be discussed. The formula preferred by the author contains the following ingredients:

R Sterilized oil,.....	34 grammes;
Ether,	34 grammes;
Naphtol,	20 grammes;
Iodoform,	9 grammes;
Creosote,	2 grammes;
Guaiacol,	1 gramme.

This mixture is introduced into the synovial cavity by means of an aspirator. The limb is immobilized in plaster. On the third day the aspirator is inserted at the point of election, which is at the level of the superior angles of the patilla, and it is introduced obliquely towards the head of the tibia. The injections are to be repeated once daily until decided inflammatory reaction occurs, which is usually after the fourth injection. After pus begins to form it requires about ten more injections to finish the treatment. The quantity of pus obtained by the aspirator regulates the time of the injection. Generally speaking, when the pus begins to diminish, an injection is given. After ten or twelve have been administered, the joint can be dried up by two or three injections of iodoform emulsion with ether or oil.

Treatment of Angina Pectoris of Infectious or Dyscrasic Origin.—Among the pseudoanginas, Professor Lemoine classes those arising subsequent to infection or during the cause of an infectious disease. Thus in acute rheumatism this syndrome may occur. In this group of cases he recommends for the relief of the pains in the chest the application of wet cups, or of leeches, to the precordia, because there is evidently an irritation of the cardiac plexus by the infectious agent or its toxines. He also uses the ice bag locally or the spray of ethyl chloride or bromide. He has also had excellent results from small flying blisters or vesication by ammonia. Internally, sodium salicylate is given in small doses (0.30 to 0.50 gramme, or grs. v-viiss, daily). Antipyrine is also useful. The patient is to be kept strictly upon a milk diet. The angina pectoris (malarial origin) requires the prompt administration of quinine. At the earliest moment he gives a hypodermic injection of the hydrochloride, dissolved in an equal quantity of warm water (1 c.c. = 1 gramme). After the paroxysm is over he prescribes the hydrobromate or the sulphate by the mouth. When the angina is of syphilitic origin he advises the mixed treatment. Ordinarily, he gives calomel or gray oil (one drop) hypodermically, and internally potassium iodide (1 to 3 grammes daily). Inhalations of amyl nitrite are serviceable, and also injections of nitroglycerin, the latter given subcutaneously. In the interval between the attacks sodium iodide is administered (0.25 to 0.30 gramme daily). In diabetes mellitus, angina is frequent. Two indications are

to be fulfilled: (1) Diminish the proportion of sugar in the blood; and (2) relieve the pain. Certain remedies conduce to both results, such as opiates, bromides, antipyrine, sulphomethylmethane, manganese. When antipyrine is used he associates sodium bicarbonate with it, giving one gramme of antipyrine and 0.25 gramme of soda, once or twice daily, for a not longer period than five days at the most. He also praises the following combination:

R Ext. opii,0.01 grammes;
Ext. belladonnæ,0.005 gramme;
Ext. valerianæ,0.10 gramme;
Pulv. cinchonæ,q. s.
Ft. pil. No. I.

Take two or three of such pills, during the day.

He also resorts to the alkaline treatment, giving as much as 10 to 20 grammes of sodium bicarbonate in the course of the day. Ordinary diabetic treatment has no action upon angina, and it is necessary to have recourse to arterial medication by iodides, nitroglycerin, etc.; in other words, depressors of the arterial tension. When the anginose symptoms have subsided the patient is placed upon the general treatment for diabetes. When the angina pectoris occurs in gouty subjects he immediately has recourse to colchicum, giving the wine in decided doses. Sodium salicylate produces the same results, though generally less efficacious. In gouty angina it is also important to restrict the diet to milk, and alkaline spring water; later the ordinary diet for gout is followed. In the angina, which sometimes accompanies exophthalmic goitre, the diet should be rigidly restricted; alcohol and tobacco should never be allowed; and very little of tea or coffee. Excitement and excesses, physical or intellectual, should be avoided. Hydrotherapy is useful. Bromides and antipyrine may be given in decided doses. Iodine is forbidden, as it increases the cardiac erethism. Faradization is the best method of treating the heart manifestations in Basedow's disease, using a weak current (faradic, ascending) for two or three minutes daily.

Treatment of Chronic Leg Ulcer by Circumferential Incision.—In a recent Paris Thesis (*Journal de médecine*, September 16, 1906) Le Pipe, of Rennes, advocates, in old varicose leg ulcers, a circumferential incision of the limb, down to the muscular aponeurosis and above the site of the ulcer. His method is briefly as follows: A few days' preparatory treatment is devoted to cleaning up the ulcer by washing it freely once or twice daily with hydrogen dioxide (12 volumes), and by applying dressings of simple boiled water. When the ulcer is sufficiently clean to obviate any danger of its infecting the wound, the operation can be performed. The patient being anesthetized and the limb antiseptically prepared as usual, an Esmarch bandage is applied to the upper part of the thigh, the patient being placed upon the operating table as if for an amputation. The limb is held extended by an assistant. The ulcer is covered with sterile towels; the point selected for the incision is on the level of the garter. The surgeon standing at

the side passes his hand with the knife under the limb, and begins his incision at the inner border of the crest of the tibia and carries it downward and backward, making an incision through the skin, vessels, and nerves to the fascia, being careful not to cut into the muscles. After making this incision as far back as the peroneal muscle, the knife is brought to the front of the limb at a point 2 or 3 cm. from the tibia and another incision is carried downward until it meets the first incision, thus girdling the limb with the exception of the small bridge of 2 or 3 cm. of skin, which is left to facilitate the reposition of the parts by suture, after suturing all the veins, even the smallest, with catgut. The larger veins should be dissected up a little distance from the wound and surrounded by a ligature, close up, the excess being trimmed off after the ligatures are tied. In the section care is taken to include the external saphena, the internal saphena, cutaneous, peroneal, and termination of the lesser sciatic nerves, and also the external saphena vein. In closing the wound he uses horsehair ligatures. The leg is flexed on the thigh to facilitate coaptation. The wound is dressed with gauze compresses wet with sterilized water. Opportunity may be taken during the anesthesia to curette or clean the ulcer. A wet dressing is applied with some compression over the ulcer. The knee is kept slightly flexed. The advantages claimed for this operation are that it is easy of execution, and can be practiced by physicians generally. The instruments required are very simple. It is without danger. It can be done under local anesthesia by cocaine if preferred to general anesthesia. In cases of extensive varix of the thigh the external saphena vein may be resected at the same time that the circumferential incision is made. Moersch declares his conviction that any one who will give this method a trial will always repeat it, on account of the facility of the technics and the results which it secures.

Tetany, Pseudotetany, and Their Mixed Forms in Hysteria.—Curschmann, in *Deutsche Zeitschrift für Nervenheilkunde*, calls attention to the likelihood of confusing tetany with hysteria at times, since these patients with pseudotetany may show nearly all of the objective signs of tetany itself. He cites a number of histories. In the first patient true tetany was complicated by hysteria. The patient had a hemitetany of the left arm and side of face. There was also an otitis media and intenia. A radical operation had been performed. A second patient showed tetany with hysterical attacks. Chronic enteritis was also present. The histories of three patients with pseudotetany are then given, with a summary of the literature of other similar cases. The author concludes that practically all of the symptoms of tetany can be found in pseudotetany with the exception of the increased muscular activity to electrical stimulation (Erb's sign). This sign constitutes for Curschmann the chief differential diagnostic sign between true tetany and pseudotetany.—Through *The Journal of Nervous and Mental Disease*.

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MILK AND TUBERCULOUS DISEASE.

For a number of months now the tendency of medical opinion has been toward a decided accentuation of the dissent which was originally expressed, and more widely entertained in silence, when Robert Koch propounded the thesis that human and bovine tuberculous disease differed from each other to such an extent that the propagation of the one from the other was at least uncommon. Koch's opinion on this point has met with no great support from the first, and it is now, we feel warranted in saying, almost discredited. Much of this growth of adverse judgment has been brought about by experimental researches conducted by officers of the Bureau of Animal Industry of the United States Department of Agriculture. So far as the general public is concerned, however, it is undeniable that the widespread currency given by the newspapers to the gist of a British commission's findings within the last few days has made a tremendous impression. The commission's conclusions are quite in accord with those of our Bureau of Animal Industry, concerning which we have kept our readers informed. The essential feature of the resulting doctrine is the presumption that infection takes place much oftener by way of the digestive canal than by way of the air passages.

Now that these teachings are meeting with general acceptance, it is almost wholly to milk that the public turns its attention as the source of infection. This is both natural and justifiable, if with milk we include butter and cheese, for the other bovine food products are reasonably sure to be sterilized in the

ordinary operations of the kitchen, but it will not do to lose sight altogether of the use of raw meat and its expressed juice as articles of diet. Pasteurization of milk is naturally looked to as our main reliance in avoiding infection. Probably it would answer the purpose if it were universally resorted to, but it is doubtful if, even with the present general interest in the subject, it is likely to be employed by the public on a scale large enough to check the spread of tuberculous disease materially—that is, if it is left to the people themselves. It might be practicable to require the producers or the dealers to do the pasteurizing. Apparently, it is not sufficient to rely on bacteriological examinations of milk brought to great cities, for they cannot be carried out without the consumption of enough time to allow the milk to spoil. We are inclined to think that the tuberculin test should be applied to milch cows more generally, as well as more frequently in the case of the individual cow, than has hitherto been commonly the case. Certain it is that in one way or another our milk supplies must be placed above suspicion.

DR. JAMES CARROLL, OF THE ARMY.

Few men have deserved better of their country—in his case an adopted country—than Dr. James Carroll, who is now an assistant surgeon in the army. In our issue for December 29th we urged Congressional action in recognition of his distinguished services in the past and in providing for his continued usefulness. To what we then said we wish to add now some specific mention of his career. James Carroll, a native of England, enlisted in the United States army when he was less than twenty years old. He was soon made a corporal and then a sergeant. He served in the campaign against the Ute Indians from October, 1879, to June, 1880. In 1883 he was detailed as a hospital steward, and soon afterward regularly appointed as such. He was discharged in 1898, and on the day after his discharge he was appointed an acting assistant surgeon and assigned to duty in the laboratory of the surgeon general's office. His almost continuous military service made systematic medical study difficult, but he managed to find time for three sessions of college work, one in New York and two in Baltimore. He received his degree in medicine from the University of Maryland in 1891. He had already come to be looked upon as so particularly fitted for research work that the age requirement was waived when he wished to appear for examination by a medical board, and he was appointed an assistant surgeon in 1902, being then forty-eight years old. He has since served as curator of the Army Medical Museum and as professor

of bacteriology and clinical microscopy in the Army Medical School.

The one incident in Dr. Carroll's career that has endeared him to the people, and the one that will doubtless appeal most strongly to Congress in his behalf, is his heroic voluntary subjection of himself to the bite of an infected mosquito, in consequence of which he suffered severely with yellow fever. He freely imperiled his life to test a theory that has already saved thousands of lives. It was a noble act. But it must be distinctly understood that the medical profession holds him in high esteem also for his achievements in scientific research, which have been numerous and preeminently valuable. It admires him, too, for his having raised himself from the position of an enlisted man to that of a teacher of scientific men and to that of a discoverer of great truths in medicine. The surgeon general of the army can doubtless suggest some suitable measure for testifying to the general appreciation of Dr. Carroll's services and at the same time securing their continuance, which, as we pointed out in our former article, might not be accomplished by retiring him with the rank of major. Such retirement, indeed, seems quite inadequate unless it is accompanied by some further provision. We think Congress may be trusted to act generously in Dr. Carroll's case.

KNOWLEDGE WITHOUT WISDOM.

There is perhaps too pronounced a tendency to lament the fact that medicine is not an exact science and too much exertion put forth, at the expense of simple observation, in the effort to free it from the supposed reproach. Of course we all feel gratified when any advance in medicine is clearly the direct outcome of scientific research or of a brilliant conception. All enlightened practitioners acknowledge gratefully their indebtedness to the men who work in investigation only, and not one of them would consent to any abatement of such study; but there is another aspect to the matter, and men of practical sense realize that not all of their effective resources have sprung straight from the laboratory.

Such considerations have recently, in Dr. Sajous's *Monthly Cyclopædia of Practical Medicine*, been set forth by Dr. Beverley Robinson, of New York. It is the actual daily work of the clinician, he says, that should be the final test of laboratory findings as applied to the art of medicine. The deductions drawn from them often have to be modified or even altogether renounced in practice. He declares that he could adduce many illustrations of this fact, and he does give a few. In cases of chronic gastritis and atrophy of the gastric tubules, he says, while relief may occasionally be given by

dilute hydrochloric acid after meals, with or without pepsin, frequently it will utterly fail. Again, a food which chemical, biological, or bacteriological research would surely indicate to be bad is just the food that suits the stomach and is well digested and assimilated. Complicated and apparently irrational combinations of drugs are surely known to excel all others in the treatment of certain diseases, and a striking example is seen in Warburg's tincture.

The experienced practitioner, says Dr. Robinson, he who "knows and has seen a lot," is often put aside for a younger man, generally a specialist. And this, we may add, is mostly due to the fact that the public have gone mad about specialists. Almost every stomachache sends its victim to somebody who professes to have paid special attention to digestive troubles, not on the advice of the family physician, but on the sufferer's own initiative. The patient thus presents to his specialist a problem only half stated and susceptible, so far as the specialist is concerned, of only a partial statement. The learned consultant, Dr. Robinson adds, "is only on rare occasions really very helpful in a practical way, so far as doing for the patient is concerned, unless he is familiar with his antecedents from the family physician or has been the family physician of the individual about whom he is consulted." Wisdom is better than learning in many of the affairs of our daily life, and to say this is not in the least to depreciate scholarship, for it must be recognized that, so far as medicine is concerned, science can never wholly part company with intelligent empiricism.

THE OPSONIC INDEX AND THE THROAT.

Bacteriology has thrown a great light upon the pathology of throat inflammation, and affords a rational foundation for its therapeutics. As a result of its anatomical relations and of its participation in the function of respiration, the throat is exposed to invasion by air borne bacteria almost as directly as if it were actually a part of the external surface of the body. Moreover, being constantly moist and possessing a temperature higher than that of the skin, it affords superior advantages as a culture ground for microbes. The throat is also constantly exposed to infection by things taken into the mouth. Common articles of food at every meal bring these microorganisms into immediate contact with the fauces and pharynx. An additional source of infection exists in the mouth itself, especially when caries of the teeth is present, which is nearly always the case. As a matter of fact and demonstration, therefore, the human throat

constantly harbors bacteria. Some are constant, such as the ordinary air borne ferment bacteria; others are exceptional and occasional, such as the pneumococcus and streptococcus or the bacilli of diphtheria or of tuberculous disease.

It is of interest to inquire why infection does not constantly result. The pathogenic germ and the subject being in conjunction, what prevents the development of disease? Recent studies in hæmatology have brought to our knowledge the existence of certain protective substances in the human blood which have the power to limit or prevent general infection. It had long been believed that leucocytes were the sole reliance in the defense of the body against the pathogenic bacteria. It is now held that phagocytosis does not occur at all, unless there are present certain substances in the serum which act upon the bacteria so that they fall an easy prey to the leucocytes. These substances, the opsonins, have been called bacteriotropic substances. It appears to be well established that without their aid the leucocytes are powerless against the bacteria. It is also established that the opsonins exert a specific action with regard to certain forms of pathogenic bacteria. Some appear to exert a general protective action against infection, others only against a single disease.

A beautiful illustration of the application of mathematics to medicine, and apparently unique in its attempt to express susceptibility to disease by a definite numerical formula, is afforded by what Leishman and Wright have denominated the opsonic index. The special value of the opsonic index in relation to throat inflammations consists in our ability to determine by it, in the individual instance, whether susceptibility or immunity exists as regards certain infections, such as diphtheria, for instance. It is capable therefore of offering practical suggestions with regard to treatment. For example, it might decide whether or not it was a necessity to give an immunizing dose of antitoxine after an individual had been exposed to infection, especially if diphtheria bacilli were found in cultures taken from his throat. Advances in this department of study all point in the direction of the formerly unsuspected prophylactic powers of the blood serum, and suggest the conservation of this all important property, not only by special "vaccines," but also by resort to general analeptic and hygienic measures. Incidentally, it reminds us that our prognosis or diagnosis, in any given case, should not be based with too much positiveness upon the reports of the bacteriological findings in the

cultures from the throat, important as they may be when taken in conjunction with the clinical phenomena, which after all, in point of fact, we must depend upon.

A GIGANTIC UNDERTAKING.

The editor of our excellent Greek contemporary *Ἱατρικὴ πρόοδος* announces that in the course of a few months it will begin the publication of the ancient Greek medical writings, not only those that are already obtainable in book form, but also those that have long been out of print and even those which exist only in manuscript. Anybody who has ever seen Kühn's ponderous edition of the medical classics, in many volumes, each almost as big as the *United States Dispensatory*, may form some idea of the magnitude of this undertaking. We have no doubt that great care will be taken that the texts shall be faithful reproductions of the originals, free from the well intended interpolations and the errors that are to be found in current editions of the classical works.

In these days, of course, when books printed in the ancient languages are no longer sought for to any great extent, commercial gain can hardly be expected to result from such an enterprise. This is fully realized by the Greek journal, and that fact makes the undertaking all the more creditable to its projectors. Medical scholarship cannot fail to be immensely benefited by this great work, one that is sure to heighten the prestige of modern Greece in medicine and to inspire Greek physicians to put forth their best efforts toward the advancement of our profession.

RESTRICTION OF THE SALE OF COCAINE.

It is satisfactory to learn that we shall probably soon have in force in the State of New York a law that will put an end to the sale of cocaine in the apothecaries' shops without a physician's prescription. Doubtless much evil has been the consequence of the freedom with which cocaine has for many years been furnished to persons who asked for it without proper authorization. There has been altogether too much license in the matter of "dope" of various kinds. We know of no legitimate purpose for which an individual can expect a pharmacist to furnish him with cocaine except on its regular prescription by a medical man. The drug is often needed, to be sure, but it should always be used by the physician himself or in strict accordance with his directions. Many a neurasthenic person has doubtless been almost if not quite ruined in health by the abuse of cocaine, so readily obtained under the present laxity. And it is not cocaine by itself

that should be made difficult to obtain, preparations containing it should also come under the prohibition, and so they will if pending legislation, now well advanced, is accomplished. The pharmaceutical organizations of the State are much to be commended for having lent their great influence to the enactment of the law in question.

Obituary.

PAUL JULIUS MOEBIUS, M. D.,
OF LEIPSIK.

Only fifty-three years of age, and in the midst of a fruitful life, Dr. Möbius died in Leipsic on January 8th. Born in Leipsic on January 24, 1853, he studied there and at Jena and Marburg, receiving the degree of Ph. D. in 1874 and that of M. D. in 1876, and passing the state examination in 1879. In 1882 he settled in his native city, at the university of which he was Privatdocent from 1883 to 1893. In 1886 he became editor of *Schmidt's Jahrbücher*.

Möbius was not only a great alienist; he excelled also as a philosopher and especially as a writer. Besides his works on German military sanitary affairs (*Grundriss des deutschen Militär-Sanitätswesen*, 1878), and on neurology (*Allgemeine Diagnostik der Nervenkrankheiten*, 1885, and *Abriss der Lehre der Nervenkrankheiten*, 1894—to mention only a few), the book which is best known and called forth a very heated controversy was his *Ueber den physiologischen Schwachsinn des Weibes*. Basing his views upon Bischoff's researches, he tried to demonstrate that woman, being mentally and physically inferior to man, should not compete with her superior. It was not so much an absolute attack upon the ability of woman as a defense of woman against overradical emancipation. Of importance were also his *Pathographien*, a collection of pathological histories of leading men, such as Rousseau, Goethe, Nietzsche, and others.

A modest man, foreign to all official *Strebertum* and honors, a *rara avis* in a country where so much is given to rewards of honor and title, he followed up his researches, undismayed by attacks, admired by men, beloved by his friends.

News Items.

NEW YORK CITY AND STATE.

The Associated Alumni of Mt. Sinai Hospital.—The annual dinner of the Associated Alumni of the Mt. Sinai Hospital will be held at Reisenweber's Circle on Friday evening, February 22d.

The Syracuse Academy of Medicine.—The following programme was presented at a meeting of this academy, held on Tuesday, February 5th: Demonstration of Pathological Specimens, by Dr. F. A. Hulst; Mongolianism, by Dr. J. C. Carson; Parkinson's Disease, by Dr. B. C. Loveland.

Personal.—Governor Hughes, on February 4th, sent to the Senate the reappointment of Dr. Alvah H. Doty, as Health Officer of the port of New York. In announcing the appointment the Governor said that the reappointment of Dr. Doty was justified by the efficient service he has given the people in the past.

The Saratoga Medical Society.—The following programme was presented at a meeting of this society, held on Friday evening, February 1st: Malnutrition in Children, Dr. M. E. Van Aernum; discussion, opened by Dr. Dudley R. Kathan, Corinth, N. Y.; Infant Feeding, Dr. F. J. Resseguie; discussion, opened by Dr. T. F. Bullard, Schuylerville, N. Y.; report of health officer.

The Geneva, N. Y., Medical Society.—At a meeting of this society officers were elected as follows: President, Dr. G. B. Young; vice-president, Dr. H. J. Knickerbocker; secretary, Dr. J. A. Spengler; treasurer, Dr. C. F. Neider. The programme prepared for a meeting held on Thursday, February 7th, included a paper entitled: Emergencies and How to Treat Them, by Dr. G. P. Young, and an eye clinic by Dr. J. A. Spengler.

The Elmira (N. Y.) Academy of Medicine.—The following programme was announced for a meeting of this academy, held on Wednesday evening, February 6th: Dr. Elliott Bush, Horseheads, N. Y., Ethyl Chloride as an Anæsthetic; Dr. Frank L. Christian, Elmira, N. Y., Pseudohypertrophic Paralysis; Dr. S. E. Palmer, Elmira, N. Y., History of Pharmacy; Dr. Isabelle Stanley, Elmira, N. Y., Report of Cases.

The Buffalo Academy of Medicine.—At a meeting of the *Section in Surgery*, of this academy, held on Tuesday, February 5th, Dr. James Bell, Attending Surgeon, Royal Victoria Hospital, Montreal, read a paper entitled: Treatment of Rodent Ulcer on the Face. At a meeting of the *Section in Pathology*, of this academy, to be held on Tuesday Evening, February 19th, Dr. F. G. Novy, of Ann Arbor, Mich., will speak on the subject, Trypanosomiasis.

The Greater New York Alumni Association of the Albany Medical College held its annual dinner at the Marlborough Hotel in this city last week. The election of officers resulted as follows: President, Dr. Walter C. Gilday; vice-president, Dr. Frederick W. Loughran; secretary, Dr. Flavius Packer; treasurer, Dr. George W. Morris, of New York city; board of governors, Dr. Charles Gartner, Brooklyn; Dr. Frederick W. Cordes, Brooklyn; and Dr. Arthur J. Capron, Kings Park.

The Eastern Medical Society of the City of New York.—At a meeting of the *Section in Medicine, Pædiatrics, and Neurology*, of this society, held on Friday evening, February 1st, the following programme was presented: Presentation of Cases; Syphiloma (?) of Liver; Case of Sudden Ascites, Operation, Recovery; Report of a Case of Asperin Poisoning, by Dr. Maurice Packard; Case of Menier's Disease; Fibrosis Pulmonalis; Charcot's Joint, by Dr. S. J. Essenson; Three Cases of Anterior Poliomyelitis Showing Different Stages of the Disease, by Dr. M. O. Magid.

Meetings of the Section in Public Health of the New York Academy of Medicine.—This section, after having been discontinued for eleven years, has been reorganized. The first meeting was held on January 8th, when various problems relating to the health of New York city in the past and present were discussed by Dr. J. D. Bryant, Dr. H. M. Biggs, and Mr. George A. Soper. The next meeting will be held on February 12th at the Academy of Medicine, 17 West Forty-third Street, the subject being Disinfection. Papers will be read by Dr. R. J. Wilson, in charge of disinfection, Department of Health, New York city; Dr. A. C. Abbott, Chief of Bureau of Health, Philadelphia, Pa.; and Dr. L. E. La Fetra, New York city. All physicians and others interested in the subject are cordially invited to attend.

The American Society of Sanitary and Moral Prophylaxis.—The next meeting of this society will be held at the New York Academy of Medicine on Thursday, February 14th, at 8.30 p. m. The following papers will be read: What Can Treatment Do for Prophylaxis of the Venereal Diseases, by Dr. Herman G. Klotz; How Can Prophylaxis by Treatment Best Be Obtained, by Dr. James Pederson; What Are the Facilities Open to the Venereal Patient for Treatment in the Dispensaries and Hospitals of New York, by Dr. A. D. Mewborn; The Importance of Systematic Education of Hospital and Dispensary Patients Afflicted with Venereal Sexual Disorders, by Dr. Follen Cabot, Jr.; Should Hospitals Receiving Municipal or City Aid Provide Out Patient and Hospital Relief for Patients Suffering From Venereal Diseases? by Dr. Frederick Holme Wiggin.

The Brooklyn Medical Society has elected officers for 1907 as follows: President, Dr. Hugh Edward Rogers; vice-president, Dr. William H. Rankin; recording secretary, Dr. Alfred E. Shipley; corresponding secretary, Dr. Edward W. Wright; treasurer, Dr. Edwin A. Hatch; librarian, Dr. Lewis E. Meeker; trustees: Dr. A. T. Bristow, Dr. Alfred Bell, Dr. J. W. Ingalls, Dr. John D. Sullivan, Dr. Albert H. Brundage, Dr. R. W. Westbrook, Dr. William B. Brader, Dr. John H. Droge, Dr. James C. Kennedy; counsel, James D. Bell; membership committee, Dr. E. J. McEntee, Dr. C. E. Scofield, Dr. H. F. McChesney, Dr. W. B. Brader, Dr. Vincent Barber; reception committee, Dr. Alfred Bell, Dr. Peter Scott, Dr. Charles Hettesheimer, Dr. Charles Gartner, Dr. James Pullman; chairmen of clinical sections, Dr. John O. Polak, Dr. A. T. Bristow, Dr. John D. Sullivan, Dr. Walter C. Wood, Dr. Walter B. Chase, Dr. John C. Mac Evitt, Dr. James C. Kennedy, Dr. R. W. Westbrook, Dr. William Francis Campbell.

Announcement of Scholarships and Fellowships of the Rockefeller Institute for Medical Research, New York.—The Rockefeller Institute for Medical Research purposes to award for the year 1907-1908 a limited number of scholarships and fellowships for work to be carried on in the laboratories of the institute in New York city, under the following conditions: The scholarships and fellowships will be granted to assist investigations in experimental pathology, bacteriology, medical zoology, physiology and pharmacology, and physiological and pathological chemistry. They are open to men and women who are properly qualified to undertake research work in any of the above mentioned subjects and are granted for one year. The value of these scholarships and fellowships ranges from \$800 to \$1,200 each. It is expected that holders of the scholarships and fellowships will devote their entire time to research. Applications accompanied by proper credentials should be in the hands of the secretary of the Rockefeller Institute, L. Emmett Holt, M. D., 14 West Fifty-fifth Street, New York city, not later than April 1, 1907. The announcement of the appointments is made about May 15th. The term of service begins preferably on October 1st, but, by special arrangement, may be begun at another time.

A Tuberculosis Dispensary in the Borough of the Bronx.—The Department of Health was to open a special dispensary for the care of consumptives in the borough of the Bronx, on February 4, 1907. The dispensary is situated in the Bronx Health Department building, at Third Avenue and St. Paul's Place and will be open every Monday, Wednesday, and Friday, from 2 to 4 p. m. It will later be opened on the afternoons of Tuesday, Thursday and Saturday, at the same hours, and, possibly in the near future, on two or three evenings in the week, for the benefit of those who may be unable to attend during working hours. The first municipal dispensary of this kind in this country was established by the Department of Health in March, 1904, in a specially constructed building adjoining the main building of the department at Fifty-fifth Street and Sixth Avenue, Borough of Manhattan. It was so successful and filled such a long felt want that a similar dispensary was opened during 1906 in the borough of Brooklyn. Such special dispensaries have a most important share in the determined and organized efforts now being made throughout the world to control the ravages of consumption. They are now regarded by all authorities as an essential feature of the modern antituberculosis campaign. Only those patients who have, or are suspected of having, consumption, are received. The attending physicians are men especially skilled in the diagnosis and management of the disease and there are also special facilities for taking care of patients in their homes, and for the providing of charitable assistance and hospital care for those requiring it. Early cases are sent to sanatoria in the country, where their chance

The New York Academy of Medicine.—The following programme was arranged for a meeting of the academy, held on Thursday evening, February 7th: Regulations Incorporating State Law to Regulate the Practice of Midwifery; Symposium on Influenza: The Bacteriology of Influenza, by Dr. Martha Wollstein; discussion by Dr. W. H. Park; Influenza in General Practice, by Dr. W. H. Katzenbach; discussion by Dr. Morris Manges; Influenza in Its Relation to Diseases of the Nervous System, by Dr. Joseph Collins; discussion by Dr. M. Allen Starr and Dr. B. Sachs; Influenza in Children, by Dr. Henry Dwight Chapin; discussion by Dr. L. Emmett Holt; Some of the Lesions of the

Middle Ear Due to Influenza, by Dr. Gorham Bacon; discussion by Dr. E. Gruening.

The following programme has been arranged for a meeting of the *Section in Neurology and Psychiatry*, to be held on Monday evening, February 11th: Presentation of Patients; Paper: The Border Lines of Neurology, by Dr. William B. Pritchard; Presentation of Cases: The Brain of a Case of Acromegalia Showing Tumor of the Hypophysis, by Dr. M. G. Schlapp.

The *Section in Public Health* will hold a meeting on Tuesday evening, February 12th, with the following order: Disinfection: As Practiced by the Department of Health, by Dr. R. J. Wilson, in charge of disinfection, Department of Health, New York city; From the Point of View of the Hygienist, by Dr. A. C. Abbott, Chief of Bureau, Department of Health, Philadelphia, Pa.; From the Point of View of the Practicing Physician, by Dr. L. E. LaFetra; discussion by Dr. W. H. Park, Dr. W. P. Northrup, Dr. S. A. Knopf, Dr. D. Bovaird, Jr.

The *Section in Pediatrics* will hold a meeting on Thursday evening, February 14th, with the following programme: Presentation of Patients: A Case of Complete Alopecia Areata, by Dr. Henry W. Hale, Jr.; Report of Cases; Papers: Pigmented Spots in the Sacral Region of White and Negro Infants, by Dr. Charles Herrman; The Surgical Treatment of Empyema, by Dr. Samuel Lloyd; general discussion.

Society Meetings for the Coming Week:

MONDAY, February 11th.—New York Academy of Medicine (Section in Neurology and Psychiatry; Society of Medical Jurisprudence, New York; Corning, N. Y., Medical Association; Waterbury, Conn., Medical Association.

TUESDAY, February 12th.—New York Academy of Medicine (Section in Public Health); Buffalo Academy of Medicine (Section in Medicine); Medical Society of the County of Rensselaer, N. Y.; Practitioners' Club of Jersey City, N. J.; Medical Society of the County of Schenectady, N. Y.

WEDNESDAY, February 13th.—New York Pathological Society; New York Surgical Society; Medical Society of the Borough of the Bronx, New York; Alumni Association of the City (Charity) Hospital, New York; Brooklyn Medical and Pharmaceutical Association; Richmond, N. Y., County Medical Society.

THURSDAY, February 14th.—New York Academy of Medicine (Sections in Pediatrics and Otolaryngology); Brooklyn Pathological Society; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers, N. Y.

FRIDAY, February 15th.—New York Academy of Medicine (Section in Orthopaedic Surgery); East Side Physicians' Association of the City of New York; Clinical Society of the New York Postgraduate Medical School and Hospital; New York Microscopical Society; Brooklyn Medical Society.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending February 2, 1907:

	February 2.		January 26.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	35	9	35	9
Smallpox.....	1	1	2	..
Varicella.....	122	..	163	..
Measles.....	138	5	181	6
Scarlet fever.....	325	15	268	7
Whooping cough.....	75	13	54	5
Diphtheria.....	315	46	273	34
Tuberculosis, pulmonary.....	354	266	420	197
Cerebro-spinal meningitis.....	20	17	14	14
Totals.....	1,385	312	1,410	272

PHILADELPHIA AND THE MIDDLE STATES.

New Hospital for Pittsburgh.—It is proposed by a number of citizens of Pittsburgh, Pa., to erect a new hospital in Centre Avenue, to be known as the Montefiore Hospital.

Scientific Society Meetings in Philadelphia for the Week Ending February 16, 1907.—Monday, February 11th, Section in General Medicine, College of Physicians; Wills Hospital Ophthalmic Society. Tuesday, February 12th, Philadelphia Paediatric Society; Botanical Section, Academy of Natural Sciences. Wednesday, February 13th, Philadelphia

County Medical Society. *Thursday, February 14th*, Pathological Society; Section Meeting, Franklin Institute. *Friday, February 15th*, University of Pennsylvania Medical Society; American Philosophical Society.

Requirements for Matriculation in the University of Pennsylvania. At the monthly meeting of the board of trustees of the University of Pennsylvania, held on Saturday afternoon, January 19th, the plan, recommended by the medical council of the State of Pennsylvania, to increase the educational requirements for admission to the medical department was adopted. Beginning in 1908, the conditions of matriculation in the medical department of the University of Pennsylvania will be gradually raised, until in 1910 a candidate for matriculation will be required to present two years of college training and a certain amount of knowledge of biology, chemistry, and physics.

Philadelphia Pathological Society and the Section in General Medicine of the College of Physicians of Philadelphia. At a joint meeting of these societies Dr. Percy Dawson, of Baltimore, read a paper on The Normal Physiology of Blood Pressure. Dr. George W. Norris read a paper on The Pathological Physiology of Blood Pressure. Dr. W. B. Stanton read a paper on Blood Pressure in Tuberculosis. Dr. Hobart A. Hare read a paper on The Clinical Significance of Variation in Blood Pressure. The discussion, which was opened by Dr. A. P. Brubaker, was continued by Dr. Charles H. Frazier, Dr. Alfred Stengel and Dr. R. Tait McKenzie. There was an exhibition of blood pressure apparatus.

Pathological Society of Philadelphia.—At the annual meeting of this society the following officers were elected for 1907: President, Dr. William M. L. Coplin; vice-presidents, Dr. Joseph McFarland, Dr. Allen J. Smith, Dr. M. P. Ravenel, Dr. M. H. Fussell; secretary, Dr. Elbert P. Francine; treasurer, Dr. C. Y. White; recorder, Dr. David L. Edsall; curator, Dr. Frank A. Craig; committee on membership, Dr. W. T. Cummins, Dr. A. G. Ellis, Dr. W. E. Robertson; committee on publication, Dr. David Riesman, Dr. A. O. J. Kelly, and Dr. Joseph McFarland; committee on morbid growths, Dr. R. L. Rosenberger, Dr. G. P. Müller, Dr. A. A. Eshner, and Dr. J. Dutton Steele; business committee, Dr. David Riesman, Dr. David L. Edsall, Dr. W. T. Longcope, Dr. Joseph McFarland, and Dr. J. Dutton Steele.

The Health of Philadelphia.—During the week ending January 26, 1907, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Epidemic fever.....	374	44
Scarlet fever.....	34	2
Diphtheria.....	85	15
Cerebrospinal meningitis.....	3	0
Measles.....	43	1
Whooping cough.....	24	1
Tuberculosis of the lungs.....	148	74
Pharyngitis.....	196	92
Erysipelas.....	11	1
Pneumonia.....	3	4
Septicæmia.....	3	1
Mumps.....	2	0
Cancer.....	38	24

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 15; diarrhea and enteritis, under two years of age, 20; dysentery, 1. The total deaths numbered 583, in an estimated population of 1,500,595, corresponding to an annual death rate of 19.34 in a thousand population. The total infant mortality was 119; under one year of age, 101; between one and two years of age, 18. There were 37 still births, 20 males and 17 females. The temperatures were low, 6 degrees being recorded on the 24th, the maximum for the week being 58 degrees, on the 20th. The total precipitation was 0.18 inch, mostly snow.

BOSTON AND NEW ENGLAND

The Lawrence (Mass.) Medical Club held a meeting, as guests of Dr. H. W. Manahan, on January 28th. Dr. R. W. Foster read a paper entitled: Some Remarks on the Treatment of Pneumonia with Massive Doses of Potassium Iodide.

The Hartford (Conn.) Medical Society.—At a meeting of this society held on Monday evening, February 4th, Dr. Richard C. Cabot, of Boston, the guest of the society, gave an address on: Essentials and Nonessentials of Diagnosis in Internal Medicine.

Grace Hospital, New Haven, Conn.—At a meeting of the medical and surgical staff of this hospital, held on Tuesday, January 28th, the following named were appointed attending physicians and surgeons for the ensuing year: Attending surgeons, Dr. W. P. Baldwin and Dr. W. P. Lang; attending physicians, Dr. E. C. U. Hall, Dr. W. C. Skiff, Dr. Charles Vishno, Dr. B. S. Adams, and Dr. P. C. Skiff; obstetrician, Dr. E. J. Walker; eye, ear, nose, and pharynx, Dr. R. J. Ferguson.

CHICAGO AND THE WEST.

The Fox River Valley (Ill.) Medical Association.—A special scientific meeting of this association was called for Wednesday, January 30th, at Geneva, Ill. The programme included a paper on Functional Neuroses, by Dr. Podstata, of the Elgin hospital for the insane, and a paper on surgery by Dr. H. D. Roehler, of Chicago.

The Cincinnati Academy of Medicine will celebrate the semicentennial anniversary of its existence on March 18th. Dr. Byron Stanton, a charter member, will deliver an address as will also Dr. Alexander G. Drury and Dr. N. P. Davidridge. The academy is the largest and most influential medical society in Cincinnati. About thirty years ago there was dissention and the Cincinnati Medical Society was formed. The differences, however, were happily adjusted about fifteen years ago and the two societies were brought together.

Statement of Mortality in Chicago for the Week Ending January 26, 1907, compared with the preceding week and with the corresponding week of 1906. Death rates computed on United States Census Bureau's figures for midyear populations—2,107,620 for 1907, 2,049,185 for 1906:

	Jan. 26, 1907.	Jan. 19, 1907.	Jan. 27, 1906.
Total deaths, all causes.....	795	695	504
Annual death rate in 1,000.....	18.18	15.78	12.82
Sexes.....			
Males.....	397	370	286
Females.....	398	325	218
Ages.....			
Under 1 year of age.....	137	128	103
Between 1 and 5 years of age.....	85	61	39
Between 5 and 20 years of age.....	66	48	35
Between 20 and 60 years of age.....	233	219	222
Over 60 years of age.....	164	152	105
Important causes of death.....			
Apoplexy.....	8	10	15
Bright's disease.....	46	40	39
Bronchitis.....	26	15	9
Consumption.....	67	69	61
Cancer.....	27	20	22
Convulsions.....	12	15	14
Diphtheria.....	16	17	15
Heart diseases.....	63	43	31
Influenza.....	8	12	3
Intestinal diseases, acute.....	31	25	29
Measles.....	13	4	2
Nervous diseases.....	31	25	20
Pneumonia.....	138	131	86
Scarlet fever.....	22	18	4
Scurvy.....	8	4	6
Typhoid fever.....	9	5	7
Violence other than suicide.....	46	35	19
Whooping cough.....	12	6	0
All other diseases.....	152	144	112

GENERAL

The Death of Sir Michael Foster, of London, occurred suddenly on January 29th. He was born in 1833 and was professor of physiology at Cambridge University from 1883 to 1903. In 1889 he was president of the British Association for the Advancement of Science.

The Sixth Congress of German Orthopædic Surgeons will be held at Berlin on April 2, 1907. Notice concerning essays to be read should be sent, not later than March 1st, to Professor Dr. Joachimsthal, 36 Madgeburger strasse, Berlin W.

The University Medical School in Canton, China.—On the afternoon of Monday, January 14th, the formal organization of the University Medical School in Canton, China, was completed. The board of trustees is composed of Mr. George Wharton Pepper, president; Mr. Edward C. Wood, treasurer; Dr. William M. Schultz, secretary; Mr. Samuel F. Houston, Dr. Charles H. Frazier, Dr. Rufus B. Scarlett, Mr. William A. MacKinney, all of Philadelphia; Dr. Howard A. Kelly, of Baltimore; and Mr. William Guggenheim, of New York. The work in the field will be conducted by Dr. Andrew H. Woods, of the class of 1899 of the Medical Department of the University of Pennsylvania, and Dr. Josiah C. McCracken, of the class of 1901.

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

February 2, 1907.

1. Gonorrhœal Arthritis, By JOHN A. WITHERSPOON.
2. Review of the Bacteriology of Acute Articular Rheumatism, By LEWIS A. CONNER.
3. Differential Diagnosis of Rheumatoid Joint Affections, By JAMES B. HERRICK.
4. Joint Affections in Nervous Diseases, By LEWELLYS F. BARKER.
5. The Treatment of Nontuberculous Chronic Arthritis, By EDWIN A. LOCKE and ROBERT B. OSGOOD.
6. Physiological Effects of Alcohol on the Human System, By WINFIELD S. HALL.
7. Alcohol and Disabilities of School Children, By T. ALEXANDER MACNICHOLL.
8. Alcohol as a Factor in the Causation of Pulmonary Consumption, By THOMAS J. MAYS.
9. Alcohol in Its Relation to Degeneracy, By EUGENE S. TALBOT.
10. Intramural Abscess of the Puerperal Uterus, By GEORGE H. NOBLE.
11. Disinfectants and Disinfection, By HENRY ALBERT.
12. Röntgen Rays in the Treatment of Lupus Vulgaris, By H. W. VAN ALLEN.
13. Further Remarks on the Digestive Bead Test for Ascertaining the Functions of the Digestive Apparatus, By MAX EINHORN.

1. Gonorrhœal Arthritis.—Witherspoon says of the treatment of gonorrhœal arthritis that it is as varied as it is unsatisfactory. In the acute types rest in bed, fixation of joint by splints to relieve pain which may be so severe as to demand an opiate. In England they insist on large doses of quinine. Local applications, hot or cold, are often grateful, one of the best local applications being a 50 per cent. ichthyol ointment early in the case. Internal administration of drugs rarely influences the trouble, and is not advisable, except to meet symptomatic conditions. The salicylates are harmful, and add to the patient's discomfort by disturbing the stomach, and yet they are almost universally given. In chronic cases general reconstructives and potassium iodide are useful. In both the cure of the initial lesion is to be recommended as rapidly as possible. Great benefit is often derived from surgical interference. In some, strapping the joint with adhesive plaster, being careful not to surround the whole joint, will give relief. In others, aspiration must be advised, and in suppurative cases incision and drainage is the only treatment. Some very remarkable cures have been reported by Dr. Fuller, of New York, who insists that the infection comes from a gonorrhœal vesiculitis, and by opening and draining them immediate amelioration of the arthritis takes place.

2. Review of the Bacteriology of Acute Articular Rheumatism.—Conner thinks that we are justified in believing that acute rheumatism is a specific, infectious disease, and is not merely an attenuated pyæmia resulting from the common pyogenic organisms. The bacillus of Achalmé has no ætiological relation to acute rheumatism. While there is considerable evidence in favor of the view that the disease is caused by a specific diplococcus or streptococcus, positive proofs of the specificity and identity of this organism and of its causal relation to rheumatism are still lacking.

4. Joint Affections in Nervous Disease.—Barker divides the most important joint affections in nervous disease into the following groups: (1) The intermittent joint effusions; (2) the arthropathies of tabes and dementia paralytica; (3) the syringomyelic arthropathies; (4) the painful joints of the psychoneurotics. The treatment of the intermittent joint effusions consists of rest, encouragement, and the application of a flannel bandage. Aspiration of the joint or injections are wholly unnecessary. The attacks will often cease

if proper general hygienic measures are followed. Most individuals suffering from the disease require antineurotic measures—psychotherapy, hydrotherapy, occupation therapy, and the like. Arsenic in small doses, long continued, appears to have been beneficial in some cases. Now and then a case will resist all attempts at cure; the disease has been known to persist through a large part of a lifetime. The treatment of the psychoneurotic arthralgias should be mainly directed toward the general psychoneurosis which underlies the symptom. Nothing is more harmful than a predominantly local therapy. Isolation and psychotherapy are the sovereign remedies in these cases. After a few days of complete separation from the family and friends, and when medical obedience has been fairly well established, the patient's intellect and will are to be appealed to by persuasion. Passive movements of the joints are to be begun and gradually increased; hydrotherapy and electrotherapy may be used as adjuvants. After a few days the patient may be induced voluntarily to move the joints a little, and very soon normal motility may be regained. The patient, through occupation therapy and will gymnastics, should be taught gradually to improve in self control.

5. The Treatment of Nontuberculous Chronic Arthritis.—Locke and Osgood state that we can no longer consider this group of diseases as hopelessly incurable. The success of modern therapy offers the greatest encouragement. Briefly stated, the régime of treatment applicable to all types is improvement of the general health. In cases of simple villous arthritis, after a fair trial of conservative methods, radical operation is advised. In the infectious cases early motion and as little fixation as possible is indicated. In the atrophic, a judicious combination of fixation and motion affords the greatest relief, and in the hypertrophic, partial, or complete fixation with as little motion as possible most favorably arrests the process. The final results will depend largely on two factors: First, the stage of the disease at which a diagnosis is made, and, second, the skill and persistence with which a régime of treatment is carried out. If treatment is delayed until marked pathological alterations have taken place in the joint tissues and the general health has become much impaired the prognosis is of necessity much less hopeful. In the early stages, we may hope by patient, persistent, careful application of the described methods to arrest the process in a majority of cases and to effect a complete cure in a considerable number. In the more advanced forms we can usually relieve, sometimes arrest, but practically never bring about a complete cure.

7. Alcohol and the Disabilities of School Children.—MacNicholl concludes his article as follows: First, when money goes for drink, poverty with its attendant evils prevails, and the burdens of childhood are increased. Second, alcoholic environment is unfavorable to the production of the best school work. Third, alcohol, by producing a train of psychic and organic degenerations in the offspring, debases the morals and lowers the sum total of human happiness. Fourth, alcohol, by laying the foundations of a diseased and criminal citizenship, threatens the stability of our government. Fifth, to reduce the burdens and dangers of childhood and to improve the manufacture of future citizens, we must continue, in the largest measure, scientific instruction in the effects of alcohol and in the essentials of health; increase the number of our public gardens, playgrounds, and improved tenements. But these should be supplemented by measures which will not only lessen the effects of alcohol and the other deteriorating agencies, but also purify or remove the sources from which degeneracy springs.

8. Alcohol as a Factor in the Causation of Pulmonary Consumption.—Mays thinks that it may be taken for granted that alcoholism and consumption are

allied to each other as cause and effect, and that the latter is frequently the indirect product of the pernicious influence of alcohol on the nervous system. That alcohol destroys the integrity of the nervous system is certain. Alcoholic neuritis in its early stages is characterized by numbness, tingling, hyperæsthesia at first, and later anæsthesia of the extremities, paralysis of motion, loss of knee jerk, quickened pulse, shortness of breath, and pulmonary embarrassment. The brain and spinal cord remain comparatively normal, while the principal changes occur in the peripheral nerves. If we compare the three last groups with each other it will be found that consumption predominates in round numbers from 200 to 400 per cent. in the second group, and from 300 to 1,000 per cent. in the third group, over that of the first group, which represents the normal prevalence of consumption; while nervous diseases and psychoses prevail from 300 to 600 per cent. in group two, and from 300 to 1,500 per cent. in group three over those in group one. It being established, then, that alcohol destroys the integrity of the nerve fibres, it does not require a reckless flight of fancy to perceive how, by operating on the same tissues, it may bring about that peculiar destruction of lung substance, known as pulmonary consumption. Degeneration of a nerve implies degeneration of the organ which it supplies. Thus degeneration of the sciatic nerve is followed by impaired sensation and motion in the muscles and other tissues of the leg and a condition which is almost constantly present in chronic alcoholism, and degeneration of the pneumogastric nerves, which is frequently present in alcoholic neuritis, is just as naturally followed by disease of the lungs, heart, stomach, and of all other organs supplied by them.

11. Disinfectants and Disinfections.—Albert states that there are three agencies which we should always keep in mind in general disinfection: (1) A gaseous disinfectant; (2) heat; (3) a liquid disinfecting solution. There are three methods of gaseous disinfection: (1) By the use of formaldehyde gas; (2) by sulphur fumes; (3) by hydrocyanic acid gas. For the various contagious diseases the first of these methods is by far the best. Sulphur and hydrocyanic acid are better than formaldehyde only when we have to deal with animal life, such as cockroaches, bedbugs, fleas, mosquitoes, etc. Except for special purposes, there is no need of using anything aside from carbolic acid or some of the coal tar proprietary preparations, mercuric bichloride or biniodide as liquid disinfectants. Carbolic acid may be said to be the king of disinfecting agents. It is stable, it is certain, it has penetrating properties. For washing it should be used in a 5 per cent. solution. The various proprietary coal tar compounds are, as a rule, also very good disinfectants and have an advantage over carbolic acid in that they are cheaper, and, second, they do not have such irritating and caustic properties. Their use can be recommended. Bichloride of mercury is a most efficient disinfectant when properly used. It should be used in a 1 to 1,000 solution—if much organic matter is present, in double that strength.

MEDICAL RECORD.

February 2, 1907.

1. The Interlude of Cancer, By JOHN BEARD.
2. The Theory of the Toxic Origin of Pernicious Anæmia, By AUSTIN W. HOLLIS and NORMAN E. DITMAN.
3. The Electric Psychometer, By FREDERICK PETERSON.
4. A Few Remarks on Medical Expert Testimony, By GEORGE FRANKLIN SHIELDS.
5. Varicose Veins of the Lower Extremities and Their Treatment, By P. T. O'CONNOR.

1. The Interlude of Cancer.—Beard gives a review of his researches referring to cancer, and says that, owing to the circumstance that the cycle of life is

really a continuous procession and succession of unicellular organisms, germ cells, from which there arise asexual generation or trophoblast, and embryo or sexual generation, the tumors can be classified into three groups, as follows: 1. *Embryomata*. Benign neoplasms. Pathological manifestations of some greater or less portion of the sexual generation, "the embryo." They are composed of real tissues, that is, normal or somatic (embryonic), cells or tissues. At its basis each is a greater or less portion of a twin, triplet, etc., identical with the individual containing it. They are endowed with indefinite powers of growth, and they nourish themselves like other normal tissues. 2. *Amphimixiomata*. Malignant neoplasms. Combinations of embryomata and trophoblastomata. Pathological manifestations or attempts to reproduce the whole life cycle, including trophoblast and embryo. They are transitional forms. (The mixed tumors of Wilms are not all malignant, some being merely embryomata.) 3. *Trophoblastomata* (cancer and sarcoma). Malignant neoplasms. Pathological manifestations of the asexual portion (trophoblast) of the life cycle. They are not known to differentiate functional gametes, eggs, or sperms. They never include or repeat any part of an embryo. They are never composed of somatic (embryonic) cells, though they may mimic such or even resemble no other cells in the body. As Fleischmann, Paget, and Bland Sutton pointed out, they are "imitation tissues." They exhibit powers of unlimited growth and increase, and they nourish themselves by eroding and destroying normal cells and tissues in a manner exactly like that of the trophoblast of normal gestation, and by means of a ferment acting intracellularly, viz., malignant. The proper scientific treatment of cancer is the enzyme or pancreatic one. If trypsin alone be used, bad symptoms very soon arise, all of which recall the vomiting of pregnancy and eclampsia. Trypsin alone is a very deadly remedy for cancer. The reason being that in killing the cancer albumin this enzyme does not split it up to harmless simple products. What the products of the action of trypsin alone are it is impossible to say, for they may quite conceivably vary with the amount of the injection and with its strength. Anyway, some of them are rank poisons to the organism, and they lead to nausea, vomiting, pain in the back, drowsiness, high arterial tension, albuminuria, œdema, etc., and even to convulsions lasting several hours. The cause of such symptoms and of the eclampsia of pregnancy did not long puzzle the embryologist, who perceived that it was the absence of the complementary ferment, amylopsin, which induced them. Nature had committed a grave error in omitting amylopsin from foetal blood, and in relying solely on trypsin. The preparations employed in the enzyme treatment of cancer should be potent extracts, scientifically prepared from the fresh gland direct. The trypsin injections must contain all the enzymes and be especially rich in trypsin and amylopsin. The injection of amylopsin is to be used at all times to meet and remove all bad symptoms, and in the later periods of treatment, when all the cancer albumin has been destroyed, and it must be an extract of the pancreas gland free from trypsin. This treatment is not intended for use against benign tumors, which are composed of real or somatic tissues and which are not killed or broken up by trypsin. Owing to this the injections furnish a chemical test of the true nature of a tumor, whether it be benign or malignant.

2. The Theory of the Toxic Origin of Pernicious Anæmia.—Hollis and Ditman review the researches made by leading men in the toxic origin of pernicious anæmia, and report two cases. They conclude that the practical difference between the old and more recent results is no more striking than that between some of the older and newer theoretical conceptions upon which

the therapy is based. This is very well illustrated by the fact that while in former times it was taught by some of the most prominent men of the time that the more food the patient could take the better, in the view of modern developments as emphasized by Herter, smaller amounts are better, especially of proteid food. For any excess of proteid food reaching the part of the intestinal canal occupied by the proteid splitting anaerobic bacteria of the lower bowel, simply furnishes material for subsequent decomposition into toxic and hæmolytic substances as the result of bacterial activity. The great value in the discovery that such a condition as pernicious anæmia can be so benefited by removing intestinal bacterial matter lies in the fact that it emphasizes the possibility of attacking other obscure diseases on the same ground. The agency of bacteria in disease seems to be well appreciated when they occur in contact with the surface of the body, in the oral or genitourinary or respiratory cavities. Even the deleterious effect of the absorption of the products of the activity of nonpathogenic or saprophytic bacteria is appreciated when occurring within the uterus, to produce a sapræmia. Yet few seem to appreciate what a great amount of absorption must occur where the area of absorption is as great as that of the intestinal mucosa, or what a diversity of chemical products, many the result of bacterial activity, present themselves for absorption.

4. A Few Remarks on Medical Expert Testimony.

—Shiels observes that there probably is no subject in the medical curriculum which is so much neglected as medical jurisprudence. The author, therefore, speaks of this subject under four headings: (A) Compensation of the medical expert; (B) points referring to the attitude and rights of the doctor while on the witness stand; (C) especial points in trials involving the question of insanity; (D) the value of medical expert testimony as now introduced. The third point is treated under eleven headings, among them the following: Let the witness at all times remember that he is, by virtue of his diploma, an expert opinion witness, that he is in court to express his own opinions irrespective of any author or authority to the contrary. The tendency on the part of attorneys is to borrow or buy numerous supposedly authoritative works, and to study them diligently over night. They come into court full of what they conceive to be medical knowledge, but, as a rule, knowing less than before they burned the midnight oil in cramming up for the trial. Knowing this, a doctor need not fear their attacks, and by maintaining a cool and quiet demeanor he will in the large majority of cases come out right in the end. Let the witness always remember that should he feel that an attorney has gone too far, and has become insulting, he may turn to the judge and request his protection against such insult. In the experience of the writer this has never failed to have an immediate effect. Let the witness go on the stand with the absolute promise to himself that he will not lose his temper, for the lawyer takes great delight in trying it sorely.

5. **Varicose Veins of the Lower Extremities and Their Treatment.**—O'Connor remarks that the surgeon has his choice of a number of operations in varicose veins of the lower extremities. In a certain number of cases, with involvement of the main trunk of the vena saphena magna, the greatest dilatation is always situated just above the valves. The latter are often destroyed or rendered incompetent and cause the vessel to support a column of blood extending from the lowest dilatation to the heart. In such cases, high ligation or the operation of Remi and Trendelenburg may be resorted to. Ligaturing the vessel relieves it of the pressure of the column of blood below the point of tying, and permits the restoration of vascular tone. In doing this operation, G. Perthes recommends

excision of a short portion of the vein between two ligatures, thereby preventing reestablishment of the patency of the vessel, for Minkewitsch has shown that no restoration of a vessel can occur after a portion of it has been excised. Most modern surgeons, by reason of the ætiology and pathology of varix, do not consider Shede's operation a proper procedure, as the damage it does to the nerves and the uncertainty of cure make it of doubtful propriety in any case. In certain selected cases he must have recourse to Phelps's operation, partial excision, or to the still more radical method of complete excision.

BRITISH MEDICAL JOURNAL.

January 10, 1907.

1. Fractures of the Base of the Skull, By A. BOWLBY.
2. Intraperitoneal Implantation of the Ureters Into the Colon, By G. BARLING.
3. Transplantation of the Ureter Into the Bladder for Ureterovaginal Fistula, By E. P. PATON.
4. Traumatic Rectovesical Fistula, By H. T. MURSELL.
5. The Immediate Microscopical Diagnosis of Tumors During the Course of Operation, By C. B. LOCKWOOD and E. H. SHAW.
6. The Ætiology and Prophylaxis of Dracontiasis, By R. T. LEIPER.
7. Atoxyl in the Treatment of Trypanosomiasis, By A. BREIUL and J. L. TODD.
8. The Treatment of Paralytic Talipes Valgus by Tendon Transplantation, By B. KILLINGTON.
9. Papam in Malignant Growths, By C. W. BRANCH.
10. Hydatid Cyst of the Neck, with Cellulitis Caused by Rupture and Escape of Hydatid Fluid, By E. C. BEVERS.

1. **Fractures of the Base of the Skull.**—Bowlby states that in fractures of the base of the skull, the diagnosis depends upon three things: The escape of blood, the escape of cerebrospinal fluid, and injuries to nerves. It is to these three conditions that evidence as to the injury is looked for. When the middle fossa is broken it is ordinarily fractured across the petrous portions of the temporal bone and whether there are complications or not depends upon the line of the fracture. If it does not involve any part of the canal to the seventh pair of nerves, then there is ordinarily no escape of cerebrospinal fluid and no evidence of nerve injury, the only evidence of the break being an escape of blood through the external auditory meatus. Even the last sign may be absent if the membrana tympani is not torn. So that it is very difficult to say positively that a person has *not* a fracture of the base of the skull. Cerebrospinal fluid can only escape when the dura mater or arachnoid are torn. They are practically always torn where they are reflected around the seventh pair of nerves as they pass into the internal auditory meatus, a communication being thus opened up between the subarachnoid space on one side and the external auditory meatus on the other. All discharges of fluid from the ear are not indicative of fracture of the base, as the fluid may come from the ear itself or from the semicircular canals. The characteristic of cerebrospinal fluid is that the discharge comes on very soon after the accident and either accompanies the flow of blood caused by the accident, or immediately follows the cessation of that flow. The discharge is copious, the fluid being not mucous, but quite clear, of low specific gravity, and containing traces of sugar and chloride of sodium. The nerves which may be injured in fractures of the middle fossa are the facial and the auditory, the former rarely, the latter frequently, being softer and more easily torn. Injuries of the facial nerve are recovered from rapidly; of the auditory nerve very slowly. The anterior fossa may be broken in various ways—by direct violence or by the thrusting of some pointed instrument into the orbit. Ordinarily it is broken by falls upon the forehead or top of the head. The same three symptoms are to be looked for. Blood ordinarily escapes in large quan-

tures from the nose, and from the back of the nose into the pharynx and stomach whence it may later be vomited. But it is only when the hæmorrhage is very copious and continuous, that it can be distinguished from that due to fracture of the nose from a blow. It is rare that clear cerebrospinal fluid is discharged from the nose, as it usually mixes with the nasal discharges and passes back through the pharynx. Any one of the first six nerves may be improved, resulting in blindness, squint, etc. But as a rule the injury is not so serious as to prevent quick recovery. The posterior fossa of the base of the skull is much less frequently injured than the others, and is broken only by very great violence. The diagnosis is usually only made post mortem, there being no apertures for the discharge of blood or cerebrospinal fluid, and injuries to nerves being very rare. In all these cases death is in proportion to the occurrence of complications—hæmorrhage, sepsis, etc. Mere fracture of the bone does not kill.

2 and 3. Transplantation of Ureters.—Barling reports a case of extroversion of the bladder, in which he performed intraperitoneal implantation of the ureters into the colon, dividing the proceeding into two separate operations in the hope of avoiding simultaneous infection of both ureters. The patient improved greatly, and has remained so, but his future is of course one of great uncertainty, owing to the ever present risk of an ascending nephritis by infection from the bowel, and because of the possibility that either or both ureteral orifices may become partly or completely closed by scar tissue. Another operation to accomplish the same purpose is implantation of the separated trigonal area of the bladder with both ureteral orifices into either rectum or sigmoid. Diversion of urine into the bowel may be resorted to for other conditions than extroversion of the bladder. In cancer of the bladder encroaching on the trigonal region, excision of the growth may be feasible if provision can be made for the collection and storage of the urine after removal of the lower ends of the ureters in the resection. In accidental division of ureters in an abdominal operation when reimplantation into the bladder is impossible, grafting into the colon is worth consideration as an alternative to nephrectomy.—Paton reports a case of ureterovaginal fistula, resulting from injury to the ureter during operation, in which the ureter was reimplanted into the bladder, with most excellent results.

5. The Immediate Microscopical Diagnosis of Tumors.—Lockwood and Shaw call attention to the great value of early microscopical diagnosis of tumors, made while the patient is anesthetized and ready for the operation. The procedure is also helpful in determining just how far an operation should go—whether enough of the surrounding tissue has been removed, etc. The procedure adopted is as follows: (a) The selected piece of tissue received from the surgeon is placed directly on the brass disk of an ether freezing microtome, and is surrounded by gum solution; (b) the tissue and gum are frozen, and sections made by a razor on a carrier; (c) the sections are transferred to a dish of cold water, and, after separating them with a glass rod, a suitable section is lifted out; (d) it is dipped for a moment into pure methylated spirit, and (e) then placed in another larger dish of cold water; the currents set up by the spirit in the water cause the section to spread out flat; (f) a glass slide is dipped into the water under the section, and the latter is lifted out as the slide is slowly drawn out of the water again; (g) the water is drained off the slide and a drop or two of stain (Löffler's methylene blue) is allowed to fall directly on to the section; (h) a thin cover glass is placed on the stain and section after three to five seconds; it is lightly pressed down so as to drive out excess of stain; this is then blotted off, and the

specimen is ready for examination under the microscope.

LANCET

January 10, 1907.

1. The Diagnosis of Tumors of the Spinal Cord. By F. E. BATTEN.
2. Septicæmia: Therapeutics. By A. J. D. BARNES.
3. On Epistaxis and Its Treatment by Regional Anæsthesia. By J. L. BUNCH.
4. A Case of Hæmorrhagic Cyst of the Spleen. By W. L. HARNETT.
5. The Relative Sizes of the Maternal Pelvis and of the Fetus in Europeans, Eurasians, East Indians, and Bengalis. By J. C. H. LEICESTER.
6. A Fatal Case of Myxœdema with Changes in the Parathyroid Glands. By D. FORSYTH.
7. Pyloric Stenosis and the Condition of the Pylorus During Life. By C. W. M. MOULLIN.
8. A Case of Abnormal Development of the Œsophagus. By J. E. SPICER.
9. Some Observations on Fat Necrosis. By J. E. H. SAWYER.
10. Notes on a Case of Disseminated Sclerosis. By Z. MESSILL.
11. Diphtheritic Membrane Involving the Pharynx, Œsophagus, and Respiratory Passages. By F. E. FIELD.
12. Some Limitations of Medical Evidence. By S. B. ATKINSON.
13. William Addison, M. D.: The World's First Hæmatologist. By H. A. MCCALLUM.
14. Notes Upon Health Resorts: A Layman's View of the Riviera. By J. S. LITTLE.

1. Tumors of the Spinal Cord.—Batten states that the diagnosis of tumors situated within the spinal cord is not difficult in the later stages of the disease when all the characteristic symptoms—pain, gradual loss of power, and impairment of sensation are present. But it is otherwise in the earliest stage of the disease; pain is or may be the only symptom. Such cases are regarded as sciatica, lumbago, neuritis, hysteria, etc., when in the early stages; later they are often thought to be due to myelitis or peripheral neuritis. The relative degrees in which the three cardinal symptoms are present depend partly on the situation of the growth, and partly on its nature. Tumors outside and within the theca commonly give rise to much pain; those within the spinal cord, to but little pain. But there are numerous exceptions. The tumors may be single or multiple, benign or malignant, slow growing or rapid; they may grow in the cervical, dorsal, lumbar, or sacral regions; or so low as to affect only the coccygeal region. Little importance can be attached to pain in the back; but when it begins gradually, is accentuated on movements, on bending down, or on bending the head forward, and radiates down the arms or legs it should receive careful attention. There may be actual tenderness on pressure—so marked as to suggest caries. Pain is usually the earliest symptom; "girdle" pain may indicate the site of the lesion, as also may localized tenderness. Loss of power in the legs, confined to certain groups of muscles, and of gradual onset, is highly suggestive of pressure due to tumor. Loss of sensation furnishes the best localizing sign of the lesion; the localizing value of anæsthesia and analgesia in the distribution of a root area is of great importance. The condition of the reflexes and sphincters varies according to the situation of the tumor. Early diagnosis is of great importance, as irreparable damage may be done to the cord by prolonged pressure. Spasticity is evidence of conduction through the cord at the seat of the lesion; supervention of flaccid paralysis indicates a physiologically complete transverse lesion, and unless rapidly relieved will result in a complete anatomical transverse lesion, the prognosis of which is hopeless. Where there is definite specific infection mercurial inunction should be pushed to salivation. In the majority of cases operation is indicated and should

be performed at the earliest moment compatible with accurate diagnosis. The seat of operation should be at the highest level indicated by any symptom.

3. **Opsonins.**—Bunch describes the recent work of Wright and others on the opsonins, and treatment of tuberculosis and other conditions by bacterial vaccines. While the exact nature of the opsonic bodies is not known, they undoubtedly act on bacteria in such a way as to enable them to be taken up by the phagocytes. An increase of the opsonic content of the blood serum can be brought about by the injection into the organism of vaccines. Of these, the best known is the "old" tuberculin of Koch. The inoculation of a vaccine is always followed by the following train of events: A period of intoxication supervenes upon the inoculation, which is characterized by a decline in the antibacterial power of the blood; this "negative phase" is accentuated and prolonged according to the size of the dose of vaccine. It may be so marked as to cause a temperature reaction and constitutional symptoms. Upon the "negative phase" there follows a "positive phase" characterized by an increase in the antibacterial power of the blood, and corresponding to a period of increased resistance. After the negative and positive phase the blood may be maintained for a variable period at a somewhat higher level of antibacterial power. If the right initial dose of vaccine is used, the negative-phase will not be too marked; will be less with succeeding inoculations; and will be followed by a well marked positive phase. If the dose is too large, the positive phase may be late or even entirely absent.

9. **Fat Necrosis.**—Sawyer's observations on fat necrosis are based on a series of eight autopsies—three cases of acute and two of subacute pancreatitis, and one each of gangrenous pancreatitis, hydrochloric acid poisoning, and mitral disease. Fat necrosis is generally considered to be the result of the action of the fat splitting ferment of the pancreas upon living adipose tissue, the fat in the cells being split up into fatty acids and glycerin. The glycerin is absorbed, and the fatty acids which remain combine with the calcium salts and form a soap. The fat necrotic areas just under the peritonæum appear as small round white spots, never raised above the surface. They are usually dull white in color, but may be stained yellow with bile. In the last two cases of the series the fat necrosis was not found associated with any primary disease of the pancreas. Although some destruction of the pancreatic tissue seems to be a necessary factor in the production of fat necrosis, yet in cases of extensive disease of the pancreas fat necrosis does not always occur.

LA PRESSE MEDICALE

January 2, 1907.

1. **Technics of Ionic Therapy.**
By P. DESFOSSES and A. MARTINET.
2. **The Rational Employment of Tarnier's Retractor.**
By CYRILLE JEANNIN.
3. **Academic Anæmia and the Chlorosis of Infants.**
By R. ROMME.

1. **Technics of Ionic Therapy.**—Desfosses and Martinet describe the apparatus employed and the technics of the introduction of the ions of certain substances by electricity through the skin for therapeutical purposes.

2. **The Rational Employment of Tarnier's Retractor.**—Jeannin gives as the indications for the use of Tarnier's retractor, or exciter, an instrument employed for the purpose of exciting uterine contractions: (1) Insufficiency or absence of uterine contractions; (2) overdistention of the cervix; (3) anatomical or spasmic rigidity of the cervix; (4) high presentation associated with premature rupture of the membranes; and (5) conditions which threaten the life of the mother. The contraindications are: (1) Fibrous tumors and cancerous degeneration of the cervix; (2)

vicious insertion of the placenta; (3) the albuminuria which accompanies symptoms which threaten eclampsia, as the artificial irritation of the cervix may bring on an attack of this trouble; (4) the imminent death of the fœtus. The use of this instrument is attended by certain inconveniences and dangers. Its application is painful, may cause premature rupture of the membranes, may introduce infection, may cause lacerations of the cervix or of other parts, and may injure the child.

January 10, 1907.

1. **Social Hygiene. The Law of 1905 Concerning the Obligatory Assistance to Septuagenarians and the Rational Alimentation of Elderly People.**
By L. LANDOUZY.
 2. **The Analysis of the Urine of Patients with Typhoid Fever Considered from the Point of View of the Possible Spread of the Disease.** By P. REMLINGER.
 3. **The Choice of a Hot Drink in Therapeutics of the Stomach.** By LEON MEUNIER.
 4. **Apropos of Cancer of the Tongue.** By R. ROMME.
2. **The Analysis of the Urine of Patients with Typhoid Fever.**—Remlinger calls attention to the danger of transmission of typhoid fever to healthy persons who have to deal with the urine of persons who are suffering from typhoid, and urges that precautions be adopted by physicians, chemists, or other persons who may be employed in the analysis of urine, to protect themselves against the danger of contracting the disease. He shows that this is not a fanciful danger.

3. **The Choice of a Hot Drink in Therapeutics of the Stomach.**—Meunier prefers a hot infusion of germinating barley, because in his opinion it best meets the indications in those stomachic troubles in which hot drinks are beneficial.

January 19, 1907.

1. **Endocarditis from Tetragenic Septicæmia.**
By Professor DEBOVE.
2. **Pseudoneurasthenia Prodromic of Early Dementia.**
By MILLE PASCAL.
3. **Disinfection of Saliva.** By J. P. LANGLOIS.

1. **Endocarditis from Tetragenic Septicæmia.**—Debove reports a case of endocarditis due to septicæmia in which the pathogenic agent was the micrococcus tetragenus septicus. The patient was a mulatto woman, a native of Ecuador, thirty-three years old. She had borne six children without serious accident. Toward the end of 1902 one of her children died. Patient was immediately seized with cardiac symptoms, which caused her to seek advice at the hospital in January, 1903. The trouble was there thought to be functional, a hypothesis which seemed to be confirmed by the improvement of the symptoms. Another child died last September, and this loss was followed by a recurrence of the cardiac symptoms which have not improved again, but have become worse until now the patient is in a critical condition. The symptoms and physical signs both indicate the presence of ulcerative endocarditis.

2. **Pseudoneurasthenia Prodromic of Early Dementia.**—Mille. Pascal deals quite fully with the ætiology, the clinical picture, and the evolution of dementia in young people preceded by a pseudoneurasthenia. A diagnostic point during the evolution of the trouble mentioned is that in true neurasthenia the patient may recruit both physically and morally, but in false neurasthenia preliminary to dementia the patient possesses no such power.

LA SEMAINE MEDICALE.

January 16, 1907.

1. **Pathogeny of the Congenital Jaundice of Adults.**
By M. A. CHAUFFARD.
 2. **New Method to Bring Into Evidence the Patellar Reflex.**
1. **Congenital Jaundice of Adults.**—Chauffard reports a case of this nature which he met with in a

man, twenty-four years of age, and discusses the literature on the subject with reference to the pathogeny of the condition.

BERLINER KLINISCHE WOCHENSCHRIFT.

December 31, 1906.

1. Free Receptors. By F. WEIL and O. AXAMIT.
2. Myasthenia Gravis Pseudoparalytica. By A. E. SITZEN.
3. The Relations of Meningococci to Gonococci.

By L. ZUPNIK.

1. Free Receptors.—Weil and Axamit report the results of eight experiments on guinea pigs which fail to give the least indication of the action of free receptors in the extract employed, in which they were present in great quantities, and they therefore conclude that the theory brought forward by Neisser and Shiga, that the production of antibodies, particularly of agglutinine, is due to the action of the receptors, is incorrect. They consider that they have shown that the ability of bacterial extracts to hinder the reaction of immune bodies is not due to the connection of the immune bodies, that bacterial constituents which act the part of receptors (hataphore group) have not been demonstrated, and that all theories which depend for their explanation on the action of free receptors are not unobjectionable.

2. Myasthenia Gravis Pseudoparalytica.—Sitzen gives the pathological conditions found on autopsy in a case of this nature. These conditions may be thus summarized: 1. Small, fresh hæmorrhages in the cortex of the brain, lungs, and liver. 2. Flakes stained with hæmatin in the perivascular lymph spaces in the pons. 3. Collections of leucocytes in the liver. 4. Slight enlargement of the spleen, with sparse follicles which were loosely constructed and contained many polynucleated cells, and with a slight hyperplasia of the tissue of the organ. 5. Enlargement of the kidneys, with degeneration of the tubules. 6. Colloid goitre. 7. Increase in the number of the leucocytes in the blood.

3. The Relations of Meningococci to Gonococci.—Zupnik declares that the meningococci and gonococci form species of the same genus, and he has shown by experiments that meningococci which cannot be differentiated bacteriologically from gonococci have not the pathogenic power of the latter. He likewise finds that the antibodies of these cocci, agglutinine, precipitine, toxine, and antitoxine, have a generic specificity.

January 7, 1907.

1. Orthotic Albuminuria. By O. HEUBNER.
2. Contusions of the Abdomen. By O. HILDEBRANDT.
3. The Diagnostic Signification of the Specific Complement Fixation. By A. WASSERMANN.
4. Some Rare Disturbances in Basedow's Disease. By MOSSE.
5. When Should a Patient on Whom a Laparotomy Has Been Performed Be Allowed to Get Up? By C. HARTOG.
6. Contribution to the Knowledge in Regard to Tuberculous Septicæmia. By A. MARMOREK.
7. Concerning Modern Obstetrical Operations. By H. VON BARDELEBAN.

1. Orthotic Albuminuria.—Heubner desires to distinguish by the term orthotic, from the Greek *ὀρθός*, that form of physiological albuminuria which is present when the person is in an upright position, but absent when he is recumbent. He reports a case of this nature which he met with in a child that died of tumor of the brain. The kidneys were found macroscopically unchanged and the alterations detected with the microscope were very slight.

2. Contusions of the Abdomen.—Hildebrandt states that during the past seven years he has observed injuries of the following organs produced by contusions of the abdomen. Stomach, two nonperforating injuries which necessitated operation; both patients recovered. Intestine, twelve fresh perforating injuries, six of which

terminated fatally; in the six fatal cases there were total lacerations which extensive escape of fecal matter and hæmorrhage into the abdominal cavity; in five of the remainder there were one or more openings into the intestine while the sixth presented a large tear in the mesentery. Spleen, four fresh injuries; three patients recovered, while one died of pneumonia. Liver, three fresh injuries; two patients recovered, one died of anæmia. Hepatic duct, one case; the patient recovered. Pancreas, one case; the patient recovered. Kidneys, ten fresh cases; seven patients operated upon, three treated expectantly, all recovered. In the seven cases operated on extirpation was practiced in six, one was tamponed. In one case the kidney and spleen were removed at the same time and the patient recovered. One case of extirpation of the kidney in a patient with hæmophilia resulted fatally. Ureter, one fresh case complicated by laceration of the duodenum and other injuries; the patient died. One patient with an old case recovered. Bladder, one fresh case, patient recovered. Abdominal wall, eleven fresh severe contusions, in two of which laparotomy was performed, all patients recovered. The total record is of forty-eight severe abdominal injuries, with nine deaths. Illustrations are given which portray several lacerations of the intestine, a laceration of the mesentery, a crushed spleen multiple lacerations, a transverse laceration of the kidney, and a crushed kidney.

4. Some Rare Disturbances in Basedow's Disease.—Mosse reports three cases of Basedow's disease in which unusual peculiarities were exhibited. In the first case, a woman, thirty-eight years of age, the disease had been present some time, and had undergone a certain degree of improvement, when the unusual picture was presented of Graefe's symptom in the right eye and ptosis from paralysis of the levator palpebræ in the left. In the second case, a woman, sixty-eight years old, there was no enlargement of the thyroid, though the other symptoms of a high degree of exophthalmic goitre were present. In the third case, a woman of thirty-four, a condition of glycosuria was associated with the disease.

5. When Should a Patient on Whom Laparotomy Has Been Performed Be Allowed to Get Up?—Hartog advocates what seems to us a remarkably short confinement to bed after a laparotomy. The length of time, he grants, varies with the condition of the internal organs, the kind of operation, the complications and the general course, but the table of cases, which occupies a page and a half, shows that those patients were confined to bed from one to nine days after what would seem to be very severe operations. Thus a woman, twenty-three years old, who had had supravaginal amputation and appendectomy performed on account of double pyosalpinx, persalpingitis, perioophoritis, and periappendicular adhesions was allowed up the day after the operation. A woman, twenty-four years old, upon whom McBurney's operation had been performed for chronic appendicitis was allowed up on the second day after the operation, and the notes state that the patient who received as usual castor oil forty-eight hours after the operation went alone to the toilet. In none of the tabulated cases were the patients confined to bed longer than nine days, though a double salpingo-oophorectomy with appendectomy complicated with a pelvic abscess and requiring abdominal drainage, certainly sounds like a severe and serious case. The advantages claimed for having the patient leave the bed so soon are: (1) The more rapid convalescence which results from the freer and easier respiration, in elderly persons the avoidance of pulmonary complications; also the subjective feeling of good health, the improvement of the appetite and the better digestion; (2) the better circulation and thereby the avoidance of certain forms of thrombosis and embolism.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT

January 8, 1907.

1. Investigations in Regard to the Influence Exerted by Beer Drinking and Fencing on the Heart in Young People. By BINGEL.
2. The Thermodynamics of the Muscle, By BÜRGER.
3. Heredity in Ophthalmology, By BEST.
4. Early Diagnosis in Pulmonary Tuberculosis, By ARNSPERGER.
5. Diagnosis of Pulmonary Tuberculosis by the Röntgen Rays, By PFÖRRINGER and BUNZ.
6. Gastropexia and Retention, By NYROP.
7. The Methods of Strengthening the Knee Reflex, By ROSENBACH.
8. A Case of Atrophy of the Liver After Traumatism and Recreation of the Organ, Assisted by Operative Intervention, By MEKUS.
9. A Case of Congenital Fistula of the Lower Lip, By GOLDFLAM.
10. Prophylaxis Against Infection in Dispensaries for Children, By FROMM.
11. Concerning Nature and Treatment of Disturbances of Nutrition in Infants (*Concluded*), By PFAUNDLER.
12. Infant Mortality in the Hospital (*Concluded*), By SOLEMAN.
13. To the Seventieth Birthday of Dr. K. Seggel, By EVERS.
14. The Number of Births and Fecundity, By NEUSTÄTTER.

1. **Influence Exerted by Beer Drinking and Fencing on the Heart in Young People.**—Bingel reports five cases in which greatly hypertrophied hearts were observed in students who were energetic fencers or heavy beer drinkers. In conclusion, he says that the healthy heart will be injured in no appreciable way by the influence of student life during its usual duration unless other injurious factors come into play. His observations are insufficient to enable him to determine whether a heart which has passed through an active German student life fails earlier and more easily than another which has not been subjected to such influences. It is naturally of great importance whether the customs of the first year of student life are maintained throughout the course.

4. **Early Diagnosis of Pulmonary Tuberculosis.**—Arnsperger describes how changes at the apex of the lung may be recognized by means of the x rays, but he says also that the examination by the x rays never renders examination by other methods superfluous. It reveals no more perhaps, but its revelations are different from those obtained by other methods.

5. **Diagnosis of Pulmonary Tuberculosis by the Roentgen Rays.**—Pförringer and Bunz deal not only with this method of diagnosis in the early stages of tuberculosis, but also of its use in chronic tuberculosis in the detection of latent and central affections, of peribronchitic processes and various forms of pleuritis.

6. **Gastropexia and Retention.**—Nyrop divides gastropexies into two classes: 1. Gastropexia associated with retention (a) in which the retention is to be ascribed to the ptosis itself through a bend in the pylorus; (b) in which the retention is to be ascribed to other causes, such as stenosis for cicatrices or compression or to valvular formations. 2. Gastropexia not associated with retention (a) in which there may be no symptoms; (b) in which pathological symptoms are present which may be ascribed to a nervous condition, or to the gastropexia as such. He reports a number of cases which were operated on.

8. **Atrophy of the Liver After Traumatism and Recreation of That Organ.**—Mekus reports a case in which a man, nineteen years old, suffered from a contusion, with possible rupture of the liver. Four days later jaundice appeared on the sclera and biliary coloring matters in the urine. The jaundice spread thence over the entire skin of the body, the urine became dark brown, and from the seventh day on the patient suf-

fered from extremely severe attacks of colic. At the beginning of the third week the area of liver dullness was markedly small. The attacks of colic were ascribed to adhesions, and finally laparotomy was performed with a view to their relief. About four litres of bile stained ascitic fluid escaped when the peritoneal cavity was opened, numerous adhesions were broken up, and a fibrinous exudate was wiped away from the surface of the intestines. Palpation of the liver revealed that that organ was very atrophic, but no operative measures were directed to its relief; and the wound was closed. At first little change was produced in the condition of the patient. Ten days after the operation an abscess was opened in the cicatrix, and then he began to improve. The area of liver dullness gradually increased until it finally reached the border of the ribs in the right mamillary line, but its lower margin could not be felt on palpation. The general health of the patient had also become very good at this time.

9. **Congenital Fistula of the Lower Lip.**—Goldflam reports a case in which he observed a congenital fistula on each side of the median line of the lower lip, which gave exit to drops of a clear fluid with the characteristic properties of mucus. A probe could be passed through each into a sac-like dilatation. The father, brother, and sister of this patient presented the same anomaly, but there was no family history of any other deformity.

10. **Prophylaxis Against Infection in Dispensaries for Children.**—Fromm suggests that the waiting room in dispensaries where there is danger of infection be divided into isolation cells.

LA RIFORMA MEDICA

December 22, 1906.

1. Inflammatory Hyperplasia of the Adipose Tissue of the Molar Region, By RAFFAELE CECCA.
2. Experimental Researches on the Anatomical Changes Induced by Chronic Poisoning with Nitric Acid, By LUIGI TOMELLINI.
3. Experimental Rabies in the Rat, By TULLIO MAZZEI.

1. **Inflammatory Lipomatosis of the Cheek.**—Cecca's case of lipomatous tumor in the cheek of a boy, aged fifteen, serves as a text for the discussion of the pathology and treatment of these rare affections of the fatty pads of the cheeks. The origin of the growth was at least in part inflammatory, as it developed coincidentally with a periostitis of the superior maxilla. The process in the cheek does not represent a separate disease as Hoffa thinks, and the terms adiposis, lipomatosis, true lipoma, indicates varieties of the same condition, the best term for which, in cases of this kind, is inflammatory lipomatosis. The treatment consists in the enucleation of the growth, and the author prefers to do this by means of an incision parallel to the inferior border of the jaw down to the bone. This gives a large field of exploration and permits the careful removal of the fatty mass without wounding Steno's duct.

2. **Poisoning with Nitric Acid.**—Tomellini studies chronic nitric acid poisoning which develops when this substance is given as an abortifacient. It is interesting to note the derivation of the word *Scheidewasser*—used in Germany to designate nitric acid. *Scheiden* means to part in German, and an ingenious midwife concluded that nitric acid "could part the fœtus from the mother." Thus it came about that nitric acid was used in some parts of Germany and Russia as an abortifacient. Eight cases of chronic nitric acid poisoning have been reported by Bellin. The present author experimented upon dogs and rabbits, giving them small doses of nitric acid, in order to show the effect of this substance on the system and also upon the gravid uterus. He concludes that chronic nitric acid poisoning produces profound changes in the metabolism. Absorption is diminished, the animals lost weight. The

lesions resemble those following chronic sulphuric acid poisoning. There is no difference between poisoning with pure and with commercial nitric acid. Nitric acid taken steadily produces fatty degeneration in various organs. It has no specific abortifacient properties, but acts as an abortive remedy, because of the cachexia which it induces in chronic poisoning.

December 29, 1906. *The Lancet*.

January 8, 1907.

1. Methods of Treatment and Prescriptions (*To be concluded*). By AUGUST MEIER.
2. Some Symptoms of Tuberculosis of the Corpora Quadrigemina. By EDUARD FOFANOFF.
3. An Anatomical Peculiarity of the Subclavicular Region. By STEFANO D'ESTE.
4. The Cerebellar Syndrome of Malaria.

By G. V. D'ALLOCCO.

2. **Some Symptoms of Tuberculosis of the Corpora Quadrigemina.**—Fofanoff reports the case of a man, age 1 twenty-six, who was seized by headaches, clouded vision, dizziness, and vomiting. On admission he could not rotate his eyes upward, and there was a slight paresis of rotation downward. His pupils did not contract. There was frontal headache, a slightly swaying gait, and a congestion of both papillæ in the eyes. The symptoms became worse, the vision being clouded markedly, the gait became cerebellar, the headache continued, and there was a foreign body sensation over the head. The only remedy for his headache were lumbar punctures, which were repeatedly used. He lost his sight completely and his hearing partly shortly before he died of exhaustion. At autopsy extensive lesions in the brain were found, originating in the corpora quadrigemina. The author concludes from a study of this case that in all probability there are supranuclear centres controlling the lowering and the lateral rotation of the eyeballs. Probably these centres are situated within the aquæduct of Sylvius near the quadrigemina. When the pupil does not react on both sides we must think of a lesion in the quadrigeminal region, which is probably excluded by the presence of the pupillary reflex. The disturbances of vision which appear early and frequently in quadrigeminal tumors are due to the lesions of the optic tracts, as well as to the hydrocephalus which accompanies these conditions. The swaying gait is also due to the hydrocephalus in most cases.

4. **The Cerebellar Symptoms of Malaria.**—D'Allocco reports a case of malaria in which he noted the unusual presence of cerebellar symptoms. It is well known that malaria can affect the central nervous system in a variety of ways. The patient, at the age of fourteen years, during an attack of pernicious malaria, had manifested almost the same symptoms as during the present attack, the symptoms disappearing under quinine in the course of a month. As there was no hysteria and the influence of drugs and poisons could be excluded, the malady could only be ascribed to malaria. The symptoms represented an affection of the cerebellum. There was a moderate amount of debility, and nystagmus was absent, but with this exception the symptoms were cerebellar. There was a certain drowsiness, and the patient rested on her side in a contracted position. Her speech was monotonous, slow, and low pitched, and her voluntary movements were uncoordinated, although she could stand without swaying. This is characteristic of cerebellar affections, as Babinski has shown. In cerebellar trouble the static equilibrium is preserved, while the kinetic equilibrium is severely disturbed.

ROUSSKY VRATCH.

December 16, 1906.

1. Some Practical Problems with Potassium Iodide. By M. P. MIKHAILOFF.

2. On the Secretion of Gastric Juice in Healthy Persons.

By F. L. FOFANOFF.

3. The Effect of Scarlatina and Diphtheria on the Diaphragm. By V. V. VINOGRADOFF.

4. The Treatment of Scarlatina with Moser Serum (*To be concluded*). By V. I. MOLTCHANOFF.

1. **Potassium Iodide in the Diagnosis and Treatment of Syphilis and Cancer.**—Mikhailoff considers two practical problems: First, the use of potassium iodide for the rapid diagnosis of cancer from tertiary syphilis, and, second, the use of the same drug in the treatment of cancer of internal organs. The first question he solves by giving from one to three enemas, containing a drachm of potassium iodide, half a drachm of sodium carbonate, and about three ounces of water in each. These are preceded by a cleansing enema used an hour previously. If the temperature of the patient rises after the injection, he has cancer. In syphilis the temperature remains normal or becomes subnormal. Iodine poisoning is very rarely seen with this method. The second problem concerns the method and dose to be used in treating cancer with potassium iodide. The author notes that within the past five years he has been able to materially assist fifteen patients with cancer of the œsophagus by the use of potassium iodide. These patients were aided in swallowing by this simple treatment after they had been told that they must be operated upon. The larger the tumors had been the softer had been their structure, the more marked was the reaction to potassium iodide. The mode of administration was the same as in the diagnostic method just mentioned. It is possible that cancer can be treated with potassium iodide in the method indicated, and there is an analogy between the effect of this drug and of Koch's tuberculin in tuberculosis.

2. **Secretion of Gastric Juice in Health.**—Fofanoff concludes as follows from a study of normal gastric secretion. The largest amount of gastric juice and the most active gastric juice was obtained after exciting the appetite by placing a breakfast in front of the subject of experiment. The same quality and quantity of gastric juice was obtained when after exhibiting the breakfast a piece of food was allowed to be chewed and then to be expectorated. Next to this test the most active exciter of gastric secretion was the swallowing of ice water. The gastric juice obtained an hour after taking Ewald's test breakfast was third in order of activity, that is, in the amount of free hydrochloric acid and in the power of digestion of albumin. Warm water and still more markedly hot water produces a small amount of gastric secretion, containing five times less free hydrochloric acid than the juice produced after drinking ice water. The act of chewing alone gives rise to a gastric juice approximately equivalent to that after taking hot water. When chewing was combined with swallowing the amount of free hydrochloric acid was about three times less than after chewing alone, a result probably dependent on the swallowing of saliva. When charcoal tablets were swallowed and excited the stomach mechanically for thirty minutes, no gastric juice was evoked. The test breakfast of Ewald, and still more markedly the test dinner of Leude, can give varying figures according to the method of administration. The longer the time spent in eating the breakfast the more thoroughly it is chewed, the higher the percentage of hydrochloric acid and the higher the digestive power. Hence Ewald's breakfast must be eaten within a definite time with a standard number of chewing and swallowing motions. The roll should be divided into four equal parts and for each part eight swallowing and chewing motions should be employed, the entire breakfast being consumed in thirty-two chewing motions and four swallows, including the water which forms part of it.

THE JOURNAL OF NERVOUS AND MENTAL DISEASE.

January, 1907.

1. Pseudohypertrophic Muscular Atrophy,
By CHARLES E. INGBERT.
2. Myopathy of the Distal Type and Its Relation to the
Neural Form of Muscular Atrophy (Charcot-Marie,
Tooth Type),
By WILLIAM G. SPILLER.
3. Consciousness in the Brutes,
By GEORGE V. N. DEARBORN.
4. Peripheral Obliterating Arteritis as a Cause of Triplegia
Following Hemiplegia.
By CHARLES W. BURR.

1. **Pseudo-Hypertrophic Muscular Atrophy.**—Ingbert says that the most important pathological changes in the muscle fibres of the muscles most affected in the case which he reports were: Cross striations less marked, lessened staining capacity, pseudo-hypertrophy, fatty degeneration, etc. Some of the small bloodvessels in the muscles showed the diffuse thickening and organized thrombi. The proliferation of the neuroglia beneath the ependyma of the central canal, the slight increase in the neuroglia of the gray matter, and the congested condition of the bloodvessels of the spinal cord were probably due to the typhoid fever from which the patient died. The chromatolysis of the nerve cells of the gray matter of the cord, especially of the lateral horn, in the segments below and including lumbar iv, is best explained by considering it secondary to the degenerative changes in the muscles. The column of nerve cells in the lateral horn of the lumbosacral cord designated No. 7 by Sano seemed to show a diminution in the number of its cell bodies. This was most marked in the fourth and fifth lumbar segments of the cord. The roots of the spinal nerves of the fourth and fifth lumbar and first and second sacral segments, both motor and sensory, were found to have a much smaller area of cross section than those from a normal subject. The left motor root of the fifth lumbar segment contained by actual count 5,171 medullated nerve fibres, as compared with 10,366 for the normal root. In addition to the reasons given for the small areas of the cross sections of the spinal roots here studied, it has been suggested that possibly the early onset of this disease prevented the "small" fibres from developing. The muscles most markedly atrophied in this case were those of the calves of the legs—muscles innervated by the cell bodies of the lateral horns of the lumbosacral segments of the spinal cord. This atrophy probably accounts for the chromatolysis of the motor cells referred to, as well as, for the diminution in the number of medullated nerve fibres in the motor roots counted.

2. **Myopathy of the Distal Type and Its Relation to the Neural Form of Muscular Atrophy.**—Spiller gives the history of a case, the condition of the patient at the time of his death being as follows: The lower and upper limbs were greatly atrophied and equally so at all parts. Contracture at the right knee was present, so that the leg could not be fully extended upon the thigh. The left leg could be fully extended on the thigh. There seemed to be contracture at the right hip. Talipes equinovarus was present on each side. No contractures were observed in the upper limbs. Emaciation was shown also in the muscles of the trunk and face. Slight lordosis was present in the lumbosacral region, and there was some protrusion of abdomen, probably secondary to the lordosis. There was no evidence at the necropsy of old spinal injury, and excepting the lordosis, there was no deformity of the vertebræ. The wasting of the face may have been caused by tuberculosis, as it was not present in 1903. Sections from the cervical and lumbar regions of the spinal cord stained by the hæmatoxylin method of Weigert or the method of Marchi, by acid fuchsin, hæmalum, or thionin were normal. A piece of muscle from the foot showed no recent degeneration by the Marchi method,

but the long standing degeneration was pronounced, and was better shown by other methods of staining. The fibrous and fatty connective tissues were much increased, the muscle fibres are greatly atrophied. The longitudinal and transverse striations were well preserved, and the sarcolemma nuclei were increased in number in some of the muscle fibres. Nerve bundles between the muscle fibres stained well by the Weigert hæmatoxylin stain, as did also sections of one of the plantar nerves. No degeneration was seen by the Marchi method in the latter, but the bloodvessels of the nerve were thickened. A piece of muscle from the back of the trunk appeared normal.

Proceedings of Societies.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

*One Hundred and First Annual Meeting, Held in
Albany on Tuesday and Wednesday,
January 29 and 30, 1907.*

The President, Dr. JOSEPH D. BRYANT, in the Chair.
(Continued from page 238.)

The Pathology of Nontuberculous Joint Infections.—The author of this paper, Dr. E. H. NICHOLS, of Boston, said that, owing to a misunderstanding at the express office, the specimens prepared were not forthcoming, so their exhibition had unfortunately to be omitted.

He explained the causes of nontuberculous joint infections to be due to: 1. Trauma, either severe or mild, and frequently repeated. 2. Infections, such as gonorrhœa. 3. Faulty metabolism, as in gout. 4. Diseases of the central nervous system.

He then divided these affections, not according to their clinical characteristics and history, but according to the pathological lesion presenting into five main groups: 1. Serous arthritis. 2. Those characterized by ulceration of the articular cartilage. 3. Those characterized by ankylosis. 4. Ulceration with new formation of bone (deformative). 5. The fungous type.

In the first variety there was an increased amount of fluid in the joint—the knee being the one most frequently affected—with thickened synovia and œdema of the surrounding tissues. The ulcerative form was an entity in itself, but usually preceded the third and fifth varieties. It was apt to follow gout, gonorrhœa, or some other infections, tabs, or faulty metabolism, or to occur in old age. It was characterized by fibrillation of the joint cartilage, ulceration, and erosion. Then the bone beneath thickened or might be destroyed.

In the ankylozing type, it was pointed out, the same fibrillation of the joint cartilage occurred with ulceration, which might or did affect the synovia. Then granulation tissue arose from the synovial membrane, and thus two granulating surfaces were in apposition. The granulation tissue partially or completely obliterated the joint cavity, and later became organized, and this process went on to the formation of cartilage or even bone. The deformative type was also shown to be associated with ulceration of the cartilage, but around the edges of it new bony processes were thrown out which mechanically retarded the motility of the joint. This occurred mostly in the hands, and especially those of women. A similar lesion might cause fixation of the spine. In the hip this type of disturbance produced its most dire effects.

The fungous variety consisted of a papillary growth or growths of synovial membrane which might entirely fill the joint. They might be primary or secondary to ulcerations. In some cases these masses might be-

come detached and form the so called "joint mice"; they might be organized into either cartilage or bone.

Pneumococcus and Typhoid Infections.—In a paper with this title, Dr. ROSWELL PARK, of Buffalo, had made a hasty review of the literature on joint lesions associated with typhoid. He showed that the lesion at the beginning contained almost pure cultures of the typhoid bacillus, but later, if a mixed infection was established, the pus producing organism killed off almost completely the typhoid germ. He referred to several ways by means of which the typhoid bacillus might enter the blood, among which were by bedsores, by phlebitis, through the mouth, and by ulcerations of the intestines.

He pointed out a monarticular and a polyarticular form, and called attention to the ankylosis or dislocation so often present. He further said that the toxic type was usually postfebrile, that it occurred in typhoid insidiously, and that it was often discovered only by accident. But when a patient kept a limb in a peculiar and unnatural position the joints should be immediately examined for dislocation.

In this disease (typhoid) the joint affections were seen to be painless, while in gonorrhœa or pneumonia there was considerable pain. Some observers attributed these lesions to an associate rheumatism, but the writer did not believe that rheumatism was in any way connected with them. He showed that these cases must be handled carefully, because the joints were already compromised, and rough handling might do serious damage.

Bedsores were shown to be very often followed by mixed infection, and then a purulent condition presented itself in the joint instead of a simple serous one.

In pneumonia the microorganisms might be filtered out by the bone or might localize themselves in a joint, and this even early in the disease. Then, again, no joint complication might come on till apparent recovery had been accomplished.

Dr. SAYRE, speaking of the symptoms and diagnosis of syphilitic and gonorrhœal affections of the joints, stated that joint lesions were often complications of syphilis, whether congenital or acquired, that, there was often hesitancy in asking parents questions concerning their past life, and that the answers given were often false or misleading. In the joint place, he advised consideration of the age; if the patient was under three years old, one must not be too quick to diagnose tuberculosis, especially if the lesion was symmetrical and painless, as this further pointed to syphilis.

In the adult, he showed the diagnosis was easy if the joint lesion came on at the same time practically as the initial sore, but where the joint was not involved till years after this was more difficult. In the case of syphilitic joints it was found that the pain was greater during perfect quiet than during motion, and the association of persistent headaches was suggestive. Some patients had persistent synovitis after comparatively mild trauma, and this often yielded to antisyphilitic treatment.

Gonorrhœa was frequently followed by arthritis in the adult, and it had been shown to be present in children. It was not confined to the knee, but the periosteum, and even the bone itself, might be involved, leading to abscess.

Many cases of flat foot were shown to be due to periostitis. Tenderness at the insertion of the tendo Achillis pointed toward gonorrhœa, as did also the painful condition of the joints affected.

Staphylococcus and Streptococcus Joint Affections.—This subject was presented by Dr. LUCIUS HOTCHKISS, of New York. Dr. Hotchkiss opened his paper by pointing out the necessity for the general physician

to be familiar with these joint lesions. He showed the avenues of infection to be the blood stream from a compound fracture or from a phlegmon, and warned the general practitioner against treating all joint affections as rheumatism. Where the diagnosis was difficult, puncture and aspiration of the joint fluid was recommended. The gravity of treating these disturbances as rheumatic was made apparent. The intensity of the symptoms varied as to the infection present and as to the joint affected. The ordinary symptoms of inflammation were always present, such as pain, heat, redness, and swelling.

The acute seropurulent lesion not due to staphylococcus or streptococcus should be distinguished by careful inquiry into the history, and aspiration might be necessary. The tissues about the joint were swollen and distended, and the infection might extend to the surrounding tissues. Fever was shown to be absent in most traumatic cases, and the richer the joint was in leucocytes the earlier the destructive process ensued. An early diagnosis was urged, in conclusion, as the basis of rational treatment.

Dr. R. FITCH, of Rochester, discussed the diagnosis and symptoms of rheumatoid diseases. He divided all nontuberculous joint lesions into four types: 1. Atrophic arthritis. 2. Hypertrophic arthritis. 3. Chronic villous arthritis. 4. Infective arthritis.

The first type, often called arthritis deformans, occurred mostly in young women and in the smaller joints. The affection might spread slowly, involving a period of years, and was characterized by atrophy of the cartilage, bony ankylosis, constant pain, and contractures. In this disorder the glands were seen not to be involved and the blood normal.

The hypertrophic arthritis was considered as a slowly progressive disease occurring both in men and in women, especially at the terminal row of phalangeal joints, being less acute and associated with less pain than the atrophic type. The enlargements were seen to be near the joint line, and the joints might become ossified. This might occur in any joint in the body.

Chronic villous arthritis, or dry joint, was shown to occur especially in the knee and to be due to internal trauma. Associated with this there was no swelling of the joint and there were no general symptoms.

Dr. H. L. Taylor, of New York, next discussed the mechanical treatment of joint affections. He called attention to the fact that the value of mechanical treatment was not fully appreciated by the profession at large. The fear of ankylosis and atrophy was without foundation. Prompt relief was often afforded during the inflammatory stage by traction and fixation by moderate bandaging, splints might be applied to prevent deformities. When an active suppurating process was in progress prompt surgical treatment was indicated.

Limited motion might be regulated by mechanical means, which, if intelligently applied, gave excellent results. The speaker cited a case where the protected use of the limb had led to most satisfactory results. He called attention to the fact that the profession had feared atrophy after fixation, etc. This fear was groundless, as the muscles would develop afterward in direct proportion to the motion.

Passive movements must not be carried on too long, too forcefully, or too soon, and they should not be pushed till the joint was sore and painful.

Dr. WOOD, of Brooklyn, then considered the operative treatment of joint affections. He said that the purpose of his paper was to consider when to operate and how to operate.

The general discussion was opened by Dr. FREDERICK R. STURGIS, of New York, who stated that potassium iodide was to be recommended in sufficient quantities, but in syphilis the joints are not so often affected as the bones.

Dr. CREVELING objected to the use of antisyphilitic treatment as an injustice to the patient, the parents, and the doctor, and stated that he did not believe gonorrhoea so common as is usually supposed.

The Medical Department of the New York State Library.—Dr. ALBERT VAN DER VEER, of Albany, spoke eloquently on this subject.

Dr. SMITH BAKER, of Utica, spoke upon an allied subject, **State Aid for Medical Libraries.**

Dr. BROWNING made the motion that a committee of five be appointed to consider the subject matter of the previous paper.

Dr. KRAUSS spoke upon the kinds of literature necessary for the maintenance of a medical library, and called attention to the excellent results obtained from a card system in Batavia.

Dr. STURGIS held that the library was a State one, and recommended a pause before the society asked aid from the State.

Dr. JACOB was opposed to asking the State for an appropriation.

(To be continued.)

Letters to the Editors.

AN EXCESSIVE DOSE OF ACONITE AND BELLADONNA, FOLLOWED BY RECOVERY.

CAMBRIDGE, MASS., December 28, 1906.

To the Editors: On December 16th I was called to see a woman, aged seventy years, of obese, plethoric build, suffering from bronchial asthma and recurring attacks of epistaxis, incident to an old standing condition of valvular disease of the heart. With a view of lowering arterial tension I prescribed the following:

R. Tr. aconite, 5iiv.
Fr. bellad.,

M. Sig. Five (5) drops in a teaspoonful of water every three hours.

The next day, on making my visit, I observed that the phial containing the medicine prescribed was almost empty, and inquired of the patient if she or any member of the family had spilled it; she replied no.

On further inquiry I learned that her husband and daughter by mistake, between them, had given her four teaspoonfuls of the medicine at intervals of three hours instead of the dose of five drops as ordered. It seemed incredible that the patient should be alive after such an experience. The only bad effects noticed by her were some dryness of the throat, thirst, burning of the lips, slight vomiting, and several movements of the bowels. The strength of the tinctures used, ten per cent., new U. S. P., the fact that atropine, the active principle of belladonna (happily her saving angel), as well as the physiological antidote, combined with vomiting and purgation, all these factors helped to prevent a fatal termination.

WALTER J. WEBB.

PROSTATIC AND SEMINAL ALBUMINURIA.

903 M STREET, N. W.,

WASHINGTON, January 21, 1907.

To the Editors: As a misunderstanding seems to have grown out of my article Albuminuria of Prostatic and Seminal Origin, with Reports of Two Cases, in your issue of January 5, 1907, I wish to state that it was not my intention to claim priority in the recognition of this form of albuminuria. I merely wished to report what seemed to me to be two very interesting cases, to emphasize its importance, and to outline the way in which it might be recognized. Dr. E. G. Ballenger, of Atlanta, Ga., has recently published two interesting articles along practically the same line (see *New York*

Medical Journal, January 24, 1906; and *American Journal of Urology*, October, 1906).

WILLIAM G. YOUNG.

Book Notices.

Le Malade et le médecin. Par Dr. DOYEN. Paris: Libraire Universelle, 1906. Pp. 244.

This is a volume of brief essays on various subjects that pertain to the physician and the patient, though some of the essays—such as those on general and local anæsthesia—seem alien to a work of this kind. The author advises that medical art can be beneficent for humanity only when the physician observes vigorously the principle *non nocet* and the golden rule.

The Extra Pharmacopœia. By W. HARRISON MARTINDALE, PH. D., F. C. S., and W. WYNN WESTCOTT, M. B., Lond., D. P. H. Twelfth Edition. London: H. K. Lewis, 1906. Pp. xxx-1045. (Price, 10s.)

We can add but little to what we have already said in a commendatory way of the value of this work to the practising physician. The new edition is a book of more than a thousand pages which can yet be slipped conveniently into the pocket. It has been revised in accordance with the eighth revision of the *United States Pharmacopœia*, the latest edition of the *National Standard Dispensatory*, and the new pharmacopœias of several European countries. As a reference book on the newer remedies, there is none to surpass it.

Woman. A Treatise on the Normal and Pathological Emotions of Feminine Love. By BERNARD S. TALMEY, M. D., Gynæcologist to the Metropolitan Hospital and Dispensary, New York. For Physicians and Students of Medicine. With Twenty-two Drawings in the Text. New York: The Stanley Press Corporation, 1906. Pp. ix-228.

It cannot be an easy task to write a book like Krafft-Ebing's *Psychopathia sexualis* or Richardson Parke's *Human Sexuality* or Forel's *La Question sexuelle*. Not only a great amount of theoretical knowledge, practical wisdom, and appreciation of human nature is required, but also discretion, the sense of delicacy, and moral courage, for while these books are written *only* for scientific purposes, they so easily fall into the hands of lascivious readers. To this class of literature belongs Talmey's *Woman*.

The author, in his preface, states a fact which nearly every physician can endorse: "His (the author's) professors at the university never told him anything of the normal sexual emotions, and his textbooks on physiology and pathology were equally silent on this subject." He says later: "With a view of supplying this want in gynæcological literature the author has ransacked the libraries for the last few years in search of light on this important subject." The fruit of his labors is this medicophilosophical treatise, written for physicians and students of medicine. His conclusions are that love is the source of everything—not a new doctrine. He alleges that the pyramids of Egypt were originally erected in honor of the feminine creative deity; that the lucky horseshoe is connected with the ancient emblems of the female genitalia; even the cross, the sacred symbol of Christianity, had, according to the author, its origin in sex worship. To prove such assertions seems to us impossible; they are deductions made by certain philosophers, and should be given as such. Do Mariette, Lepsius, Ebers, Wilkinson, to cite only the names of a few egyptologists, give this explanation of the original idea of the pyramids? The "lucky" horseshoe is explained entirely differently in Saxon folklore. And the symbol of the cross in Assyrian relics is not the ancient Christian cross T, but the Y, while

the *ankh ansata*, the symbol of life of the Egyptians, was loop shaped.

The book contains many practical hints and suggestions. It is good to learn by the experience of others, and is written in an entirely scientific manner, but would it not have been better not to include the students, but to say for physicians only?

Surgical Suggestions, Practical Brevities in Diagnosis and Treatment. By WALTER M. BRICKNER, M. D., Chief of Surgical Department, Mt. Sinai Hospital Dispensary, etc., and ELI MOSCOWITZ, M. D., Assistant Physician, Mt. Sinai Hospital Dispensary, etc. New York: Surgery Publishing Company, 1906. Pp. 58.

This little work, published in elegant style, will prove practically invaluable to every physician practising major and minor surgery, as well as to the general practitioner as an aid in surgical diagnosis. It is a veritable storehouse of useful hints and suggestions in the diagnosis and practice of all the departments of surgery, including the various specialties. Perhaps the best thing we can say of it is that it is exceedingly practical, founded evidently on broad experience, and pointing out not only the positive side of surgical knowledge and technics, but touching sensibly and thoroughly upon the negative side as well.

The work has a most useful field, and we do not doubt it will meet with the large success it so well deserves.

On Carbohydrate Metabolism (a Course of Advanced Lectures in Physiology Delivered at the University of London, May, 1905). With an Appendix on the Assimilation of Carbohydrate into Proteid and Fat, Followed by the Fundamental Principles and the Treatment of Diabetes Dialectically Discussed. By F. W. PAVY, M. D., LL. D., F. R. S., Honorary Physician to King Edward VII Hospital; Consulting Physician to Guy's Hospital. London: J. & A. Churchill, 1906. Pp. xi-138. (Price, \$2.40.)

This volume includes a course of advanced lectures in physiology delivered at the University of London in May, 1905, and formulates the later investigations of the author in the field in which he has done such excellent work.

He considers carbohydrates from a twofold aspect, physiological and pathological. In daily life, when physiological procedure is in operation, the carbohydrate principles of the food are dealt with in the system as material to be utilized, and in that process they are lost sight of after ingestion. But when the procedure is pathological, the carbohydrate material does not proceed to utilization, but exists in the system in the form of sugar, which is excreted with the urine. It is therefore held, very properly, that a knowledge of the physiological operations involved in carbohydrate metabolism constitutes a necessary preliminary to a right comprehension of the pathology of diabetes.

The author shows the inadequacy of the glycogenic doctrine, for if the carbohydrate supply is transported in the form of free sugar through the circulatory system to the point of utilization in the tissues, the sugar, with its small molecular constitution, could not be prevented from running off with the urine. To be kept out of the urine, sugar must be kept out of the general circulation, and the author believes that this is accomplished by carbohydrates being broken down by enzymes into a molecular form suited to enter into combination with the bioplasm with which, at the seat of absorption, they are brought into contact. This occurs by means of the intestinal villi and the lymphocytes; and as the latter absorb peptones so that they traverse the circulatory system without being filtered off when passing through the kidneys, so do they absorb the carbohydrates. The sugar which escapes assimilation at the seat of absorption reaches the portal

blood, is conveyed to the liver, and there is absorbed and transmuted into glycogen.

The author looks on glycogen as a cleaved off storage material that stands in the same position as fat; sugar is taken on by the bioplasm of the cells and by it transmuted into, and thrown off as, glycogen. In other words, sugar is taken on as a side chain by a proteid constituent of the blood and transported to the tissues, where it is taken off for utilization, just as is the case with oxygen.

The fundamental principles and treatment of diabetes are discussed, and the author shows that carbohydrate assimilative power is the ruling factor in that disease. The subject matter is presented most interestingly, and the book is well worth study by all practitioners.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending February 1, 1907:

Smallpox—United States.			
Places.	Date.	Cases.	Deaths.
California—Quincy	Dec. 1-15	10	
Florida—Marion County	Jan. 19-26	6	
Florida—Polk County	Jan. 19-26	10	
Georgia—Augusta	Jan. 15-22	11	
Illinois—Chicago	Jan. 19-26	1	
Illinois—Galesburg	Jan. 19-26	11	
Illinois—Peoria	Jan. 19-26	6	
Indiana—Indianapolis	Jan. 13-20	12	
Indiana—South Bend	Jan. 19-26	10	
Indiana—Terre Haute	Jan. 19-26	1	
Louisiana—New Orleans	Jan. 19-26	2	import d
Missouri—St. Joseph	Jan. 12-19	4	
New York—New York	Jan. 19-26	2	
Ohio—Cincinnati	Jan. 18-25	1	
Virginia—Hanover County	Jan. 31	35	
Smallpox—Foreign.			
Argentina—Buenos Ayres	Dec. 1-22	5	
Brazil—Pernambuco	Dec. 1-15		
Brazil—Rio de Janeiro	Dec. 23-30	1	
Nova Scotia—Colchester County	Jan. 19		Present
Nova Scotia—Antigonish Co.	Jan. 19		Present
Nova Scotia—Pictou County	Jan. 19		
Chile—Santiago	Dec. 19-26		
France—Marseilles	Dec. 1-31		88
France—Paris	Dec. 29-Jan. 5	8	
Italy—General	Jan. 3-10	1	
Malta	Dec. 15-22	1	
Mexico—Tamaulipas, State of	Jan. 18		Epidemic.
(On line of Mexican Central R. R.)			
Russia—Moscow	Dec. 15-29	3	1
Spain—Barcelona	Jan. 1-19	7	
Spain—Cadiz	Dec. 1-31	8	
Yellow Fever—United States.			
Brazil—Rio de Janeiro	Dec. 23-30	1	
Cholera—Foreign.			
India—Bombay	Dec. 25-Jan. 1	8	
India—Madras Presidency	Dec. 1-15	5,256	3,293
India—Madras Presidency	Dec. 1-15	5,256	3,293
India—Rangoon	Dec. 17-22	9	
Plague—Foreign.			
Arabia—Meddah	Jan. 9	1	
Brazil—Bahia	Dec. 8-29	13	5
Brazil—Rio de Janeiro	Dec. 22-30	12	8
Egypt—Alexandria	Jan. 4		1
Egypt—Iskandria	Jan. 6		1
Egypt—Keneh	Jan. 9	1	1
India—Bombay	Dec. 25-Jan. 1	13	
India—Rangoon	Dec. 15-22	15	
Japan—Hankow	Nov. 1-30	100	84
Peru—Catacaos	Dec. 1	10	7
Peru—Mollendo	Dec. 1	7	
Peru—Pucasmayo	Dec. 1	4	2
Peru—Paita	Dec. 1	2	1
Peru—Trujillo	Dec. 1	48	2

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending January 9, 1907.

BROWN, F. L., Pharmacist. Granted leave of absence for ten days, from January 20, 1907.

FALK, C. C., Acting Assistant Surgeon. Granted leave of absence for ten days, from January 15, 1907.

GYWN, M. K., Passed Assistant Surgeon. Granted an extension of leave of absence for two days, from January 18, 1907.

KNOWLES, RALPH, Acting Assistant Surgeon. Granted leave of absence for five days, from January 28, 1907, under Paragraph 210 of the Regulations.

MULLAN, E. H. Assistant Surgeon. Granted leave of absence for fourteen days, from February 7, 1907.

RICHARDSON, S. W., Pharmacist. Granted leave of absence for ten days, from February 7, 1907.

STIMSON, A. M., Assistant Surgeon. Leave of absence granted for seven days, from January 16th, amended to read five days.

WATTS, T. W., Acting Assistant Surgeon. Granted leave of absence for nine days, from January 22, 1907.

Board Convened.

A board of medical officers was convened to meet at Baltimore, Md., on January 28th, for the physical examination of applicants for cadetships in the Revenue Cutter Service. Detail for the board: Surgeon L. L. Williams, chairman; Passed Assistant Surgeon D. E. Robinson, recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army for the week ending February 2, 1907:

DAVIS, WILLIAM B., Lieutenant Colonel and Deputy Surgeon General. Relieved from duty as chief surgeon, Department of the Lakes, Chicago, Ill., and ordered to proceed to Governor's Island, N. Y., for duty as chief surgeon, Department of the East.

HARVEY, PHILIP F., Colonel and Assistant Surgeon General. Relieved from duty as chief surgeon, Department of the East, and upon expiration of present leave of absence, ordered to proceed to Chicago, Ill., for duty as chief surgeon, Department of the Lakes.

KREBS, LLOYD LE R., Captain and Assistant Surgeon. Relieved from duty at the General Hospital, Fort Bayard, N. M., and ordered to proceed to Fort Hancock, N. Y., for duty.

MASON, CHARLES F., Major and Surgeon. Appointed a member of the board of officers to meet at Fort Monroe, Va., to consider the requirements of the situation of that post with reference to the Jamestown Exposition.

MURTACH, JOHN A., Captain and Assistant Surgeon. Leave of absence extended one month.

SMITH, HERBERT M., Captain and Assistant Surgeon. Granted two months' leave of absence, to take effect about March 1, 1907.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending February 2, 1907:

BACHMANN, R. A., Passed Assistant Surgeon. Detached from the Naval Recruiting Station, Minneapolis, Minn., and ordered to the *Franklin*.

BOGAN, F. M., Passed Assistant Surgeon. Ordered to the Naval Recruiting Station, Baltimore, Md.

CHAPMAN, R. B., Assistant Surgeon. Detached from the Navy Yard, Mare Island, Cal., and ordered to the Naval Recruiting Station, Oklahoma, Okla.

DECKER, C. H., Surgeon. Order to the *Franklin* revoked.

GILL, J. E., Passed Assistant Surgeon. Order of January 22, 1907, revoked.

GRIEVE, C. C., Assistant Surgeon. Detached from the *Southery* and ordered to duty in the Navy Yard, Portsmouth, N. H.

LEYS, J. F., Surgeon. Detached from the Norfolk Hospital and ordered to duty with the Department of Government and Sanitation, Canal Zone, sailing from New York on February 5th.

MARSTELLER, E. H., Surgeon. Detached from the Naval Recruiting Station, Baltimore, Md., and ordered to the *Franklin*.

MICHELS, R. H., Assistant Surgeon. Orders of January 22nd, modifying orders of January 4th, revoked.

MILLER, J. T., Acting Assistant Surgeon. Detached from the *Franklin* and ordered to the Naval Recruiting Station, Minneapolis, Minn.

MURPHY, J. F., Passed Assistant Surgeon. Detached from the *Georgia* and ordered to the *Scorpion*.

STRAETEN, R. J., Assistant Surgeon. Ordered to duty in the Naval Hospital, Mare Island, Cal.

TRAYNOR, J. F., Passed Assistant Surgeon. Orders of January 30th modified; when detached from the Navy Yard, Boston, Mass., ordered to the *Georgia*.

Births, Marriages, and Deaths.

Married.

FAIRWEATHER—HIGGINS.—In Troy, N. Y., on Wednesday, January 30th, Dr. Harry Ogden Fairweather and Miss Rosella C. Higgins.

JENNINGS—HALL.—In Danville, Virginia, on Tuesday, January 29th, Dr. J. Leonard Jennings and Miss Helene Hall.

SIMONS—HAMIL.—In Albany, N. Y., on Thursday, January 24th, Dr. Willis N. Simons and Miss Theresa Elizabeth Frances Hamil.

YOUNGER—GILLIAM.—In Lynchburg, Virginia, on Wednesday, January 23rd, Dr. Edward Franklin Younger and Miss Grace S. Gilliam.

Died.

ABEL.—In Honeoye, N. Y., on Thursday, January 31st, Dr. Herman J. Abel, aged thirty-six years.

BROKAW.—In St. Louis, Missouri, on Friday, January 25th, Dr. A. V. L. Brokaw, aged forty-three.

BUTLER.—In Chicago, on Saturday, January 26th, Dr. Thomas Osborne Butler, aged fifty years.

EMMETT.—In Kansas City, Missouri, on Saturday, January 19th, Dr. Edith A. Emmett, aged sixty years.

GROSS.—In Philadelphia, on Tuesday, January 29th, Dr. Louis M. Gross, aged forty-three years.

GUNTHER.—In New York, on Thursday, January 31st, Dr. Elsnor Christian Gunther, aged forty-two years.

JENKS.—In Ypsilanti, Michigan, on Saturday, January 19th, Dr. Halsey B. Jenks, aged sixty-four years.

JOHNS.—In Scranton, on Wednesday, January 30th, Dr. C. R. Johns.

JUNGHANNS.—In Poughkeepsie, N. Y., on Saturday, January 26th, Dr. Ludwig Hubert Junghanns, aged seventy-two years.

KELLY.—In New Orleans, on Sunday, January 27th, Dr. W. P. Kelly, aged sixty-nine years.

LYONS.—In Boston, on Tuesday, January 22nd, Dr. Christopher P. Lyons, aged thirty-six years.

MC ELROY.—In Adrian, Michigan, on January 29th, Dr. George B. McElroy, aged eighty-two years.

McKEE.—In Alexandria, Pennsylvania, on Friday, January 25th, Dr. J. A. McKee.

MCNEIL.—Fond du Lac, Wisconsin, on Wednesday, January 23rd, Dr. J. H. McNeel, aged sixty-nine years.

MIDDLETON.—In Washington, D. C., on Tuesday, January 29th, Colonel Johnson V. D. Middleton, Medical Department of the U. S. Army.

ORBY.—In Chicago, on Friday, January 25th, Dr. Ernest Orby, aged thirty-two years.

SEYFERT.—In Philadelphia, on Sunday, January 27th, Dr. Theodore Seyfert.

SPENCE.—In New York, on Saturday, January 26th, Dr. Arnot Spence, aged forty-three years.

STONE.—In Le Roy, N. Y., on Monday, January 28th, Dr. Francis L. Stone, aged seventy-three years.

WATERMAN.—In Chicago, on Saturday, January 26th, Dr. M. W. Waterman, aged fifty-five years.

WEMPLE.—In San Francisco, California, on Tuesday, January 15th, Dr. E. L. Wemple, aged fifty-nine years.

WILLIAMS.—In Prince Fredericktown, Maryland, on Thursday, January 24th, Dr. Abram J. Williams, aged fifty-eight years.

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WHOLE No. 1472.

Original Communications.

THE PHYSICAL PROCESSES OF IMMUNITY AND INFECTION.

By JONATHAN WRIGHT, M. D.,
New York.

I.

Conditions and Activities of the Mucous Surfaces of the Upper Air Passages.

Never able to accept the view that a breach of the external epithelial cells is necessary for the entrance of infection through the surface of the mucous membranes, I have in previous articles in this journal¹ attempted to arrive at a rational conception of the method by which the bacteria at the surface of the epithelial lining of the tonsillar crypts, under conditions which usually obtain, linger there, while dust and oil particles pass rapidly beneath the surface.

It is partly the aim of this series of papers to make it clear why in all probability this state of the facts can better be investigated in the light of the laws of physics than in that of chemistry, as these two fields in the past have been defined. It is now becoming clear that such definitions are entirely arbitrary and are only the measure of our ignorance of the facts which obliterate the boundary lines. In the history of science in its many fields there has long been a conflict as to the chemical or the physical nature of many phenomena.² In another series of articles I have published³ the incidental notes I have taken in a wide excursion into fields in which I can allege to have no original or any very profound knowledge. These, while having for the most part no very direct bearing on the subject in hand, have nevertheless an indirect affiliation with it. I propose here to enter into a discussion of the observations in biology and physical chemistry, bearing more directly on the problem.

I know of nothing so important in the whole field of medicine as to ascertain under what conditions of the animal organism the germs of disease successfully assault the first bulwarks of its defense. When it concerns the entrance of germs in the oropharynx and nasopharynx this importance is especially emphasized. This is the locality, as I believe, in which

the majority of germs which are pathogenic to the human race sink beneath the surface. In order to understand the process by which this occurs and the laws which govern it, a fundamental change of base in the study of the problem is necessary to those who have viewed it from that which has proven so useful in the study of the internal processes of immunity. Arriving now hither from the chemical base which has served as a starting point for Ehrlich, his predecessors and followers, an attempt must be made, it seems to me, to acquire another standpoint in the recent revelations of physical science, but especial advantage also accrues from a study of the researches upon the behavior of the lower organisms as prosecuted by Verworn and his followers and in the more recent work of Loeb and of Jennings. Facts of the utmost importance as to the reactions of protoplasm to stimuli have been brought to light.

Not the least significant are those which point to the isthmus of the fauces and its contiguous areas of mucosa as localities of supreme importance in the processes which tell for the survival or extinction of animals. The spot where the two paths meet by which all which goes into the human body first passes downward to the organs of active metabolism must in the very nature of the case be the battle ground on which is fought the first battle for existence. In the lower organisms we find this exemplified almost as soon, in the scale of evolution, as they begin to be differentiated from mere absorbing structureless protoplasm. As soon as there is a mere notch visible in the lowest forms of life, by which we are furnished a landmark to distinguish the oral from the aboral pole of the individual, it is apparent that "the region at the oral pole is as a rule more sensitive than the rest of the body."⁴ In many of the ciliated lower organisms the peristomal cilia, that is those around the mouth, are stronger in their action than the other cilia covering the body. "As soon as, in the advancing scale of animal life, there are any traces of a nervous system, the nerve cells in the lowest forms of the metazoa are somewhat more numerous in the neighborhood of the mouth than elsewhere."⁵ Clustered around the oral end of the body we have the special development of the epidermal and nerve cells, which, in highly evolved animals, have resulted in the appearance of the organs of special sense, by virtue of which advantage has been secured in the struggle. Smell and taste are the ones by which the animal learns, at first in a reflex way, to select

¹New York Medical Journal, January 6 and 20, 1906.

²The history of the inception of the recently more fully developed controversy between the chemical and the physical concept of vital processes, in which Roux, Pasteur, and Du Bois Reymond took part, may be found in Merz's admirable *History of European Thought in the Nineteenth Century*, II, pp. 515 to 530.

³The Origin and Heredity of Matter. A Critical Review of the Literature. *St. Louis Medical Review*, August and September, 1906.

⁴Loeb, *Elements of Life Matter*, 1905, p. 159.

⁵Jennings, *Behavior of the Lower Organisms*, 1906, p. 153.

his food and avoid poisonous substances. These finally come under the notice of consciousness, but consciousness takes account only of an infinitesimal part of the physiological reactions which are imperative for the survival of the organism. Even those organs of special evolution, which man does not possess, such as the electric apparatus of certain fishes, is developed in a tract homologous to the vagus and glossopharyngeal nerves.⁶ As to this organ incidentally I wish to draw attention again to the electrodynamic efficiency thus possible from the interaction of contiguous plates of living protoplasm, by which an incandescent lamp may be made to glow. This is a product of the living fish, and we may thus receive some hint of the power which may be developed in the surface tension exerted between the protoplasm of bacteria and the contiguous epithelial cells in the tonsillar crypts. All direct clinical and experimental evidence aside, we may thus believe in the probability of the existence of some mechanism by which inert matter is allowed to pass, and harmful living protoplasm is halted by the epithelial cells, for we must, from the evolutionary considerations if not from the homologies alluded to, believe in its necessity for the survival of the animal.

If it is apparent that the locality analogous to the mouth in the higher animals is already well advanced in differentiation in the higher protozoa. When we arrive at the organisms among the metazoa which breathe through this orifice, the localization there of important vital processes in the defence of the organism becomes still more necessary. The lowest organisms respire at all points of their periphery. It is said that some fishes taste and that spiders smell over their whole body, but in the vertebrates generally it has proved of greater survival value to extend a horny and all but impenetrable epidermis over the whole body, and to place various safeguards over surfaces necessarily absorbent. It has proved advantageous to concentrate the intake of the material for the body's metabolism practically at one orifice. Around it and in it these safeguards have evolved not for the protection of each individual only, but for the protection of a sufficient number of individuals to preserve the race; not sufficient to keep out *all* enemies, but sufficient to keep out such a number as would swamp the resistance of the internal organism. Between what is necessary for the protection of the most exposed individual who survives, and what is inefficient for the survival of the least exposed individual we have the limitation of the scale of immunity and predisposition. Anything not attuned to that scale perishes, but within it the variation is wide, and the shorter or longer survival of the individual depends on this and on the environment. This applies to a part of the process as well as to the whole of it.

Before proceeding further with my argument I want to dwell upon the importance of the physiological action of the cilia in the process of immunity considered in its broad sense. Their chief rôle is a mechanical one, and perhaps on that account they have not been regarded as very essential agents in the process. Researches on the plant cells have shown that they are directly connected with the kinoplasm

and the coenocentrum, the storehouse of intracellular energy, of which the astrospheres, in their demonstrations of lines of force, are so suggestive of electrodynamics.

Connected thus with the machinery of intracellular energy by which the processes of reproduction and food intake go on, we might well expect the important part played by the cilia in the mechanism of digestion would be appreciated by physiologists; but the no less important part played by them in protecting the animal organism from its microbial enemies should also receive due recognition by biologists. We well know that in the metazoa as in the protozoa the lower animal organisms depend largely upon the cilia for their food and for their locomotion which often means the same thing. This function of the cilia in supplying means of locomotion is extended beyond mere food taking before and after the cilia are evolved into the legs of the centipede which carries the animal out of danger. As will shortly be seen they subserve the same function of warding off danger in lining the various air ways and food ways.

Von Dungern⁷ has shown, in addition to the now constantly utilized knowledge that the circulating cells manufacture immune bodies, that that power is inherent in cells of all kinds and especially in the ciliated tracheal epithelium, which possess complementophile groups and from which sera may be obtained, which not only paralyze and destroy ciliated epithelium, but dissolve the red blood cells of animals of the same species. We receive here one of the numerous hints of the connection between the chemical and the kinetic energies of cells which unite in subserving the same general end.

The cilia in keeping the bacteria on the move to some extent prevent their entrance, at least until they have reached distant regions compelling them to traverse surfaces of cells which destroy them or arrange a symbiosis, a *modus vivendi*, with them. The bacteria seen under the microscope to be surrounded by an areola, exude a viscid substance which acts as a defense and causes them, unmolested, to cling closely to protoplasmic surfaces with which they come in contact. Along the surfaces of the columnar cells they are waved by the cilia admirably adapted to this purpose. Where cilia are lacking other mechanical means must be adopted to prevent their entrance. In the uppermost regions of the nose it is the clear limpid serum obeying the force of gravity which washes bacteria away from the dangerous region of the cribriform plate. In the tonsillar crypts are pits especially suited for their lodgment. It being an actively absorbing surface unprovided with cilia, what keeps them from passing at once in large numbers beneath the surface like dust and fat droplets? Gravity and dripping limpid secretions are here manifestly of no avail. These are cavities unprotected by cilia, and in a locality which needs protection more than any other in the body.

Scatter carmin granules⁸ or smear oil droplets⁹ on the surface of the faucial tonsils, and at once they pass beneath the surface. Scatter carmin grains on

⁶ *Münchener medizinische Wochenschrift*, 1900, No. 20.

⁷ *New York Medical Journal*, January 6, 1906.

⁸ *New York Medical Journal*, December 15, 1906.

⁹ Max Borchert, *Zur Kenntnis des Zentralnervensystems von Torpedo*, 1903.

the epithelial surface of the maxillary sinus through an external perforation and the cilia will cast them out through the hiatus before one can look into the nose, if the animal is alive and the sinus healthy. When the cilia are paralyzed by local inflammation or systemic depression (pneumonia, etc., ?) foreign matter and local excretions would fill the sinus cavity and furnish an ideal nidus in which germs

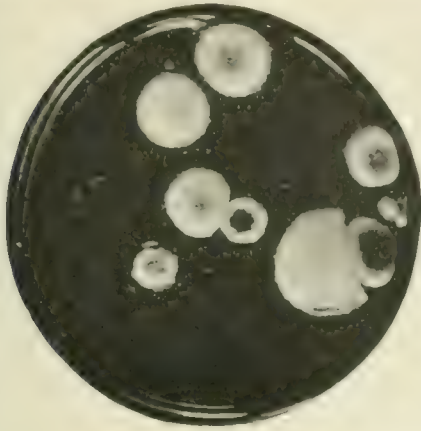


FIG. 1.—Mould contents of ten litres of laboratory air.

may develop. The practice, so much in vogue of late years in rhinological practice, of freely opening the accessory nasal sinuses on the slightest pretext and ruthlessly scraping off the investing membrane cannot be too strongly condemned. Much of such work is eminently unscientific and finds no excuse even in clinical experience. For this, if for no other reason, I am justified in urging the importance of the cilia as agents of immunity both local and general. I think it quite likely that the sinus suppuration which is found at autopsy in more than one half of the cases of pneumonia is dependent upon a cause it has in common with it, *i. e.*, some paresis of the cilia of the air passages, bronchial and sinusoidal, which makes their action physiologically inefficient. How far the same factor may be of importance in the primary infection and the final death from phthisis can only be conjectured. A halt in their waving or a faltering in its efficiency would soon clog all dependent cavities. Pneumonia following ether inhalation; even septic pneumonia, may depend for its inception as much on the depressed state of the surface in this and other mechanical ways as upon a depression of the internal chemical defenses of the organism. The cilia connected genetically and morphologically with the cellular energies of the protoplasm must play their part as well as its unseen molecular activities. This is no fanciful speculation. It is based on too many underlying facts to be far out of the way, but what their relative value in the complex process of infection and immunity may be it is at present impossible to say. With the process seems inextricably confused the phenomena of osmosis. Its laws are not well understood, but we know of its importance in all the functions of absorption and digestion, and it must be taken into account in a consideration of the process by which various kinds of matter pass the epithelial barriers in the pharynx.

Goodale has shown, as have a number of others, how carmin powder and other inert granules pass

quickly in through the surface without a breach in its continuity. I have recently shown that fat globules pass quickly in. Previously I had shown that the bacteria were sifted from the dust by a selective action of the epithelium and it is the chief purpose of these papers to attempt to gain some insight into the process by which this marvelous selective action takes place, and to arrive at an understanding of the fundamental laws which govern it. Many years ago the adaptation of the convolutions of the turbinated bones to act as a bacterial filter for the inspired air attracted my interest. Since then the vibrissæ at the entrance of the nostril have been shown to play their part, but the damp surface of the convoluted folds of mucosæ swelling from the filling of the venous sinuses and secreting an extra amount of viscid fluid when irritated by dust, the drip of sterile secretions from above, the direction of this sewage current to the pits of the tonsils, have not attracted the attention their significance warrants. In 1889 I published in this journal some photographs, which I reproduce here (Figs. 1 and 2), demonstrating by means of mould colonies the bacterial contents of ten litres of laboratory air and comparing it with the same quantity of air after passing through the nose. It may be readily seen how large a proportion of the germs in the ordinarily inspired air, that is air containing the average amount of germs to which the animal organism in the course of evolution has been exposed, is filtered out before the air reaches the entrance of the larynx. The residuum represents the amount of germs which the surface defences and the internal forces on the average in a condition of health are able to dispose of without entailing the death of the animal. More or less familiar with experiments



FIG. 2.—Mould contents of ten litres of laboratory air after nasal filtration.

which have been published in large numbers since then I have never been able to ascribe to them the weight in the practical problem adjudged by others as their due, because almost without exception the air has been artificially loaded with dust and bacteria. Thus the nose and nasopharynx have been subjected to conditions which, as a rule, have not prevailed during the millions of years of phylogenetic history in which the nose and nasopharynx have been shaped to their functional needs.

This evolutionary principle has been and still is continually disregarded in interpreting the results

of experimental work. It surely is of very slight practical interest to ascertain just how a broom works in sweeping back the ocean tides, but the housewife is fully aware of its efficiency in cleansing the kitchen floor. So with the convolutions of the nasal bones, their damp mucosæ, the waving cilia, the swelling and the subsidence of the venous sinuses, the dripping mucus, are all more or less adapted to the regulation of the air current, to which the average individual of the race which has survived, has become adapted. The dust and bacteria thus arrested in the air current, and such as are separated by mastication from the food, ultimately slip along the gutters to the cesspools of the pharyngeal and faucial tonsils. When we realize these processes of filtration and drainage, when we realize the morphological adaptation wrought by the forces of evolution in the nasal chambers, and when we shape this realization into a vivid mental picture of its reality, and correlate it with what we know of the existence of the internal processes of immunity, we see that there is no discontinuity in the struggle of the organism with its environment at the junction of the food and airways by means of which it holds fast to the good and rejects the bad.

44 WEST FORTY-NINTH STREET.

DISTRICT NURSING AND EXTRA DIET IN THE TREATMENT OF TUBERCULOUS PA- TIENTS AT THE PRESBYTERIAN HOSPITAL DISPENSARY.

BY HENRY L. SHIVELY, M. D.,
New York.

The physician whose work in dispensary classes brings him much in contact with tuberculous disease, must soon realize that his chief function and usefulness in a purely medical capacity is in the early diagnosis of the disease and in repeated careful examinations of the patient's condition. The real treatment of tuberculosis is now very generally recognized to be a large public question, the solution of which can hardly be attempted with the unaided resources of the ordinary dispensary.

In its broadest aspects the antituberculosis crusade is a warfare waged against ignorance, uncleanness, intemperance, poverty, and social misery of all kinds which must enlist the services of philanthropic laymen, as well as physicians. The needs of the patient as to suitable home environment, good hygiene, and diet which have been so frequently insisted upon, carry the doctor far afield from his strictly medical duties into the realm of the trained charity worker and student of social economics. It is doubtless true that even within the limitations imposed upon him by the dispensary conducted on the old lines, the dispensary physician has been able to accomplish much real good in educating the tuberculous patient as to the nature and hygiene of his formidable disease. Only too often, however, the physician when confronted with the consumptive patient from the tenements, while prescribing rest, fresh air, and abundant nourishing diet for the forlorn and pitiable object before him, has realized that his impossible counsel of perfection was a melancholy farce, as impracticable of attainment as a sanatorium in the Alps or a climatic

cure in Colorado. In this extremity, to salve his conscience and to make the patient feel that something was being done for him, the easy and only available expedient of drug giving was resorted to, and the patient would depart with a simple cough mixture, a bitter tonic, or a bottle of codliver oil—or perhaps all three. The patient would naturally soon discover that his condition was not materially changed for the better by this procedure, for medicines indeed could accomplish little when all of the bad conditions of his unfavorable domestic environment continued, and he would drift about from one hospital to another, vainly seeking as a chronic clinic habitué an amelioration in his treatment by a frequent change of doctors. It was unusual under these conditions for a tuberculous patient to continue under observation at the same dispensary for a longer period than a few weeks at most. Very often he did not return at all, nor in many cases was this very much regretted by the clinic physician, for after the initial physical examination and detection of the morbid signs, the patient ceased to be an interesting case, and his almost inevitable downward progress was a mute reproach and uncomfortable spectacle in the complete demonstration of therapeutic bankruptcy it afforded.

With the advent of the trained nurse as a district visitor a better era dawned for the neglected consumptive in large cities. The necessary knowledge of home and economic conditions now supplemented the study of the patient's physical state, and this is as necessary as the latter for a correct understanding of the many difficult problems to be solved. Much useful data as to the patient's habits, cleanliness, intelligence, conscientiousness, and pecuniary circumstances were obtained, and the patient himself felt that a real effort was being made to accomplish something for him in these friendly visits by the nurse. When she rightly understands her important duties she is a true social missionary carrying the gospel of good hygiene where it is most needed. More intimate and more helpful relations through her agency are established between the home and the clinic, better control of the patient is secured, and the obstacle to successful treatment of changing from hospital to hospital is greatly reduced. This evil now promises to be practically done away with by the plan of districting the city for the dispensary care of tuberculous patients.

It was soon apparent that to efficiently provide for the work of district nursing, the pupil nurses who were first tried at the Presbyterian Hospital Dispensary were inadequate on account of their inexperience and the frequent changes necessitated by their course in the training school. Patients often resent the intrusion of numerous visitors from societies and institutions, however well intentioned, and the confidential relation so necessary to develop the greatest usefulness of the nurse can only be secured by permanency of tenure, tactfulness, sympathy, enthusiasm, and experience in the work. For the past year the district nursing for tuberculous cases has been entirely carried on by permanent salaried nurses selected for especial fitness for their duties. With the knowledge of the other than strictly medical elements of the tuberculosis problem thus forced upon his attention by the daily reports of the visiting nurse, the busy clinic physi-

cian has been obliged to enlarge the scope of his responsibilities and take up many questions which he had not before considered in sufficient detail, if at all. The necessary cooperation of the physician and nurse has made possible a complete and correct diagnosis of the physical and economic condition of each individual patient. The difficulty of providing appropriate treatment still remained.

In few dispensaries have the hospital managers even at the present time when so much has been written and spoken on this well worn subject of the hygienic and dietetic treatment of tuberculosis, appreciated the utter inadequacy for consumptive patients of the dispensary conducted in the old way. The ordinary idea of a dispensary in its simplest terms is a waiting room, an examining room, and a drug room. This last for the tuberculous patient must be to a great extent replaced or supplemented by the diet kitchen. There should be a larger appreciation of the fact now officially recognized by the comptroller of the city of New York in passing on appropriations for the city's hospital supplies, that milk and eggs are medicines for the tuberculous. It is a matter of satisfaction to the writer that by means of a generous fund provided by Mrs. William K. Vanderbilt, Sr., through Miss Anna C. Maxwell, superintendent of the Presbyterian Hospital Training School for Nurses, it was possible, in April, 1905, to make a systematic beginning at the Department of Heart and Lungs in the Presbyterian Hospital Dispensary, in supplying milk and eggs, and improving the home conditions of our tuberculous patients. From the start the expenditure of this fund has been conceived as a means of treatment rather than as a mere charitable dole, and it has been the endeavor as far as possible to limit its employment to incipient and moderately advanced cases with a fair chance of recovery. The far advanced and incurable case should be cared for in hospital where he will not be a source of infection for his family and a menace to the public. It has also been felt that great care should be taken not to pauperize the patient and break down his self dependence by injudicious and indiscriminate giving of relief which could be obtained by the patient's own efforts or from his immediate family and friends. The largest charge upon the fund has been for milk and eggs, each patient receiving two quarts of milk and two eggs daily. The number of eggs has now been increased to four a day. Other considerable items of expense have been for clothing, beds and bedding, excess of rent where patients have been removed to better rooms, railway tickets, country board, cab and carriage hire for the removal of advanced cases to hospital, and car fare. There has been expended up to January 1, 1907, \$4,950.00 in all forms of relief. Among the first to recognize the value of supplying extra diet for dispensary patients was Mr. Nathan Straus, who has generously provided for many of our patients from his sterilized milk depôts. Other large individual contributors have been Mrs. John H. McCullough and Mrs. Victor Sorchan. The Walker Gordon Laboratory Company has given twenty quarts of milk daily since April, 1905. To facilitate the work of distribution a diet kitchen has been established at 509 East Eighty-fifth Street, in the centre of the tenement district adjacent to the Presbyterian Hos-

pital. The diet kitchens of the New York Diet Kitchen Association are also affiliated with our work and distribute milk and eggs to patients who are at an inconvenient distance from our own kitchen.

In spite of the general principles which we feel should limit the giving of these forms of relief, our experience has shown that the sympathies of nurse and physician have in too many cases influenced the giving to advanced cases from whom no permanent therapeutical results could be expected. In a few instances deception has been practised by patients who were abundantly able to pay for extra diet and treatment. These cases are happily rare, and have been encountered mostly among our recent immigrant population, where the standard of living is low and home conditions as to overcrowding and food are bad, often more on account of ignorance and contentment with squalid conditions than lack of adequate means in the family.

Among tuberculous patients it may be said in general that there is little abuse of the dispensary by those who can afford to pay. Many self respecting people who have never sought charity see their scanty stock of savings rapidly exhausted when their earning capacity is lost or impaired by an illness of long duration, such as tuberculosis of the lungs always entails. They often shrink from applying for relief and have the suffering of genteel poverty added to that incident to their disease. Such cases are among the most worthy whom it is a privilege to help.

In the care of tuberculous cases at the Presbyterian Hospital Dispensary an effort has been made to utilize all existing agencies which can assist in any way in the necessary work of relief, our conception of the tuberculosis dispensary being that it should be a clearing house from which the patient can readily obtain the treatment and aid best suited to his individual needs. Advanced cases are sent to St. Joseph's and the Seton hospitals. Moderately advanced cases who cannot have suitable conditions for treatment at home have been referred to the Riverside Sanatorium of the City Health Department, to the Bedford branch of the Montefiore Home, and in summer to the tuberculosis camps on Blackwell's Island. Incipient cases have been received at Raybrook and Otisville, and a few patients have had the benefit of treatment at the Adirondack Cottage Sanatorium, at the Loomis Sanatorium, and at Stony Wold. Through the cooperation of the tuberculosis relief committee of the Charity Organization Society a number of our patients were boarded and cared for in the country last summer. The conferences of this committee have been suggestive and of great benefit in improving our methods, and also in keeping us in close touch with other agencies. Especially helpful has been the association with the lay members of the committee who have given us an insight into the methods of the trained social workers of the Charity Organization Society which have been developed by long experience, and which have done so much to place the giving of all forms of relief upon a more scientific and better organized business basis.

One of the greatest difficulties in conducting a tuberculosis clinic has been the impossibility of limiting the attendance to a number of patients which would make possible the frequent examina-

tions and individual attention which are so necessary to obtain the best results. Our consistent purpose has been to send the patient elsewhere whenever by so doing he could receive better treatment. Unfortunately, the long waiting lists both of hospitals and sanatoria often oblige us to continue cases which are certainly better suited for hospital treatment than for the clinic which can only care for ambulant patients. The better the work of a clinic is done, the greater the number of patients in attendance. The overcrowded condition of existing institutions will doubtless be relieved by the establishment of other tuberculosis clinics which are now projected, and by the excellent plan of districting the city for tuberculosis work which has been successfully carried out since last summer by the relief committee of the Charity Organization Society in cooperation with the Health Department and the special dispensaries already established.

Since the giving of extra diet in connection with district nursing was first begun at the Presbyterian Hospital Dispensary in April, 1905, there have been examined in the Department of Heart and Lungs, up to January, 1907, 575 patients with pulmonary tuberculosis. Of this number forty-nine have regularly received milk and eggs free from the dispensary for a sufficient period of time to make possible conclusions of some value as to the effect of treatment. Of these, eight have passed from under our observation, and it has not been possible to ascertain their present condition. The remaining forty-one cases may be tabulated as follows. The classification advised by the National Association for the Study and Prevention of Tuberculosis has been adopted:

	Apparently cured.	Much improved.	Improved.	Stationary.	Progressive.	Died.
First stage, or incipient—11 cases	5	4	1	..	1	..
Second stage, or moderately advanced—19 cases	2	5	4	1	4	3
Third stage, or far advanced—11 cases	..	..	1	..	5	5

Whatever favorable results have been obtained are to be attributed in great measure to the extra diet and improved hygienic conditions these patients have had.

The highest gain in weight recorded was forty and a half pounds. For the cases which increased in weight the average gain per capita was a little more than eleven pounds. An examination of these figures will, it is believed, afford some encouragement for all who are interested in the home treatment of tuberculous patients, and will also demonstrate the wisdom of excluding advanced cases from the treatment which can be expected to benefit only first and second stage cases. It may confidently be anticipated that a considerable proportion of the incipient cases may be cured, and every second stage patient should have his chance of recovery assisted by appropriate treatment, as long as improvement is possible. If he has progressed into the third stage efforts should be then continued only to provide for the patient's comfort and to prevent his infecting others. It is perhaps possible that if cases for home treatment could be as carefully selected as are sanatorium cases, with sufficient means of relief, there may in time be shown results comparable to those obtained from sanatorium treatment, and at much less expense. When it is remembered that

the great majority of cases must be treated at home, if at all, it would seem that it is in this direction that the most important development of tuberculosis relief work must be made. Recognizing the great value of sanatoria in the treatment of tuberculosis to any one familiar with the vastness of the problem as presented in large cities, their limitations also are very obvious. Their greatest usefulness is in the treatment of the well to do and middle class patient, it is doubtful whether they can ever be a very large factor in the treatment of the poor. No less an authority than Cornet has recently expressed the opinion that their importance has been overestimated. He has said that the sanatorium movement in Germany, where it has been most widely extended, is premature, ill adapted to the end in view, and enormously expensive, with a showing of results out of all proportion to the cost. In this country the sinister influence of politics, it is said, has already been seen in several public sanatoria, and fears have been expressed that positions on their staffs of physicians and attendants may be regarded as "places" for the needy favorites of politicians. Should these fears be realized it will be difficult for such institutions to escape the abuses and merited obloquy which formerly were associated with the county almshouses of unsavory memory.

A serious practical objection to the sanatorium treatment of the tuberculous poor is the breaking up of the home and the dispersion of little children it often obliges in the prolonged absence of the mother or bread winner of the family. In several instances which have come under observation the patient, after a course of sanatorium treatment, has returned to find the home permanently wrecked through the unfaithfulness of husband or wife. Results are more likely to be permanent and it is obviously better, for many reasons, to bring sanatorium methods into the homes of the poor than after a brief sojourn in an institution to return the patient to the old conditions which engendered his disease. At the present time it is unfortunately true, however, that many city dwellers must be removed from their homes to obtain for them such elementary requirements of healthful living as fresh air, sunlight, nourishing food, and rest.

303 AMSTERDAM AVENUE.

CASES ALLIED TO AMAUROTIC FAMILY IDIOCY, WITH REMARKS ON THE PATHOGENESIS OF THE AFFECTION.*

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The disease described first in 1881 by Warren Tay and in 1887 by B. Sachs under the name of amaurotic family idiocy presents, as it is well known, the following characteristic features: A progressive mental weakness; inability to hold up the head; muscular wasting and cachexia, which leads to a fatal termination at the age of from two to three years; convulsions and exaggerated reflexes; amaurosis with changes in the eyegrounds. The latter show the presence of a white, bluish area in the macular region, in the

* Read and patients exhibited before the College of Physicians, December 5, 1906.

centre of which there is a cherry red spot. The occurrence of the affection in early infancy in individuals of the same family, and curiously enough in Hebrews of Russian extraction, are additional typical points of this bizarre disease.

According to the majority of observers the pathological condition of the affection consists essentially of a *primary* alteration in the entire nervous system, but chiefly in the cortex. Secondary degeneration of tracts have been reported by many writers, but not by all. The degeneration of the tracts is comparatively small, so that it differs greatly from that found in other affections, as diplegia, cerebral hæmorrhage, etc. It must be therefore considered as an affection *sui generis*. The macroscopical appearance of the brains has been different in the reported cases. Sachs found in his first two cases defective development, and in all three of his cases the brains were sclerosed. Other authors failed to find gross changes.

Sifting all the data recorded by competent observers one must agree with the opinion recently advanced by Poynton, Parsons, and Holmes (*Brain*, 1906, No. 114), as well as by Russel and Kingdon, that the disease is not due to an arrested development, but to a degenerative inherent condition primarily of the cells and secondarily of the entire neurons.

The clinical picture as described is not always present in its entirety. The symptoms which may be absent are: Spasticity or increased reflexes or convulsions. Eye symptoms, the family character, the mental deficiency and finally the early death, are features indispensable to constitute the type of amaurotic family idiocy. On the other hand, there are cases which, although do not present all the important symptoms of that affection, show nevertheless the majority of them, and must therefore be considered as allied to that disease. Spielmeyer, for example, describes a special form of amaurotic family idiocy (*Neurologisches Centralblatt*, 1906), in which mental weakness, blindness, and the family character were the only symptoms common with the Tay-Sachs disease. In his case only at the age of six began to develop mental deficiency, together with retinitis pigmentosa. The patients lived till the age of puberty, when death occurred from intercurrent diseases. Two of Spielmeyer's cases came under autopsy, and the pathological changes were found to be confined to the cells; the alteration of the nerve fibres was slight. The cells showed swelling and a peculiar granular substance. Comparing this condition with the cellular alteration in the Tay-Sachs disease, viz., excessive growth of protoplasm which later undergoes degeneration, we must conclude that the analogy is very great. Spiller (*American Journal of the Medical Sciences*, 1905) also speaks of a case which was not quite typical of amaurotic family idiocy, but in which cellular changes were found; this patient lived till eight years of age.

Taking into consideration the variations of the anatomical findings, also of the clinical pictures in all cases reported, one must say that amaurotic family idiocy presents several forms more or less different from the original type. The two cases

I am about to report are allied, I believe, to the Tay-Sachs disease by the following peculiarities. The blindness with which they are affected was noticed very early in life; now the girl is totally blind, the boy to a great extent. The mental deficiency was noticed since infancy, especially in the girl. The two patients are brother and sister, and they are offspring of Russian Hebrews. While the changes of the eyegrounds are not entirely typical of the amaurotic family idiocy by reason of absence of the cherry red spot in the macula, nevertheless optic atrophy, which is present here, was stated in the majority, if not in all cases of that disease. Clinically my cases, similar to Spielmeyer's (mentioned before), belong to the same category, and they can all be considered as forms of the same great group of affections called in a general term amaurotic family idiocy.

The symptoms observed in this affection during life are external manifestations of the anatomical degenerative condition of the cortical cells. They will vary according to the degree, extent, and character of the degeneration. In my two patients the stigmata of degeneration are far more extensive than in the Tay-Sachs form or in Spielmeyer's form. The boy, for example, presents among many other stigmata a very unusual anomaly, viz., polydactylism of all four extremities.

Various views have been advanced by authors to explain the cause of the degenerative state of the cells in the Tay-Sachs disease. So far none is absolutely satisfactory. A suggestion forces itself upon us, since our studies of the internal secretions in the organism appear to clear up many obscure phenomena. It is possible that some profound anomalies in the structure and function of the *ductless glands* are the real cause of the diffuse anomalous condition of the cells of the nervous system. Authors who reported cases of amaurotic family idiocy do not mention such a possibility, and among all the records in the literature at my disposal I found only two in which post mortem examination embraced also the ductless glands. They are: McKee's case (*American Journal of the Medical Sciences*, 1905), in which the thymus was small, and Peterson's case (*Journal of Nervous and Mental Disease*, 1898), in which the suprarenals were pale, yellow, firm, and had a small cavity in the centre. It is regrettable that similar examinations have not been made by others, and that their investigations have been confined exclusively to the nervous system. At all events the idea is highly suggestive. My two patients are interesting from this standpoint. They both show distinct changes in the thyroid gland; in one the gland is enlarged, in the other it is not palpable. The histories of the cases are as follows:

CASE I.—Harry F., nine years of age, was born at term and normally; the delivery was without instruments. At the age of ten months he had a mild attack of diphtheria. He began to walk at nine months and to speak at two years. When he was twelve months old, the mother noticed he could not see well. For a long time he behaved like an infant; it was extremely difficult to teach him anything. At the age of five he was sent to school, which he has been attending regularly since, but he is still in the first grade. At pres-

ent he is very childish, takes interest in things not corresponding to his age, talks and acts like a boy whose mentality is below the average. Nevertheless, according to the mother he has improved considerably. As to his physical condition he presents the following symptoms: Very marked obesity; he began to grow stout at the age of three. The adiposis is constantly increasing in spite of the fact that the boy eats ex-

the two incisors are normal, but the other teeth are unusually small. In the lower jaw the four front teeth are normal, but the others also very small and decayed. The thyroid gland cannot be felt. There is



FIG. 1. -Case 1.

tremely little; the quantity of food is so small that the mother at times becomes alarmed. While the face is very full, the upper part of the head is small and out of proportion with the rest. The forehead is low and narrow. The ears are unequal in size; the right being one fourth of an inch longer than the left; the latter is also somewhat lower than the right. The palate is narrow and presents a high arch. The teeth are irregular and abnormal in size; in the upper jaw



FIG. 2. Radiograph, showing six toes on each foot.

also cryptorchidia; the right testicle is not descended. The penis is infantile.

The boy walks normally and presents no rigidity or deformities in the extremities. The reflexes are normal. There is a slight instability of the head; it is animated with slight jerky and tielike movements. The condition of the eyes is as follows (report made by Dr. H. F. Hansell): V. = $\frac{6}{200}$ in each eye, improved to $\frac{18}{200}$ by - 3.2. - 150° + 180°; $\frac{20}{200}$ by - 3.2. - 200° + 180°. Divergence of right, rotatory nystagmus, rotation in all directions limited, but not absent. Pupils equal and react. Optic discs pale. Large irregularly outlined patch of absorption of chorioidal pigment in each not symmetrically placed. Chorioidal vessels too evident in all parts of fundus. Partial atrophy of optic nerves and retinal.

The most remarkable and unusual feature of the case is the polydactylism. There are six fingers on each



FIG. 3. Radiograph, showing six fingers on each hand.

hand and six toes on each foot. As it is shown by the x ray picture taken by Dr. Manges, the supernumerary fingers are added to the last finger of both hands. The manner of attachment of the sixth finger and of the sixth toe to the metacarpal and metatarsal bones,

respectively, and other details of the changes in the latter bones are well illustrated on the pictures, so that an additional description appears to be superfluous.

CASE II.—Pearl F., thirteen years of age, sister of the first patient, was born at term after a protracted labor (no instrumental delivery). She began to talk and walk at the age of three. At about the same time her blindness was noticed by the parents. Contrary to her brother she was very large at birth. Her adiposis began to grow rapidly since then. The development of her mentality was much slower than that of Harry. Her speech was always deficient. At present her actions and manner are those of a very young child. Her answers are foolish, inconsistent. Spends her time in playing with dolls and is extremely apathetic. Has been going to school for the last six years and is still in the second grade. Cannot do simple additions or multiplications.

The physical symptoms are as follows: The adiposis is extremely pronounced. Her mammae are well developed. Began to menstruate at twelve. Has an enormous appetite, is never satisfied with any amount of food. The forehead is low and the scalp is very thick. The lobes of both ears are attached to the head. The teeth of the upper jaw are widely separated and deficient. The thyroid gland is somewhat enlarged. The gait and station are normal. No rigidity of the limbs. The knee jerks are increased, but there is no other abnormal reflex. The speech is deficient. The pronunciation and articulation of words are not distinct. The intonation of the voice is nasal (the nose and throat examination is negative). The eye examination made by Dr. H. F. Hansell shows the following: Vision, counting fingers at 5 feet. Fields apparently concentrically limited. Rotation of balls restricted in all directions. Media clear. Optic nerves and retinae atrophied; oval area including fovea and of about the size of the papilla much redder than remainder of fundus. Pupils equal and react easily.

1430 PINE STREET.

SPLENECTOMY, WITH A REPORT OF FIVE SUCCESSFUL CASES.*

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No operation has been more greatly improved in a short time than splenectomy. Its early history is so interesting in this connection that I quote Dr. Maurice Richardson¹ as follows:

In 1826 Quittenbaum, of Rostock, removed a diseased spleen; the patient, a woman, died in six hours. In 1855 Kuchler, of Darmstadt, removed a spleen for malaria; the patient died of hemorrhage in two hours. The first operation, in England, performed by Sir Spencer Wells in 1865, resulted fatally in six days. The first successful case was that of Pean in 1867.

In 1893 Vulpius² collected 121 cases of splenectomy with a mortality of 40.6 per cent., and von Ceci³ a number of cases with a mortality of 51.6 per cent. In 1900 Bessel-Hagen⁴ collected 358 cases with 225 recoveries and 133 deaths, a mortality of 37.2 per cent. According to Bessel-Hagen the mortality previous to 1890 was 42.2 per cent. and from 1890 to 1900, 22.8 per cent:

The operations for this decade were as follows:

* Read before a meeting of the Southern Surgical and Gynecological Association, held at Baltimore, December 12, 1906.

¹ Dennis, *System of Surgery*, iv, p. 376.

² *Munchener medizinische Wochenschrift*, li, pp. 116 to 118, 1904.

³ *Ibid.*

⁴ *Leipsigische Archiv für Klinische Chirurgie*, 1900.

Disease	No. of cases	Died.	Recovered
Leucæmia	5	5	27
Wounds	4	14	29
Aneurysm	1	0	4
Tuberculosis	2	0	2
Echinococcus	10	1	9
Intest. with engorgement	3	0	3
Sarcoma	1	1	3
Benign tumors	2	1	1
Twisted pedicle	14	5	9
Wandering maternal spleen	15	1	14
Wandering spleen, idiopathic hypertrophy	28	2	26
Fixed spleen, malarial hypertrophy	61	15	49
Fixed spleen, idiopathic hypertrophy	15	2	13
Bant's disease, hypertrophy with cirrhosis of liver	16	3	13
Totals	218	50	168

Felix Bayer added to this table thirty-five cases from 1900 to 1904 with four deaths and one unknown result—a mortality of 11 per cent. or 14 per cent., according to the termination of the unknown case.

The chief cause of death, according to all reports, has been hemorrhage. Hemorrhage from the wound, from the slipping of ligatures, and secondary hemorrhages. Mosler⁵ says "when the spleen alone is sick there appears to be a deep founded alteration of the blood. In many cases of plain hypertrophy and pseudoleucæmia, and neoplasms there is a hemorrhagic diathesis. Also chronic malarial tumors are accompanied by a hemorrhagic diathesis." Many of the earlier patients died from sepsis, and the chief reduction in mortality has been due to the elimination of hemorrhage and septic infection. The next most frequent cause of death seems to have been shock.

H. M. Jordan⁶ in the *Lancet* calls attention to the intimate relation of the spleen to the sympathetic and vagi nerves. He believes that pulling upon and cutting the branches of the splenic plexus, particularly those passing from the stomach to the upper part of the spleen, causes profound shock. He describes a method of partial splenectomy which he has performed successfully upon dogs a number of times, and which has for its object not only the saving of part of the spleen tissue, but also the avoidance of injury to these nerves.

It would seem that with the improved technics of modern surgery the chief dangers of splenectomy should be overcome and the operation made a comparatively safe one. But while much has been done in this direction, there is still great room for improvement.

I make no claim for an original operation, but I believe that if the plan of operation which follows be carefully carried out, the chief sources of danger—hemorrhage, shock, and sepsis—will be nearly eliminated.

The position of the patient is important. A large sandbag should be placed under the back, under the upper end of the spleen, and the foot of the table lowered about six inches. The incision may be median or through the left rectus muscle. I prefer the latter, as it gives better access to the phrenosplenic ligament. The length of incision should be governed by the size of the growth and amount of adhesions; but in every case should be ample, and if necessary a transverse incision may be made from the upper end of the primary wound parallel to and half an inch below the lower border of the ribs. I

⁵ *Munchener medizinische Wochenschrift*, li, p. 1116, 1904.

⁶ Paper before the Medizinische Gesellschaft von Göttingen, 1898.

⁷ *Lancet*, London, 1898, i, pp. 298 to 317.

have not found this necessary in any of my cases, but in very difficult cases it would be a great advantage.

Before attempting to isolate and deliver the spleen a careful examination should be made to determine whether this is possible. In some cases on account of a hæmorrhagic diathesis, dense adhesions, or excessively large, numerous and thin walled veins, the operation may have to be abandoned. Such cases, while rare, do occur and have been reported by the best surgeons. The question of removal or abandonment should be settled before starting profuse hæmorrhage which may be difficult or impossible to stop.

Isolation is usually easy, but may be difficult or impossible. The splenophrenic ligament should, as a rule, be first attacked. The operator, covering the spleen with gauze, draws it to the right, while an assistant draws the left lip of the wound to the left: this exposes the bed of the spleen and vault of the diaphragm. The spleen may be firmly held in its bed by atmospheric pressure. This is an important fact to remember. In one case, after trying vainly for five or ten minutes to draw the organ out of its bed, I discovered accidentally that by passing my fingers between the diaphragm and the upper and outer surface of the spleen and working them behind it, I admitted air behind it and could then readily lift it from its bed.

When it can be done the splenic ligaments and all vascular adhesions should be doubly ligated in sections and cut between the ligatures; but when this is difficult the ligaments may all be clamped and the blood supply entirely cut off in this way. The spleen may then be removed and the clamps afterward sewed round and removed, as the broad ligament clamps are usually removed in oophorectomy. All the larger vessels should be separately ligated. For picking up these vessels and for handling the splenic ligaments I have found the ring forceps sponge holders very useful. The smooth ring on these forceps holds the most slippery tissue firmly and without tearing, as the ordinary hæmostat or clamp is likely to do.

In difficult cases with extensive adhesions it is possible to grasp all the gastrosplenic ligament between the index and middle fingers of the left hand and apply a long curved rubber covered clamp. As this ligament contains the chief blood supply of the spleen the danger of severe hæmorrhage will be greatly lessened by securing it first in this manner. The other ligaments may then be clamped or ligated and cut, after which adhesions may be rapidly separated and the bleeding controlled by gauze packing. A marked increase in the pulse rate is noticed when the spleen is delivered, or when the gastrophrenic ligament is clamped. This, however, is temporary, and in most cases not alarming, unless the manipulations are prolonged. It is probably due to irritation of branches of the splanchnic nerves, and, consequently, pulling upon the ligaments, especially the gastrosplenic should be avoided as much as possible, and all manipulations of the splenic bed and ligaments should be as rapid and as gentle as possible. Shock should also be combatted by putting the patient in the best possible condition before operating, and by the free use of salt solution and

adrenalin when necessary. The usual measures for preventing infection should, of course, be rigidly observed.

The indications for splenectomy may be stated as follows:

1. Injuries that cannot be safely repaired.
2. All chronic enlargements or hypertrophies of the organ sufficiently great to cause discomfort or produce serious symptoms, except in leukocythæmia.
3. Benign tumors and cysts that cannot be readily enucleated or removed by partial splenectomy.
4. Movable spleen, when enlarged, or causing distress, especially when the pedicle becomes twisted.
5. Suppurative splenitis, unless the spleen is adherent to the abdominal wall so that the abscess may be safely opened.
6. Malignant disease or tuberculosis, when primary and confined to the spleen, or when secondary or not confined to the spleen, provided the other parts involved can be also removed or cured.

Partial splenectomy has only been performed on human beings in a few cases where a portion of the spleen, protruding through an abdominal wound, has been ligated and removed. But Jordan's⁸ operations upon dogs have shown the possibility of safely controlling hæmorrhage from the cut surface of the spleen by a sort of shoemaker's stitch through and through the organ parallel to the cut surface. There seems to be no reason why this operation should not give good results in cases of circumscribed injury or small cysts.

Repair of Injury to the Spleen has been frequently mentioned, and a good many scattering cases are recorded, but they seem to be confined to packing a wound with gauze to prevent bleeding. Ligature or partial splenectomy should be preferred on account of allowing primary closure of the wound.

Splenopexis was performed by Rydygier in 1895 by stitching the parietal peritonæum to the gastrosplenic omentum and thereby fastening the spleen in a pocket. The patient recovered, and the spleen was still in place three months later. Rydygier and several others on theoretical grounds have highly recommended this⁹ operation for movable spleen. But when we remember that movable spleens are invariably enlarged and usually diseased, and the ease with which peritoneal pouches stretch, I cannot feel that there is anything to be gained by this operation.

It can be safely said that there are no deleterious remote effects from removal of the spleen, and that its appreciable functions are fully assumed by a greater development of the red bone marrow and lymph glands. My first patient has been under observation for eight years and is strong and hearty and in excellent health. Blood examinations continued for over a year showed nothing abnormal. Numerous cases carefully watched for a long period by many careful observers bear out this statement. Therefore, when the spleen is exposed by laparotomy and is found enlarged or diseased I should strongly advocate its removal, rather than any attempt at repair or splenopexis. Wounds of the spleen are dangerous on account of hæmorrhage. Slight wounds may bleed but little and require no surgical interference; but when symptoms of sepsis or hæmorrhage appear after penetrating wounds in

⁸ *Loc. cit.*

⁹ *Archiv für klinische Chirurgie*, 1895, i, p. 880.

this region a free incision should be made, and the organ repaired or removed. If the spleen is found healthy the hæmorrhage may be controlled by gauze packing or preferably by a through and through shoemaker's stitch of catgut or silk encircling the wounded area. Gunshot wounds may be treated by partial excision when suitably situated, or by gauze packing. In one successful case I packed the wound in the spleen, bringing the end of the gauze out through the bullet hole in the abdominal wall, and closed the abdominal incision which was in the median line.

Ruptured Spleens are usually diseased and should be excised. Jordan¹⁰ mentions the fact that while in India he was surprised at the frequent reports of death from ruptured spleen. The rupture was caused in most cases by very slight violence such as a gentle blow with a walking stick, a sharp push with the hand, or a kick with the naked foot. Kipling has warned travelers in India against the reckless kicking of natives and the unpleasant habit they have of dying after such treatment of ruptured spleen. Spontaneous rupture or rupture due to muscular exertion, or very slight violence, has occurred in typhoid fever, cholera, and chronic malaria. Osler mentions three such cases in his textbook of medicine. The ease with which enlarged spleens are ruptured, particularly malarial spleens, furnishes a strong argument for their removal.

An enlarged spleen is not only a menace on account of liability to rupture, but in many cases evidently furnishes an altered secretion which is more or less toxic. This secretion appears to be eliminated, in part at least, by the bowel, and acts as an irritant to the intestine, causing in many cases severe and intractable diarrhœa. Three of my patients had diarrhœa which could not be controlled, even temporarily, by rest in bed, strict diet, bismuth, and opium. But in all three cases it ceased at once upon removal of the spleen. In two patients the diarrhœa recurred after three or four weeks, but was easily controlled in one case, and in the other two was not nearly so bad as before the operation, and could be kept in check by ordinary treatment.

Remarkably good, and even brilliant results sometimes follow splenectomy in cases of simple and syphilitic hypertrophy, malarial spleen, Banti's disease, and splenic anæmia, while in other cases apparently similar little or no benefit follows.

In the present state of our knowledge we cannot always tell certainly which cases will be benefited. In simple hypertrophy and in syphilitic and malarial spleens any symptoms referable to the spleen may be expected to disappear after its removal. Complete cure may be predicted in cases of wandering or dislocated spleen and in splenitis. In any case where diarrhœa is severe, cure or great amelioration of this symptom may be expected. The majority of cases of splenic anæmia are cured by splenectomy.

In Banti's disease, in the earlier stages, arrest or cure of the cirrhotic changes in the liver usually follows removal of the spleen, and sometimes a cure is obtained even after cachexia and ascites are marked. In leukæmia the operation should never be done, as the mortality is extremely high, and no benefit can be expected.

It is obvious that enlarged spleens, except those

where removal is contraindicated, should be removed at an early period, when the operation is safe and easy, and when the prospects for complete cure are always better. The great advantage of early operation is now generally appreciated in nearly all conditions except enlarged spleen. But it is still common practice to allow spleens to reach a very large size and to wait for cachexia and debility to supervene before operation is thought of. There has been and still is, too much tendency to look upon all splenic hypertrophy as a result, rather than a cause, of disease. I wish to make a strong protest against this attitude and a plea for early removal of all enlarged spleens beginning to cause symptoms, unless, as in leukæmia, the operation is contraindicated. Appended are my five cases of splenectomy—one for ruptured malarial spleen, one for gunshot wound with uncontrollable hæmorrhage, one believed to be simple hypertrophy, weighing eight pounds, one for Banti's disease, and one for hypertrophy of a soft inflammatory nature which we were unable to diagnose. The first patient was in bad condition from hæmorrhage when operated upon and the last three were all in very bad shape, suffering from cachexia and debility. All recovered from the operation and all were cured, except the last patient, whose cachexia continued and caused his death three months later, though for the first month he seemed greatly improved and was entirely relieved of his diarrhœa and pain. In the malarial patient, the malarial cachexia which was well marked disappeared much more rapidly than could have been expected without splenectomy, though he had, of course, proper treatment for that condition.

CASE I.—F. A., white, male, æt. eleven, was brought to the Emergency Hospital, October 28, 1898, after having been kicked in the abdomen by a mule. He had lived along the canal, and had a history of chronic malaria and also showed well marked yellow skin and emaciation of the malarial cachexia. He was not suffering when he arrived at the hospital, an hour after being kicked, but was too tender over the abdomen to admit of satisfactory examination. His pulse on admission was 110, and two hours later 130, with pallor, thirst, and abdominal distention. He was plainly suffering from intraperitoneal hæmorrhage, and exploratory incision was at once made in the median line above the umbilicus. The spleen was found much enlarged and torn nearly half in two. It was easily removed, together with about three pints of clots and fluid blood, through the median incision about four and a half inches long beginning half inch below the ensiform cartilage. The vessels were tied with catgut, and the wound closed. The boy made an uneventful recovery. Dr. Wallace Johnson examined his blood at intervals of a month for a year. Nothing abnormal was found after the patient recovered from the temporary anæmia produced by the severe hæmorrhage and splenectomy. This boy called at the Emergency Hospital two years after the operation. He had then grown into a hearty, well developed lad. I have recently learned that he is still in perfect health and is unusually strong, well developed, and hearty.

CASE II.—J. W., male, colored, aged twenty-three, was brought to the Emergency Hospital, July 4, 1899, suffering from accidental pistol wound of upper abdomen. Condition good. Pulse rapidly increased from 110 to 128. Laparotomy was immediately done, and a wound of the spleen near the hilum was discovered which bled profusely. The spleen, which was normal, was easily lifted out of the wound, the pedicle ligated

¹⁰ Loc. cit.

en masse, and the spleen removed. The splenic artery was then ligated separately. Two or three pints of blood were removed from the abdomen, and the wound closed. This man left the hospital in ten days entirely recovered. I have not seen him since then.

CASE III.—Mrs. M. B., female, white, æt. forty-four, was admitted to the University Hospital, September 6, 1904.

Family History: Father and mother died by accident. General health of both good up to time of death.

Previous History: Birth and infancy normal. Had measles, whooping cough, and chickenpox during childhood; good recovery from all. Menstruation began at seventeen, and was normal until last November, when at the age of forty-three it ceased. Gave birth to eleven children, four living—six died during the second summer. One was a premature still birth following a fall. Patient had slight lacerations, but has not suffered from womb trouble, except from a prolapse, which was cured. About nineteen years ago, while living in St. Louis, she had malaria, chills, fever, and sweats frequently for about three months. Then she came to Washington and had only a few more chills, and has had no chills nor other symptoms of malaria for eighteen years. Bowels have always been loose, has had four or five stools a day ever since she can remember. Several times has had diarrhœa that prostrated her for three or four weeks. For the last two years she has been troubled with palpitation of the heart and shortness of breath on climbing stairs. Recently this has been more pronounced and accompanied by vertigo, making it necessary at times to steady herself by holding on to something. Had bleeding piles for years, but does not suffer from them now. She has worked in a laundry and in hotel kitchens for several years doing a good deal of heavy lifting. Used to carry heavy weights, resting them on her left side, indicating the left hypochondriac region.

Last March (1904), while stooping over doing some heavy lifting, she felt as if she would "break in twain," and a little later felt a large mass in the left side, which was not painful, but tender to the touch. This mass has grown rapidly and now fills the whole left side of the abdomen. For several weeks she has had diarrhœa and vomiting; stools being accompanied by painful cramps, while her side hurts her during defæcation. Also has tenesmus. Has lost fifty pounds in the last year.

Physical examination showed her to be sallow and flabby, and hardly able to stand. Pulse 100 to 110, and very feeble. Suspicion of heart—mitral regurgitant—murmur, not sufficiently pronounced to be sure. No enlargement of heart. Abdomen is much distended, and a tumor is distinctly felt, reaching from the left hypochondriac region to the crest of the ilium, and slightly beyond the median line. This tumor had the triangular shape and sharp firm edges of the spleen, and from its situation I had no doubt it was the spleen.

The patient was put to bed on milk diet and given pepsin and bismuth. Blood examination showed 6,024,000 red and 5,200 white cells to the cubic millimetre. No abnormal cells, no malarial organisms. Hæmoglobin, 70 to 80 per cent. A second count gave 5,932,000 reds and 6,550 whites. The large number of cells was due, I think, to concentration of her blood by the watery diarrhœa which she had. The diarrhœa continued with eight or ten stools a day in spite of bismuth, opium, and diet, until the spleen was removed, when it immediately ceased.

On September 8th an examination of a stool was made by Dr. H. H. Donnelly, who made the following report: Quantity, 4 ounces. Reaction, feebly acid. Odor, cadaveric, not fecal. Color, grass green. Considerable mucus intimately mixed and occurring in masses. No blood seen with naked eye. Grass green

watery stool, with finely granular green sediment composing two thirds of the bulk of stool. White specks (casein) in sediment, pieces resembling fruit skin one to two centimetres square and smaller. Tough white coagulated masses (casein? egg?), largest 3 cm. in length; cylindrical, 1 cm. cross section. Microscopical, a good many red blood cells. Some leucocytes. Some low columnar epithelium. Fat droplets. Green amorphous material (bile stained casein). No parasites nor ova. Vegetable cells.

The urine was normal, except for a very heavy trace of albumin and a large number of leucocytes. No casts.

She was operated upon on September 15th, and the spleen removed through a six inch incision through the left rectus muscle. The operation was done hurriedly because her pulse was 160 when it was begun. The operation was completed in sixteen minutes, and her pulse dropped at once to 140, but came back to 160 for a few minutes. When she reached her room her pulse was 90, and did not get above 104 again. Owing to the weak pulse no thorough examination was made of the other abdominal organs, but a hasty exploration with the hand revealed nothing. The nausea and diarrhœa ceased at once, the wound healed by first intention, and the patient made a rapid and uneventful recovery. She gained rapidly in strength, and gained twenty or thirty pounds in weight, judging from appearances, in three weeks, when she was discharged. Three weeks later she returned to the hospital, walking several squares, and reported herself feeling perfectly well, bowels normal, appetite and strength good.

Blood count two days after operation showed 4,604,000 reds and 10,200 whites. Hæmoglobin, 60 to 70 per cent. The diminution in red cells was due, I think, to the stopping of the watery diarrhœa which had been concentrating her blood. She lost no blood during the operation. Examination of the urine six weeks after the operation showed no albumin, nor casts, nor leucocytes. The urine was normal. When the spleen was cut from its pedicle a great quantity of blood gushed out of it; one and a half pounds of this blood was caught and weighed, and fully as much escaped. The spleen after this bleeding weighed four and three quarter pounds, and before the blood was lost must have weighed about eight pounds. There were several distinct, white, fibrous nodules showing on its surface, looking like sarcoma to the naked eye. Dr. Carroll, however, examined the spleen microscopically, and reports it apparently simple hypertrophy, and the nodules simple fibrous tissue. One of these nodules was so hard as to dull a knife when cutting it.

CASE IV.—J. C., male, white, age forty-nine, farmer.

Family History: Father living, aged eighty-six; has always been in good health; mother living, aged seventy-seven; good health. Maternal grandmother died, at about ninety, of old age; no history as to other grandparents. Has two brothers and two sisters living; all in good health. One brother was killed by an accident two years ago. No family history of tuberculosis, neurasthenia, hysteria, rheumatism, gout, epilepsy, or insanity.

Previous History: Born in Woodville, Va. No history as to birth or feeding. Had whooping cough and mumps during childhood; never had scarlet fever or diphtheria; had measles at nineteen; this left him in a weak and anæmic condition. School life lasted from tenth to seventeenth year, but consisted of periods of only a month at a time. Liked study and made good progress. Worked on a farm the rest of the time. After school worked in a saddle shop four years, and for eight to ten years in a store. Married at twenty-six; wife living and in good health; has one son, age seventeen, in good health. Drinks four to six cups of coffee daily on an average; occasionally drinks tea; smokes rarely;

uses no drugs, takes an average of one drink of whiskey a month. Believes he has been losing weight gradually for a number of years; at the age of nineteen weighed one hundred and fifty pounds; present weight about one hundred and thirty pounds. Has never had any venereal trouble, never had typhoid or malaria. Last May he had a severe attack of diarrhœa, which lasted about a month and greatly weakened him; was not confined to bed, however.

Present Condition: At age of thirty-four patient broke down from overwork, felt very much exhausted and would often fall down while at work. On February 18, 1905, while performing some heavy manual labor he felt something "break loose" in the neighborhood of the spleen, which pained him for about a month; a week later he had a fall across the hind gate of a wagon, making it impossible for him to turn over in bed for six weeks, owing to severe pain. Received medical treatment for a week or so. Gives a history of occasional attacks of severe weakness, one, especially, which occurred about five years ago, while he was on horseback; he attributes these attacks to indigestion; does not lose consciousness, or get dizzy. Has had diarrhœa for several years.

Upon admission to the hospital he was found much emaciated, weak, and with a pulse of 98 running up to 120 on walking across the room. Examination showed great enlargement of the spleen and slight enlargement of the liver. Blood examination normal. Operation performed July 26, 1906. Incision six inches long through the left rectus muscle, enlarged to seven inches. No adhesions were found, but the spleen could not be raised out of its bed. In attempting to do this, although I thought I was very careful, my fingers tore into the spleen suddenly, making a large ragged hole, which bled furiously. After quickly packing this hole with gauze I worked my fingers behind the spleen and could hear the air rushing in with a hissing sound. The spleen was then readily lifted from its bed, the pedicle grasped and clamped, and the organ removed. The pedicles were then sewed over with catgut, the clamps removed, the larger vessels separately tied, and the wound closed.

The patient made a good recovery. His diarrhœa ceased at once. There were two or three relapses, but these were easily controlled. He left the hospital four weeks after the operation, much improved in strength and general appearance. Several months later he was reported as being in good health.

Microscopical examination by Dr. Grasty and Dr. Prentiss showed increase of connective tissue and of Malignant bodies. I think the case was one of Banti's disease.

CASE V.—James A. R., white, male, æt. sixty-three, single, farmer, was admitted to George Washington University Hospital, September 8, 1906. Had "bilious" fever when twelve years old. No serious illness since then until last winter, when present illness began with severe pain in the umbilical region. Pain would come and go, and was a little worse after meals for one or two hours. Has lost twenty pounds. No nausea nor vomiting. Continued to work on the farm during the summer; but the pain grew worse and became localized in the left hypochondriac region. Bowels constipated at first. Of late has had diarrhœa. After admission to hospital it was found necessary to give him from 2 to 2½ grains of morphine sulphate a day to relieve his pain, which seemed to be intense. Physical examination showed the spleen to be enlarged to four or five times its normal size, very tender and painful. Other examination negative. Blood count showed 6,150,000 reds and 10,850 whites. No malarial or other organisms. No abnormal blood cells. Urine normal. Examination of stomach contents, after test meal, showed nothing abnormal. Examination of feces also negative.

September 27th. His spleen was removed without difficulty. Operation lasted thirty minutes, and patient left table in good condition; pulse 108. His pain and diarrhœa ceased at once. Diarrhœa afterward recurred, but was controllable. He improved greatly during the first month after operation, having no pain; eating and sleeping well, and walking about the ward. Pain then began in the umbilical region and grew worse until his death, two months after operation. His death was apparently due to some form of cachexia.

I turned the case over to Dr. E. C. Prentiss, who is making a specialty of stomach diseases. Dr. Prentiss became much interested in the case and made repeated and exhaustive examinations, but was unable to find any definite cause for his pain and exhaustion. He was given injections of trypsin for several days, but no reaction followed. Repeated blood counts showed temporary anæmia; 4,500,000 reds, five weeks after operation, being the lowest. Shortly before death the count was 5,600,000 reds; 10,400 whites; hæmoglobin, 100 per cent.

No autopsy was allowed; but at the time of operation the other abdominal organs were examined and no disease found. The spleen, which weighed two and a quarter pounds, appeared on section intensely red, and soft in the central portion. It was examined microscopically by Dr. Grasty and Dr. Prentiss, who pronounced it a malarial spleen.

1418 L STREET, N. W.

TYPHOID FEVER COMPLICATED BY INFILTRATION OF THE LARYNX AND ŒDEMA OF THE GLOTTIS.

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The mere mention of laryngeal involvement in connection with typhoid fever, by the various standard authors causes one to suppose, at least, that the condition is by no means common; although practically every author makes some mention of laryngitis as a complication of typhoid fever.

McBride (*Diseases of the Nose, Throat, and Ear*) states that the involvement of the larynx may complicate typhoid fever, and is characterized first by an infiltration of the tissues, which is liable to attack the surface of the arytenoids, and may progress until there is subsequent stenosis, and perichondritis. Should there be typhoid ulceration œdema may result. Sir Morell Mackenzie asserted that laryngeal catarrh is a common feature during the course of typhoid fever; and Grayson mentions that the larynx may be involved during the course of typhoid fever; while Coakley goes so far as to state that,—"The larynx in nearly always the seat of an acute laryngitis."

In laryngeal involvement complicating typhoid the lymphoid tissue of the larynx shows decided hypertrophy, and ulcers may be found upon the laryngeal surface of the epiglottis, aryepiglottic folds, posterior wall, and the vocal bands. The character, size, and depth of the ulcer may vary greatly; and in direct relation with such extension of ulceration, there is associated possibly abscess formation, and œdema. Coakley states that as a result of infiltration of the laryngeal tissues there may be paresis of the adductor muscles in

which cases hoarseness, and possibly aphonia may be present throughout the greater portion of convalescence.

H. B., age thirty-eight, admitted to my service at the Philadelphia Hospital, April 30, 1906, a machinist, born in England. His family, medical, and social history was negative. His general habits, while not of the best, were not of such character as would predispose to his present condition. He had complained for four or five days previous to his admission from cramplike pains in the abdomen, anorexia, nausea, weakness, vomiting, and constipation.

The condition of the patient was typical of mild typhoid, the temperature ranging between 101 and 103 degrees F., and his pulse between 105 and 120 per minute. Diarrhœa was not pronounced, although there were two or three liberal semiliquid movements daily. Widal serum reaction was positive.

The disease advanced without any complications until the fifth day, when a small area of consolidation was detected in the lower border of the right lung posteriorly, and at this time there were present over both lungs numerous râles suggestive of an associated bronchitis. Within a period of five or six days the lung condition subsided.

Twelve days after admission, seventeenth day of disease, the patient developed a peculiar croup-like cough, which caused him considerable discomfort. The temperature fell gradually and reached the normal by the twenty-third day. His cough was more or less paroxysmal, and had a peculiar metallic ring, and at each coughing there was present some evidence of dyspnoea.

Five weeks after admission the patient was walking about the room, taking soft diet and apparently improving, except for the peculiar metallic cough. He was suddenly seized (eight weeks after admission) with what was supposed to be a faint; and when my resident physician reached his side he was found to be markedly cyanosed, laboring for breath, and the respirations were noisy, and practically those of a child suffering from membranous croup. Dr. Loffer, upon examining the throat found that there was marked œdema of the glottis, and proceeded promptly to perform intubation, which, when accomplished, gave the patient immediate relief. I am further indebted to Dr. Loffer for extensive ward notes taken not only of this but practically all my patients during his services. Due to the great amount of mucus that collected in the tube it was found to be impracticable for this particular case, and while he was kept alive for twenty-four hours by wearing the tube, it was necessary to rid it of mucus every hour.

The following day tracheotomy was performed, which gave the patient relief. The patient remained in the hospital for a period of six weeks, and during this time was able to go about the wards, and gained several pounds in flesh. Repeated examinations of the throat showed a decided infiltration of the mucous membrane of the larynx, and a variable amount of œdema of the glottis. There were never any ulcers of the mucous surface of the throat, but it was suggested by the laryngologist that probably such ulceration had existed during the early stage of the fever. The patient was directed to close the tube in the trachea and to attempt to breathe through the nose and mouth at stated intervals. When discharged from the hospital the patient was able to breathe for several minutes through the nose, but he could not obtain sufficient air through the larynx when he was walking about the room; although while sitting the air that passed through the larynx appeared to be sufficient to oxygenate his tissues.

1531 SOUTH BROAD STREET.

HOW LONG SHALL THE PATIENT STAY IN BED AFTER ABDOMINAL SECTION?*

BY JAMES VANCE, M. D.,

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In the earlier days of surgery, when patients were driven to the operating table either by unendurable pain or the fear of death only, the question of how long they would have to stay in bed after operation was a very minor one. But now that they seek operation rather than endure any slight obstacle to health or even discomfort, the question of how long they must suffer the discomfort of staying in bed becomes to the patient a vital one. Even to anyone, the prospect of an operation and then three or four long weeks in bed is not at all a pleasant one.

The question naturally arises: Is the getting of the patient out of bed early only a question of comfort to the patient? I am strongly of the opinion that it is not. There are many advantages to be derived from the out of bed treatment of abdominal section. The personal comfort to the patient is greatly increased, the catheter is practically always avoided, and when sitting up they can pass the time agreeably by reading or writing. They eat their meals with a far greater relish than when in bed. Elimination by the bowels, kidneys, and skin are far better, and consequently digestion is greatly aided. With the ability of the intestine to digest comes appetite, strength, and confidence.

In the aged all of these advantages are greatly increased. In fact, while younger patients will do well in bed and better out, old patients will not do well at all in bed and getting them out of bed early becomes not a procedure of choice, but of necessity. Recumbency for any length of time embarrasses respiration and heart action at any age, but after sixty or sixty-five years of age this embarrassment is so great as to cause hypostatic pneumonia in the majority of patients. By sitting these patients up early the general improvement of metabolism gives to the patient that buoyancy of mental condition which is so very necessary to the successful treatment of the aged.

There are no disadvantages to the out of bed treatment, but there are certain dangers. The first and greatest of which is rupture of suture or ligature, causing secondary hæmorrhage or the escape of poisonous material into the peritonæum, as, for instance, the slipping of a ligature of an ovarian pedicle or the rupture of a sutured intestine.

In looking over my file of histories I find three cases in which the abdominal wound was ruptured; one on the eighth, one on the eleventh, and one on the twelfth day after operation. Though all these patients were confined to bed, I cite them here to show that danger of rupturing the wound, even as late as the twelfth day, is a real one, and that the wound is not strong at the end of a week (as many contend) because it is nicely healed. It is true that a wound

* Read before the El Paso-Big Springs Medical Association.

is perfectly healed at the end of a week, or even less time, but it is equally true that the young uniting cells have little tensile strength at that time, far too little to support the ordinary intra-abdominal pressure. Of these three cases of rupture of the abdominal wound two occurred in my own work and one I saw in the practice of another surgeon.

The first case of mine occurred six years ago in a man, thirty-five years of age, with a gunshot wound of the abdomen. The incision was made in the median line above the umbilicus and about four inches in length. Intraabdominal tension was very great at the time of closure with through and through silkworm gut sutures. The man made a very stormy convalescence. The sutures were removed on the eighth day from a wound dry and free from pus. The patient, though, was still very sick, and the same day of removal of stitches he got up, while delirious, and ruptured his wound from end to end and down to, but not through, the peritonæum. I tried to draw the wound together with adhesive plaster, but on account of extensive gapping could not do so. Secondary suture also failed. After dressing his wound every day for three months I sent him home with a ventral hernia, but otherwise well.

My second case was three years ago in a woman of fifty-six, with a beginning carcinoma of the cervix. The woman was always thin, but had usually had good health. She had recently lost some flesh, though she was not cachectic at time of operation. In doing an extensive panhysterectomy in order to be as thorough as possible in removal I found it necessary to make a five inch incision. I closed the wound in three layers after the ordinary method of a double strand of oo plain catgut in peritonæum and skin, and a double strand of oo chromic in the fascia. The patient made a perfectly easy recovery, and the dressing was not changed till the twelfth day, which is still my custom. The wound was perfect in every respect. A dressing of plain gauze held by three short adhesive strips and abdominal binder was applied. The dressing was done in the morning, and that afternoon I was called to the hospital by the nurse to see the patient. When I reached the bedside the dressings were in place, but saturated with blood. The patient stated that she had suddenly sneezed and felt the wound give away. Upon removing the dressings about half of the upper part of the wound was seen to be torn open through the peritonæum, and intestines protruded against the sterile dressings. The intestines were pushed back within the peritonæum by sterile instruments, and the wound was easily drawn together with adhesive plaster, and fresh dressings applied. There was never the slightest bit of trouble afterward, the patient recovering as though nothing had ever happened, the rent in the wound healing without suppuration, and two years afterward she had a perfect abdominal wall and a nice scar. A short time ago, a little over three years after operation, her family physician wrote me that she had gained twenty or twenty-five pounds of flesh, and that her health was perfect, with a good abdominal wall and no return of the carcinoma.

The third case, occurring in the practice of a very distinguished surgeon, was in a patient thirty-five years of age, from whom he had removed a small ovarian cyst; but in order to take it out whole he had made about a five inch incision, which was closed with through and through silkworm gut. The patient was in good condition at time of operation, and made a perfect recovery. The sutures were removed on the eighth day and the wound was perfect. All went well till the eleventh day, at which time the patient suffered from

indigestion, with considerable distention by gas. Though the distention was not enormous, the pressure was sufficiently great to tear the wound open from end to end through the peritonæum, so that the intestines protruded against the sterile dressings. The intestines were returned to the abdomen by sterile instruments and the wound was drawn together and held by adhesive plaster. An asafœtida enema relieved the patient of gas, and a liquid diet for a day or two gave no trouble. The patient went on to an uninterrupted recovery, the wound healing perfectly without suppuration.

Now, as to the question: Why did these recounted accidents happen? The answer is simple: In no one of the three cases reported were the dressings applied properly. They did not support the abdominal wall sufficiently firmly. There was some excuse in the first case, for the man was very sick at the time of removal of sutures, and in a stormy convalescence wound healing is never as rapid as where convalescence is smooth and easy. This is well exemplified by examining the wound post mortem when death has occurred four or five days, or even a week, after operation; little or no union will be found present. Especially is this true where the patient has done badly from operation to death.

It is unquestionably true that some patients' wounds heal more quickly and securely than others. Other things being equal, the greater the blood supply the quicker the healing. Numerous cases like those reported have occurred, and there are few surgeons of wide experience who have neither had nor seen such cases. But these three cases serve to show that union may not be strong enough to withstand the intraabdominal pressure of sneezing or coughing, even as late as the twelfth day. Therefore, great care must be exercised in applying the dressings securely when it is necessary to get the patient up early.

The out of bed treatment of abdominal section is by no means applicable to all cases. It is to be applied to suitable cases only, and judgment must be used in selecting such just as in every other phase of surgery or medicine. Holmes calls such cases "ideal cases," to which I would add cases of necessity which includes nearly all old patients. The "ideal cases" are those in which the incision is short, trauma slight, anæsthesia short, and little for Nature to do after the operation is over. The best example of this kind of cases is the interval operation for appendicitis. Here we have a short incision, short anæsthesia, and when the small stump of the appendix is inverted and covered with peritonæum, the trauma is practically *nil*, and very little is left for Nature to do.

The treatment has, however, a far wider scope than the simple ideal cases. All cases are suitable ones in which traumatism within the peritonæum is slight; in which Nature does not require rest; and above all the patient must not be sick. That the patient be not sick is of absolute importance, for no sick person, with or without traumatism, is a suitable one to be out of bed. It is not necessary, however, that the incision be short or that the anæsthesia be short, as is generally supposed. Of course, *ateris*

paribus, the shorter the incision and anæsthesia and the less the traumatism, the safer the out of bed treatment, and the quicker the patient returns to perfect health.

Those patients best kept in bed are: (a) All pelvic cases in which traumatism has been very great and the patient is much weakened by operation; (b) all cases of intestinal surgery in which healing depends to a large extent on absolute quiet of parts; (c) patients greatly emaciated and exhausted by disease prior to operation; (d) cases of profound, acute, or chronic anæmia; and (e) neurasthenics, no matter how light the operation. In a word, all patients in whom Nature requires rest and quiet should be bed patients.

The *sine qua non* of getting the patient up early is that the dressings be so applied that no matter what position the patient assumes, the dressings carry the whole stress of intraabdominal tension. This care must never be relaxed, but each day the dressings should be inspected to see that the support offered is perfect for two or three weeks, and then the patient may be permitted to use a snugly fitting abdominal supporter till the end of the sixth or eighth week, at which time it may be discarded without spreading of the scar. With dressings correctly applied it is perfectly safe for the patient to get up eight hours after operation to void urine if necessary, and thus avoid catheterization, with its constant danger of cystitis. The patient may get up in a chair the second day and even walk a little, if he so desires. Each day thereafter he sits up, lies down, or walks as he desires. Let the patient's inclination be your guide as to when to let him sit up. As long as he is sick he will not wish to get up, and as soon as his physical condition will permit he wants to sit up. As a rule, they do not want to sit up till the third day or forty-eight hours after operation.

In the last twelve patients suffering from appendicitis for whom I did appendectomy alone, five were emergency operations and seven interval. Two interval cases were never continuously in bed, getting up to urinate the same day as operation. The other five interval cases were in bed from two to five days. One emergency case, a servant girl of sixteen, with a gangrenous appendix, was up on the second day, went out of hospital on the fifth day, and walked home, five squares distant, carrying a fairly heavy suit case. The sun and foolish exertion made her sick and faint. I was telephoned for, but simply directed that she be put to bed. In an hour she was all right and got up to eat her dinner. Her walking was against orders, of course, and I cite the case to show how little danger there is where ordinary care is taken. In two other emergency cases the patients were up on the fifth and sixth days. One with an abscess of two ounces of pus was not up till the eleventh day and was out of the hospital the fourteenth. The average time in hospital was about one week. The shortest five days, the longest two weeks. All of these patients had short incisions; the pus case having a two and one half inch incision, the others from one and one half to one and three fourths inches.

Of course I have had patients who on account of evacuated abscesses have been in bed three weeks, or even longer.

In old people we are often obliged to get them out of bed, or at least prop them up in bed, before we would dare do so in choice cases. To show how well they may do, I report the following cases:

CASE I.—Mrs. A., referred to me by Dr. B. E. Lane, of Las Cruces, New Mexico. Patient, aged sixty, was emaciated to skin and bones by a forty pound ovarian cyst of three years' growth. Pulse, 120; temperature, 100° to 102°. Could sleep in sitting position only. Stomach would retain very little nourishment. Operation on August 9, 1906. It was found necessary to make a ten inch incision because a large portion of the cyst was fibrocystic, composed of numerous small, thick, walled locules, containing mucoid material, which would not run through the cannula. Closure was layer to layer with catgut and splint sutures of silkworm gut. Patient was propped up in bed right after operation and from time to time till the fifth day, when patient was allowed to sit in chair. She was too weak to walk till about the tenth day. Dressings were removed on ninth day and "stay" sutures removed. Wound was perfect and so continued till she went home on train, at the end of two and one half weeks. Since then Dr. Lane has written me that the wound is perfect, and patient well. Patient was never sick except slight sickness from ether and weakness.

CASE II.—The next case was Mrs. P., aged sixty-six, fairly well nourished, but had lost flesh during three months prior to operation on account of a fifteen pound ovarian cyst. She also suffered from a complete prolapse of uterus of some months' duration. The cervix uteri was beginning to ulcerate. The tumor, a multilocular ovarian cyst, was removed through a four inch incision on September 13, 1906, and the uterus was brought up, denuded, and stitched into the abdominal wound. The wound was closed with catgut and silk gut. She was propped up on pillows immediately after operation and suffered little from nausea. The next day she sat up in bed, and on the third day she sat up in chair to eat meals and walked a step or two from bed to chair. After that she was up all the time and went home on the seventh day. I dressed the wound on tenth day and found it perfect. Recovery has been perfect and the uterus has remained up *in situ*, and has not given the slightest trouble.

CASE III.—The third case was Mrs. B., aged seventy-eight, rather fat, with a large, fat, pendulous abdomen. For weeks previous she was seized with severe pain in abdomen. Her physician was called in and he discovered a tumor in the abdomen. As the tumor enlarged rapidly he advised her to come here for operation. Examination showed a freely movable tumor high up in the abdomen, about the size of a man's head. Lungs, kidneys, and heart were normal. In spite of patient's great age I decided to operate because tumor was freely movable and consequently probably easy to remove. The diagnosis of probable ovarian cyst was made, though the tumor moved freely over the entire abdomen. The abdomen was opened on October 15, 1906, and a cyst presented itself. The abdominal wall was so thick that I was obliged to make a five inch incision to give room to pack off the peritonæum with gauze pads. The cyst proved to be ovarian with a long pedicle from the left side. The contents were black from disintegrated blood, and a large clot at site of ruptured bloodvessel in tumor wall. It is interesting to note that this ruptured vessel in the tumor wall was the probable cause of the attack of severe pain of patient the month previous at the time the tumor was

discovered. This patient was propped up in bed immediately after going to bed from operation, and the following day also. The day after she sat up in a chair and remained up thereafter. The wound was dressed on the tenth day and found perfect. The patient was never sick for a minute, even from the ether. Recovery was easy and perfect. Patient went home—a long railway trip—at the end of the third week, with a perfect wound and in excellent condition.

The anæsthetic for these three cases was ether, given most excellently by Dr. J. W. Cathcart, of this city.

CASE IV.—The fourth case was Mr. O., aged eighty, upon whom I did a right inguinal herniotomy on November 8th. Chloroform anæsthesia was administered by Dr. Hugh S. White and perfectly taken, though the urine was alkaline and a dirty white foam precipitated earthy phosphates. Patient had a prostectomy done two years ago, very successfully performed by the late Dr. Mellish, of this city. This patient could not lie down flat, even to take the anæsthetic, on account of embarrassed respiration. He was put to bed, propped up on pillows, immediately after operation, and the next day got up in a chair. He voided urine from the first without any difficulty. Has never been sick a minute, even from the anæsthetic, since operation, neither has he given me one minute's anxiety. On the tenth day the dressings were changed, and the wound found perfect. It has healed just as perfectly as though he were forty years younger and kept in bed. It is still too soon to say whether or not the hernia is cured, but I shall be very much disappointed if he does not get a permanent cure.

This case does not properly belong here, but the same principles are involved as in section, and is here reported to show how nicely the aged do when not confined to bed.

In no case of my experience—comprising some fifty abdominal sections—has there been the slightest trouble from getting the patient out of bed early. But, in conclusion, permit me to advise conservatism in a careful selection of cases. No risks should be run simply to get the patient up early. Accidents thereby encountered are too serious and far too great a price to pay for what is, in the majority of cases, the comparatively slight advantage of getting up early.

302-3-4 TRUST BUILDING.

SPLANCHNOPTOSIS FROM THE STANDPOINT OF THE PHYSICIAN.*

By KATE CAMPBELL MEAD, M. D.,
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The close relation of all the nerves of the sympathetic system with one another is a doctrine which physiologists have long taught (1). All anatomical plates of the sympathetic system show so clearly the connection between the nerves of the uterus and stomach, for example, that one is astonished that there is not more vomiting during pregnancy or sick headache during menstruation, for whether or not toxines cause the vomiting, the nerves transmit the impulses. Chronic nephritis causes chronic stomach symptoms, ptosis of the kidney causes headache, ovarian tumors are associated with indigestion, amenorrhœa and anorexia or flatulency are frequently

found together. It is true that there undoubtedly are purely nervous dyspepsias originating in the digestive organs, unassociated with pelvic or abdominal lesions, and there are reflex dyspepsias which come from above the diaphragm as well as below, but it is well to consider all possible causes for chronic dyspepsias, whether gastric or intestinal, for it may be found that such a simple remedy as supporting a heavy abdomen will cure what no medicine has been able to do. It has been maintained that a woman's pelvic organs may be misplaced and bound by adhesions without causing the nervous reflex symptoms assigned to them by gynecological specialists. More cautious writers have limited reflex symptoms to adhesions and exudates in the pelvis, but deny any secondary ailment to mere displacements of the uterus or its annexa. From a study of 3,000 cases, Waite (2) concludes that a mobile uterus without any inflammatory complications may produce no morbid symptoms, whether it be anteverted or retroverted. If, however, the organs are not freely movable it is because of inflammation in the uterus or its annexa, and she believes it is this inflammation which causes the symptoms and results in fixation of the uterus or its annexa. But we have all of us known cases of simple prolapsus uteri which have been the sole discoverable cause of many nervous reflex symptoms. No inflammation past or present is found, but the mere dragging on the pelvic supports, nerves, muscles, and bloodvessels must cause a reaction in the spinal system. Moreover, we have known many cases of ventral fixation or suspension of the uterus where one pathological condition was substituted for another with complete obliteration of all the old symptoms, and no new set superimposed by the new adhesions, and we have found many cases of simple retroversion, noninflammatory, which have been cured by replacement and proper pessaries, following which a complete subsidence of the nervous symptoms has taken place without any other treatment of the nervous system. The following case of visceral ptosis, uncomplicated by adhesions, is an example:

F. S., age twenty-one, is a nervous wreck, suffering with hysterical vomiting and attacks of violent belching of gas. She has been treated for two years with nerve tonics and digestives, is anæmic and debilitated.

Present Condition: Heart and lungs fairly normal, spine sensitive, stomach dilated, left kidney on level with umbilicus, uterus retroverted, bowels full of gas and constipated.

Treatment: A Hodge-Smith pessary and later an abdominal supporter. A fall from a bicycle had caused the ptoses, and it is probable that without the correction of these noncomplicated malpositions of kidney and uterus, the patient would have been a nervous wreck for life.

It is unreasonable to doubt that damage must be done if any organ of the body either becomes loosened from its normal position and strains its ligaments, or rests upon other organs, or is fastened by adhesions whether surgical or nonsurgical to its own nest. Natural supports should be restored as far as possible by surgical or nonsurgical means, according to the demands of each

* Read at the semiannual meeting of the Middlesex County Medical Society, October, 1906.

case; in many cases an abdominal supporter and a perfectly fitting pessary will act as a substitute for relaxed abdominal walls, flabby intestinal muscles, and torn perinæum (3). I have seen much pain and nervousness from a badly repaired perinæum, but none from scores of well adjusted pessaries, and much discomfort and real invalidism from some cleverly done operations for "floating kidneys," but little, if any, from all the abdominal supporters that were even approximately fitted to individual abdomens. That there are cases of ptosis of uterus and ptosis of kidney which can only be relieved by surgical means no one will deny, and for them we must turn to surgery as a last resort.

It is nearly twenty years since Glénard (4) first described splanchnoptosis (*Bulletin de l'Académie de médecine*, Paris, lxx, Nos. 5 and 6). He considered that one third of all the dyspepsias in women were caused by enteroptosis, and that

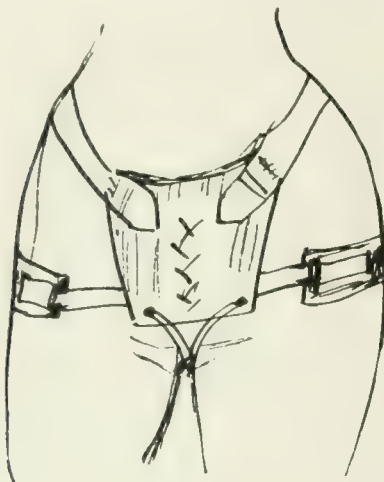


FIG. 3.—Vermehren's Bandage; Front View.

80 per cent. of all the patients suffering from enteroptosis were women. The spine in such cases is always found abnormally sensitive from the fourth dorsal vertebra down, although frequently in chronic cases the entire spine is hyperæsthetic, the bloodvessels become stretched and lose their tone, the muscles lose elasticity and strength, the fat is absorbed, to say nothing of the general interference with the nervous system (5).

When one is in doubt as to whether a patient has splanchnoptosis after a careful physical examination has been made, he may feed the patient with test meals,¹ to ascertain the quickness of digestion, after the rules of Ewald (6), Boas, etc., or he may refer her to some skillful röntgenographer for an accurate picture of her abdominal organs, or he may rely in a measure on her symptoms which are not easily mistaken, and treat her for enteroptosis, a procedure which can cause little or no harm. Rose and Kemp (7) have suggested various methods for diagnosing the position of the stomach: by the radiodiaphane, by the fluoroscope, the gastroduaphane, the stomach whistle, and by the older methods of percussion,

inflation, etc. They would suspect gastroptosis in any case where the thorax was long and narrow, or funnel shaped, or wherever they found a tenth rib, or in phthisical patients, or in frail men or women whose daily occupation was standing, or generally in many cases which gave symptoms of nervous dyspepsia, for to some authors these symptoms mean nothing but a ptosis of the stomach or of some abdominal organ. There may be a ptosis of the stomach without nervous dyspepsia because of compensatory hypertrophy, as there may be a compensatory hypertrophy for a dilated heart; and there may or may not be a floating tenth rib, which is customary in these neurasthenic cases, or there may be no neurasthenia for many years. Achilles Rose suggests that nervous dyspepsia may be caused by gastroptosis alone. Possibly so, but it would seem as if a simple dilatation or even ptosis of the stomach would cause a simple dyspepsia which might perhaps cause nervous symptoms, but could hardly be called nervous dyspepsia.

Ewald (6) attributes dilatation of the stomach to mechanical stenosis of the pylorus, or to weakness of the expulsive forces of the muscles of the stomach. These muscles of the stomach have become stretched because of Escherich's "alkaline fermentation," which causes distention with offensive gases and regurgitation of sour and rancid masses due to carbohydrate fermentation and albuminoid putrefaction. Catarrh of the stomach also leads to overdistention of the organ with food, so that the relation between the hydrochloric acid and the bacteria in the stomach becomes stained, and fermentation results. A dilated stomach may reach below the umbilicus. In some cases surgeons have taken "pleats" or "gathers" in these dilated stomachs to reduce them to their normal size and position. In some other cases physicians have practised lavage, which acts as massage inside the stomach, and ordered kneading, and cold douching, and mustard girdling, to the external abdominal walls, in order to reduce the size of the organ.

If a dilated or fallen stomach is often found, the same is true of the other abdominal organs and intestines. Nothnagel (8) devotes ten pages of his volume, on *Diseases of the Intestines and Peritoneum*, to anomalies in position and form of the intestines. He reviews all the work done on the subject since Glénard's work in 1885, even showing that prolapse of the mesentery and small intestines is necessary before hernia could exist, thus adding to our already long list of ptoses. He thinks that dropping of the liver and spleen are rarely noted except by the surgeon in operating for something else, and he closes this chapter by saying "Complete cure is impossible, only more or less improvement is attainable, and even this is sooner or later nullified by a recurrence" (page 342). Nothnagel's verdict may be doubted, but since prevention is worth pounds of cure, we must look more closely for the causes of these ptoses. There is no doubt that woman's clothing as prescribed by fashion is responsible for some of the enteroptosis from which she suffers. The

¹ A test meal with bismuth should take no longer than seven hours. (Boas.)

modern corset moulds the girlish figure most unnaturally in order to give her a waist, and in so doing interferes with the development of the thorax during the years of active growth. Lange, of Munich (*Medical Record*, June 16, 1906), says that garments should cling closely enough to the trunk to cause them to be to a considerable extent supported by friction. Just what he means I do not know, but at any rate, if one adds to the pressure of the corset on the soft cartilages, a pressure which may leave ineffaceable creases on the delicate flesh, the weight of heavy skirts often wet around the bottom, it is small wonder that the soft abdominal organs sink beneath the load. No growing boy would stand such clothing. Even in the days of heavy armor there could have been no compression of the soldier's body, for the weight of the leg armor must have come on the hips, and complete suits of armor were only for use on horseback.

A woman need not wear a Mother Hubbard wrapper in order to be hygienic, nor need she wear tight clothing in order to look stylish, but there are comfortably fitting waists to which her skirts may be fastened in front and behind and which cause the weight of her garments to come upon her shoulders and hip bones. Some authors attribute gastropotosis or splanchnoptosis to high heeled shoes, as well as to tight lacing; others go so far as to say that until a girl is fifteen years old no dress should be worn which does not hang entirely from the shoulders. Langerhans, on the other hand, is quoted as denying that there are any deleterious effects from corsets, and assigns nervous dyspepsia as a cause and not a result of enteroptosis, and Schwerdt agrees with him that the essence of the whole thing is a chronic fatigue of the nervous system with baneful results on every organ of the body, including general relaxation of muscles and supports throughout the system. Tight lacing is thought to be a cause of hepatoptosis and of gallstones, as well as of carcinoma and cirrhosis of the liver (see Rolleston 9). Tight lacing is also the alleged cause of Riedel's lobes or tongue-like spurs of liver often found in women. Both the liver and spleen are normally "floating" bodies, supported by the mutual pressure of the stomach and bowels and anchored by the peritonæum. Glénard (10) and others have estimated that 20 per cent. of patients suffering from diseases of nutrition have some degree of hepatoptosis, most of these being women. Many of these patients have no real prolapse of the liver, but merely Riedel's tongue-like lobes. If the ligaments which anchor the liver to the diaphragm are congenitally weak or are weakened from lack of nourishment and are then subjected to strains or stretching, the entire liver may be found to have fallen into the abdominal cavity to a greater or lesser degree, according to the causes. It is possible that tight lacing so weakens the abdominal muscles as to increase the conditions favorable to hepatoptosis, in that it diminishes intraabdominal pressure. The symptoms of hepatoptosis are a steady feeling of discomfort in the right side and distress under the right scapula and behind the sternum,

or the pain of cholecystitis or cholelithiasis, or of hepatic cirrhosis (including ascites), as well as a chronic cough and some hysteria.

The symptoms of visceral ptosis in general depend upon the degree of constitutional weakness and the amount of organic derangement. The patient is always weary, and most comfortable lying down with loosened clothing on account of the gas in the stomach or bowels, or she has acid eructations, or heart burn, and generally a white tongue, or she may have acute attacks of colic from the ptosis of a kidney, especially if a ureter becomes kinked. Some of these patients may need to be operated upon for relief of the ptosis, and new operations are constantly being devised by skillful and ingenious surgeons to reestablish normal conditions as far as possible. The ease and security with which surgical operations can be performed in these days lead many practitioners to feel that in surgery lies the quickest cure for many abdominal ailments. On the contrary, Stimson (11) cites the undue importance now given to leucocytosis and arterial tension, and he calls to mind the fact that divided tissues may never regain their normal functional power, and that with the best of antiseptic strict asepsis is not possible. It may be added that a normal appendix is probably a useful appendix, that the original pylorus is better than any artificial gastroenterostomy, that a kidney with a whole capsule is safer from attacks than one whose capsule has been made into ribbons, and that a uterus with its own ligaments is more desirable than one suspended by peritoneal adhesions, that broad

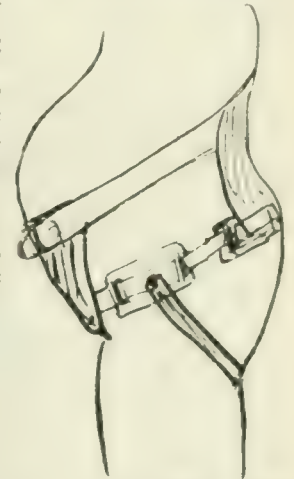


FIG. 2.—Vermeiren's Bandage; Side View.

ligaments, straight, are better than if folded or incised. If, however, palliative measures cannot make a complete cessation of all abdominal symptoms, we must be thankful that we have a powerful weapon in surgery, and that not an organ or tissue of the body is now contraband to the surgeon. DaCosta (12) has recently published an account of his operation for movable kidney which seems to have advantages over older methods.

Thorkild Rovsing (13), of Copenhagen, has (in August, 1906) published a monograph on enteroptosis or splanchnoptosis, which covers the entire field most ably. He reviews the various causes ascribed to splanchnoptosis by other writers; he believes that the disturbance of nutrition is an effect and not a cause; that a few cases may have inherited a tendency to general debility and looseness of ligaments; that corsets and tight bands may account for some cases; and that the theory of lack of intraabdominal pressure due to relaxed abdominal walls is perhaps satisfactory for the greatest number of cases. According to Rovsing, the chief cause is then this: The

bowels in a healthy individual act as air cushions to support the kidneys, which are pressed down with every respiratory movement of the diaphragm. Let these balloons lose their shape and resiliency and the kidneys sag, especially in women who have borne children and have flabby abdominal walls. In the case of virgins with strong abdominal muscles, Rovsing thinks there must be a combination of all the causes to account for ptoses which are often prolific in symptoms. There may be a nephroptosis alone, and less often a combination of other ptoses. Many of these patients have been treated for cystitis or ante-flexion of the uterus, both of which troubles may be present, but which are not the original cause. Many of these patients complain of dyspepsia, obstipation, symptoms of colitis, pain in the right hypochondrium, pains simulating gallstones, all of which symptoms may be caused by a wandering kidney. Many a young girl suffers from dysmenorrhœa so intensely as to submit to castration, when a floating kidney was perhaps the primary cause of the pain; and in three of Rovsing's cases a nephropexy cured a long standing pain

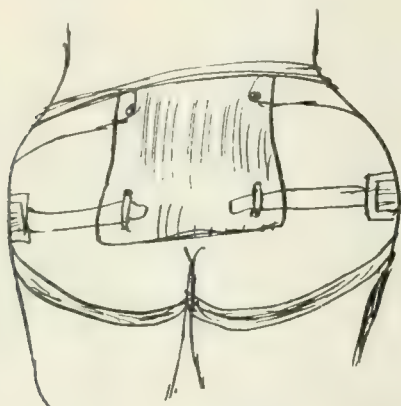


FIG. 1.—Vermehren's Bandage; Back View.

for which castration had been vainly performed some time before. He suggests that patients with these complex symptoms should be examined standing, rather than lying down, and if the kidney is found to be in its normal place, an examination of the stomach and other organs should be made.

The chief symptoms of gastropptosis are obstipation, with pain in left hypogastrium; the patients are tired and thin and have no appetite, they have symptoms sometimes falsely diagnosed as colitis or appendicitis, or ulcer of the stomach, or carcinoma of the bowel. A simple test in such cases would be the ease with which rich food is digested in small quantity, for it is often better borne than milk and water in large quantity. The objective symptoms must all be obtained, and if there is still a doubt an exploratory laparotomy may be made. The medical treatment seems to Rovsing to be of doubtful value, although worth trying first. He advises Vermehren's bandage as bringing pressure to bear from the right angles.

Sixteen per cent. of Rovsing's cases of renal ptosis were complicated with gastropptosis, in nine of

which the previous gastric symptoms had been so marked that he performed gastropexy at the same time as the nephropexy, and in one case he did a hepatoxexy. If there is a ptosis of the duodenum and colon, he finds that the probable primary cause is from the gastropptosis, and that in correcting this, the others are also permanently replaced. Rovsing's gastropexy consists in slinging the stomach by three silk threads, through the lesser curvature, to the abdominal wall, having scarified the serous surface of the stomach which should adhere to the peritonæum in order to form a permanent support to the stomach. He has had no failure in the seventy-five cases on which he has operated to date, whereas in some other operations for shortening the ligaments of the stomach, the thin supports stretch again and the gastropptosis returns; or where the pyloric and cardiac ends of the stomach are both fastened to the abdominal wall, there is later serious difficulty with the motility of the stomach, or where the great vessels in the ligaments or stomach wall become folded, there must result disturbance of circulation, more or less serious. While other surgeons may maintain that in many cases a gastroenterostomy is necessary for the relief of the patient's symptoms, Rovsing holds that this is a much more dangerous and less satisfactory operation and should be performed only in case of stricture of the pylorus.

Rovsing himself has improved upon all the earlier operations for prolapsed kidney, and has had only two deaths out of one hundred cases, both of these being due to complications in some other part of the body. The after results are perfect from the patient's point of view, as well as from that of the operator. Rovsing performed hepatoxexy in twenty-two out of his seventy-five cases by fastening the rim of the liver to the diaphragm with catgut sutures after scarifying the serous surface of the liver in order to obtain adhesions. He had four cases in which the left lobe of the liver reached to the umbilicus, and he was obliged to remove a portion of the liver itself by the angiotribe in order to lift the stomach. His most difficult cases were those in which the thorax was deformed and little room was found for the replacement of any organ. Many of Rovsing's patients had been suffering from symptoms of pain in the abdomen and constipation for twenty or thirty years, having been treated for every sort of a supposed ailment, including ulcer and carcinoma of the stomach. All these patients received immediate relief from their symptoms after gastropexy was performed, the pain and constipation having vanished like "dew before the sun." Not one of the seventy-five patients was operated upon until all medical treatment had been given, and out of this number there were only two deaths, both due to strangulation of the ilium or duodenum from peritoneal adhesions. Rovsing closes this most comprehensive article with the following advice: "Whenever you have a case of ulcer of the bowels or colitis, which does not yield to rational therapy, your diagnosis must be gastropptosis. This sounds paradoxical and is not exactly correct, but if I say, in such cases you must think of gas-

troptosis and make an exploration for it, I do not say too much."

In undertaking a cure of such a patient without surgery, all of the organs must be taken into consideration. The symptoms must be relieved as far as possible by remedies which prevent fermentation of the food. The diet must be very limited in fats, starches, and sugars. The food must be thoroughly chewed, and the intervals between meals regular. Gymnastics should begin simply, but should always include the most careful respiratory exercises, especially those which emphasize abdominal breathing, and other movements for the development of the muscles of the trunk. Taylor's (5) treatment for visceral ptosis is rest in bed, frequent knee chest position, massage to the back and abdomen, and respiratory exercises followed by mild out of door games. An abdominal bandage which is made of saddle girthing gives Morris Longstreth, of Philadelphia, the best results; this may be fastened to the corset (if the corset is necessary), and drawn on over the hips before the patient rises in the morning. Abdominal manipulations which consist of various movements to lift the organs of the abdomen from their prolapsed position must be done several times a week by the physician himself. After the fitting of a good supporter, whether of elastic webbing or adhesive plaster, there should be prescribed enforced feeding in order to accumulate fat for padding the kidneys and propping the intestines, ten to fourteen hours of rest in bed out of the twenty-four, gentle massage to increase the tone of the general circulation, electricity for its nerve quieting effect, an abundance of fresh air, generally some form of iron, and occasionally a mild laxative. Sometimes in these cases, olive oil or an emulsion of cod liver oil can be taken, but more often oils are not borne by the digestive glands, nor is cream found to be desirable. Eggs, raw and cooked, at the rate of six to twelve a day, form a valuable addition to the diet. Buttermilk is generally well borne, as are kumyss and carbonated drinks. The addition of Vichy water to milk often aids in digesting the milk, and some of the prepared foods add materially to the nourishment. Starchy foods, grains, desserts containing sugar or "shortning," are not well borne and cannot be allowed.

Another method of treatment of atonia gastrica which Rose and Kemp (*loc. cit.*) advise is by a tightly fitting belt of adhesive plaster, seven inches wide, and cut to fit the abdomen. This belt should be applied in a recumbent or Trendelenburg position, or after massage and lifting of the abdominal organs. The results have been remarkable on account of the shortness of time required to stop the reflex vomiting or other discomfort. These adhesive belts may be worn a month at a time, but possibly after the first month an elastic bandage may be substituted. In patients who have a flat abdomen or where the spinal muscles are sensitive, the adhesive belt is more comfortable than the elastic bandage, especially if to the belt are added several strips of plaster along the spine. Moreover there are pa-

tients with loose pendulous abdomens, where, owing to lack of vitality and to hard work after childbirth the organs of the body all seem to be drawn lower and lower into the pelvis; and for such cases this adhesive belt is the only belt which can be worn, all other belts either riding up, or chafing, or becoming easily stretched. These adhesive bandages may be applied at home, and if good zinc oxide plaster is used there is very little irritation of the skin under them.

Generally, however, it is better for the physician to apply the bandage in order to watch the case, or to determine when an elastic bandage can be worn, and how it shall be worn. An elastic bandage which merely surrounds an abdomen may do harm to a floating kidney or prolapsed duodenum. It must be so adjusted that it suspends the abdomen from the spine, its threads passing obliquely from the symphysis toward the waist line. I have not found these adhesive bandages comfortable in cases of ptosis of a kidney accompanied with nocturnal attacks of belching. The kidney was held in place perfectly by the lifted intestines, but nevertheless the belt gave a feeling of suffocation and seemed to bring on the attack of inflation earlier than usual, so that the patient would tear off the bandage and leave sore spots on the skin. For these patients, a silk abdominal supporter is preferred, which is to be worn during the day only. In one such case the patient could tolerate merely a criss-crossed, one sided bandage to lift the intestines and kidney of that side.

As gastroptosis and mucous colic are often associated, so the adhesive belt is sometimes a simple and efficient remedy for both. In the hands of some observers, quoted by Rose, this belt was an aid in the cure of gastric ulcer and of cholelithiasis. It also cured a chronic diarrhoea in one of my patients who had a heavy fat abdomen. The patient was a multipara who had suffered for fifteen years with chronic diarrhoea, and now she has worn an elastic belt for two years with no return of the trouble. The adhesive belt is the only thing of the kind which can be used in young unmarried women with flat abdomens, and in two cases of migraine and dysmenorrhoea with obstinate constipation the patients were greatly benefited by the adhesive bandage. In these patients the ptoses were so slight as to make the diagnosis exceedingly doubtful, but the results were very satisfactory. For both of these patients, who were working girls, I also inserted Hodge or Smith pessaries because of simple retroversion of the uterus. For several years I have been in the habit of supporting pendulous abdomens in multiparæ by stout elastic bandages. I have used various kinds of belts, made by various manufacturers, in silk, linen, or Egyptian thread, reenforced by leather straps or whalebone, and varying in price from \$1.75 to \$5.00. The cheapest belts are the most simple, but they need frequent renewal.

Since studying cases of gastric and intestinal dyspepsia more carefully, I have been finding ptosis of either kidney or stomach or liver or bowel in most of the cases suffering from retro-

version of the uterus, which goes to prove the hypothesis that enteroptosis is caused by a failure of the supporting ligaments, and that there is seldom found to be simply a ptosis of one organ; therefore, whether the cause is hereditary, constitutional, or due to anæmia, overwork, careless dressing, constipation, or what not, the interesting conclusion is that most of our chronic patients suffer from this condition in one or all of their abdominal organs.

From my records of the past year I find about forty cases of splanchnoptosis for which I have used an adhesive belt or elastic bandage, with good results. The adhesive belts were generally applied once a month for two or three months and sometimes followed by the elastic belts. Twenty of these patients had retroverted uteri, some simple, some complicated, for which they wore pessaries or tampons during the time in which they were wearing the abdominal supporters. In most of these patients no uterine support was needed after six months, although they continued to take the knee chest position four times a day, and proper gymnastics night and morning. In many of the patients the constipation was entirely cured. In three cases of irritable bladder the bandage, plus lithia water as a beverage, and one injection of a solution of a silver preparation into the bladder, have quieted all the symptoms of cystitis. Two of my cases were in men sent by their wives to be treated for indigestion. One was a conductor on the railroad who had been treated in a hospital for ulcer of the stomach, and who evidently also had gallstones. He was very thin, yellow hued, and could eat little or nothing without pain. His blood showed only 60 per cent. of red corpuscles and 50 per cent. of hæmoglobin. His stomach reached to the umbilicus, and his liver was enlarged. With a nearly fat free diet, a sodium sulphate and phosphate mineral water, and one of the organic iron preparations, plus a supporting belt, he gained forty pounds in three months. The other man was a neurasthenic minister who had been treated for chronic gastritis for years. His stomach extended below the umbilicus. The adhesive belts were worn for two months and gave him entire relief from pain. He took a simple organic iron tonic and occasionally a tablet of soda and rhubarb. Among these forty cases the following are of most interest:

CASE I.—Miss L., age twenty-four; pain in sacrum and abdomen, nervous dyspepsia (lived on ice cream); uterus retroverted; abdomen bulging; stomach and right kidney on line with umbilicus. Treatment: Massage to abdomen with lifting of organs, Brandt massage, and a retroversion pessary to the uterus. Rest in bed and an increasing diet, followed after two weeks by an abdominal supporter and a spinal brace to correct a scoliosis. Patient was after two months able to digest any ordinary food, and felt perfectly well.

CASE II.—Mrs. L., age forty-five; multiparæ; abdomen fat and pendulous; has cystocele and rectocele, complains of gas in bowels and frequent urination. Treatment consisted in a few applications of silver vitelline (argyrol) to the bladder walls, and a strong abdominal supporter. Results perfectly satisfactory.

CASE III.—Miss M., age thirty-five, a typical neurasthenic. Has had hysterical manifestations since

puberty, is anæmic, has all sorts of dyspepsia, spine very sensitive, head throbs, has amenorrhœa, is constipated. Her stomach and both kidneys reach to the level of the umbilicus. Uterus and ovaries prolapsed. Adhesive bandage around abdomen and adhesive strips along the spine have made a marked improvement in the case within two months. Case still under treatment.

CASE IV.—Mrs. P., age thirty-three; multipara. Complained of girdle pains, of a floating feeling, of dizziness, pain in top and back of head, gas in bowels and mucus in movements, a sore spot under right breast, etc. She is of loose build, has general splanchnoptosis, and a retroverted uterus with chronic cellulitis. Treatment consisted in Brandt massage to the uterus, a supporting elastic bandage to the abdomen, gymnastics, and general tonics. Is now apparently well.

CASE V.—Mrs. R., age twenty-six. After a hard confinement returned to work too soon and suffered from prolapse of uterus and of left kidney, obstipation, and continual headache. Treatment, a pessary and an adhesive bandage, which relieved all her symptoms at once.

CASE VI.—Mrs. P., age thirty-five. Symptoms of general debility and indigestion, anæmia, sleeplessness. Has been operated upon for torn perinæum, torn cervix uteri, and endometritis, without any improvement in her symptoms. Both kidneys could be palpated and were easily replaced. A belt of adhesive plaster was applied, and she was put to bed on a fattening diet. Steady improvement.

In some of these patients the constipation was relieved by the use of rectal dilators faithfully used. In many patients I used the "vibratile" on the spine and over the colon; in some, intra-rectal bipolar galvanism; in others, general faradism to the abdominal muscles. The most useful medicines were sodium phosphate and strychnine arsenate. In only two of these patients could tight lacing have been responsible for the splanchnoptosis, and in both of these cases the patients were multiparæ who had had hard labors and heavy housework following confinement. In twelve of these patients there may have been a congenital predisposition to weak ligaments and loosened organs. In three young women, hysterical vomiting was the prominent symptom. In six middle aged women, the most distressing attacks of abdominal colic accompanied by noisy belching of gas came on at bedtime. Six complained chiefly of "dizzy spells," and two described symptoms of gallstone colic. Ten complained of pain in the back of the head. Four had cystitis with the usual symptoms plus intestinal indigestion. Seven of these patients were multiparæ who had passed the climacteric and had grown very heavy; their abdominal walls were so thick and fat that a good diagnosis could not be made, but from the symptoms of indigestion and constipation it was thought safe to strap up their abdomens, and the results justified the means. Some of my cases had been heroically treated by osteopathy without any good results. Two had been relieved of gallstones by good surgeons and may have acquired some splanchnoptosis later. One was later operated upon in New York to the extent of two nephropexies, and a hysteropexy. Several of the cases of dilated stomach were benefited by lavage.

The conclusion to be drawn from these cases seems to be that in diagnosing women's chronic diseases, it is advisable always to examine for splanchnoptosis and to use some form of supporting belt to the abdomen wherever there is the least indication of need for such a support, and to turn to surgery only as a last resort after hygiene, diet, massage, electricity, and medical treatment have proved inefficient.

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165 BROAD STREET.

A CONSIDERATION OF SOME COMMON FALLACIES IN THE DIAGNOSIS OF DISEASES OF CHILDHOOD.

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The errors so frequently made by the general practitioner in the treatment of children can be classified as being due: First, to a lack of knowledge of the physiology of childhood; second, to carelessness in examination; and, third, to lack of foresight. I hope my motives will not be misconstrued as maligning, for the sole object of my article is to enumerate the errors as I see them made. These being days of specialism, no one of us can be expected to shine in all the branches of medicine.

The physiology of childhood is sadly neglected (and herein lies the attainment of success or failure in diagnosis) even by physicians of good repute and learning, men in whose hands an adult would fare well. Almost every organ, every function, is so apart in the child from the adult, that we are forced to lay aside our "adult learning" when we are confronted with the administration of the baby. I can best elucidate the purport of this paper by enumerating certain conditions and diseases that I find are oftenest overlooked or misinterpreted. But the essence of this paper is mainly to criticize the fallacies in diagnosis, which the general practitioner is wont to make, just as I am confronted with them. For, after all, the general practitioner is the one in whose hands rests the care of the children of the family.

Malformations.—(The malformations of the brain

and heart I will consider under the diseases of these organs). Malformations of the genitals most frequently overlooked are (a) adherent prepuce in the female, (b) phimosis in the male, both being frequent incitants of convulsions, chorea, epilepsy, diarrhœa, and many of the nervous irritabilities of childhood. They may also be factors in causing an obstruction to the flow of urine, balanitis, and infection; hernia occasioned by straining, prolapsus ani, and hydrœcele from pressure on the spermatic vessels; priapism indirectly caused by itching, and consequent masturbation. I purposely have wandered from the strict confines of my article, because I would like to convey to the skeptic the weight of these fallacies. (c) Hypospadias and epispadias. (d) Undescended testicles. The testicles as they lie in the inguinal canal are often mistaken for enlarged glands.

Mouth.—The congenital variety of cleft palate is sometimes mistaken for the cleft due to hereditary lues.

Diseases of Nutrition.—Rickets. I find that the practitioner is usually alert to the importance of bearing this disease in mind, in formulating the whys and wherefores of a maldeveloped infant. And yet rickets is frequently overlooked in the milder or in the early cases. I think physicians are rather apt to err in the other direction. That is, to attach the diagnosis of rickets to other affections in which there presents a large spleen or liver; or in cases where faulty nutrition is a concomitant of some other deep-rooted disease. Rickets is often confounded with cretinism, especially where there is delayed dentition. The muscular weakness in rickets is sometimes mistaken for true paralysis. Lastly, rickets is occasionally confounded with lues. Scurvy. Holt states that in four fifths of the cases which have come to his notice, rheumatism has been the diagnosis. It has been mistaken for poliomyelitis, spinal disease, and malignant disease.

Diseases of the Digestive System.—Mouth. Sprue is most frequently mistaken for curds of milk deposited on the mucous membrane. I have seen it mistaken for diphtheria in a case where the thrush was located on the tonsils and pharynx. Pharynx. It behooves me to say after careful consideration that of all the pathological states in childhood, the most frequently overlooked is retropharyngeal abscess. Of course, only a tentative diagnosis can be made until a digital examination is resorted to. I find that this procedure is sadly neglected or almost unknown. This affection is usually mistaken for tonsillitis, or in cases where there is severe dyspnœa a diagnosis of laryngeal stenosis is made. Adenoids. I find that physicians display a propensity toward designating all abnormalities of childhood as being sequacious or attendant upon the existence of adenoid vegetation in the pharynx. I cannot say that this accommodative is in any way far fetched, for we are all aware of the baneful influence of adenoids in the child, and if the physician condescends to attribute so many shortcomings in the child to adenoids, we must congratulate him on his foresight. Tonsils. Herein lies a source of great error in diagnosis. There are some varieties of tonsillar infection almost entirely ignored or misunderstood. The ulceromem-

branous tonsillitis of Vincent is as yet almost unknown to the general practitioner. It is a specific form of tonsillitis, and can be diagnosed only by bacteriological means. I am quite certain it is confounded with diphtheria. Its main clinical feature is the formation of a membrane on the tonsil. Follicular tonsillitis at its onset has been confounded with the throat lesions of scarlet fever.

Diseases of the Stomach.—Pyloric stenosis. That only a tentative diagnosis can be arrived in a suspected case of pyloric obstruction is true. Careful watching and frequent systematic examination will lead us into the right path. But those of us in public practice meet these cases usually when emaciation has set in, when our efforts are futile to affect a cure, a cure made possible only by surgical intervention, and that intervention before our little sufferer is moribund, and can then hardly withstand the shock that is attendant upon such an operation.

Intestines.—Intussusception. I remarked previously in this paper that I find the most frequently overlooked malady of childhood to be retropharyngeal abscess. Next in frequency I place intussusception. A diagnosis can always be made if only this condition is in mind. How may physicians ever think of this as a clinical possibility, I do not know; but I do know that it is very rarely recognized in private practice. It is only when these patients come into the hospitals or dispensaries that a diagnosis is ever made. These patients are usually treated for gastroenteritis. An attempt is rarely ever made to explore digitally the rectum, and hence the cases go on to fatal termination.

Diseases of the Lungs.—Empyema. Just a word in reference to this disease. It seems to me the more I see of purulent pleurisy, the greater do I find the abject necessity of making exploratory chest punctures. If these cases were overlooked in the past, it was due to neglect of the procedure mentioned.

Diseases of the Kidneys.—Retention of urine. I can best elucidate the subject in question, by citing an instance that bears upon this point. I was called to see a seven week baby whose imminent demise was foreshadowed by the former medical attendants, the prognoses being based upon the fact that the infant did not pass urine for a period of twenty-six hours. It was one of those pernicious cases of gastroenteritis attendant with the passage of large amounts of urine via the rectum. The child is still living, and four months have elapsed since my last visit. This illustrates two points I desire to elucidate, the first of which is that many normal infants wet the diapers but once or twice in the twenty-four hours, and secondly in abnormal states where the accessory excretory organs are active, but very small amounts of urine pass the bladder. Œdema without renal disease. I desire to impress the fact that general œdema does not always imply the existence of renal disease. Indeed, I think it is far more frequently a concomitant of other conditions, namely, malnutrition, marasmus, and anæmia. Some clinicians assert the fact that it is invariably associated with those affections. Further, in contradiction of Tarnier's statement, that it is due to the giving of too much fluid, and its retention in the tissues, I will cite the case already detailed. The infant from the very onset of the attack, vomited

profusely, but still had a general anasarca. The abdominal and pleural cavities contained fluid, and yet the child was losing water from either end. Enuresis. No other malady of childhood necessitates a more rigid examination or a greater degree of foresight than does enuresis; for no other affection of early life has a wider ætiological bases than bed wetting. Almost every anomalistic factor in the life of a child can become an incitant of enuresis; and if we are not alert, if we allow the minutest detail to escape us, our efforts to achieve good results will be futile. The causes of enuresis are wide and varied, ranging from pinworms to organic disease of the brain and spinal cord; but if our efforts are directed to eliminate surgically adenoid vegetation and phimosis, we shall come very near to reaching our goal, and offering a favorable prognosis.

Diseases of the Blood.—It seems to me that of all the external manifestations of disease, the most frequently misinterpreted is the affection known as morbus maculosus. It is due purely to carelessness in examination, and a too great reliance upon subjective symptoms, which causes these purpuræ to be overlooked.

Gonococcus Vaginitis.—No examination can be complete unless in the female, it includes a thorough inspection of the vagina; for although the majority of mothers will call attention to an existing vaginal discharge, yet there are those who, either through neglect or false embarrassment, refrain from doing so. The great importance of recognizing gonococcus vaginitis lies in the fact that while in the beginning of an attack it is amenable to treatment, in the chronic or late cases it becomes a bane to the child, and an enigma to the doctor.

Diseases of the Lymph Nodes.—Status lymphaticus. The vast majority of sudden deaths which occur in infancy are due to thymus overgrowth. But how often is due credence given to this lymphatic state as being the causative factor of infantile dissolution? I can state positively without fear of contradiction, that there are medical men who have never heard of this condition. How many physicians are there that can attest that they ever percussed for the thymus? I find that paroxysmal asphyxia from enlarged thymus is usually interpreted as being due to laryngeal spasm.

Diseases of the Nervous System.—Tetany. A résumé of the textbooks would lead one to believe that tetany is frequently confounded with tetanus; but I find that on the whole, it is more often entirely overlooked than misinterpreted. A case came to my notice of a six year old child that had been spanked for "keeping its hands and feet crooked." The physician in attendance urged upon the mother to follow a rigid course of chastisement because he said the child would "form the habit." Tetany is often mistaken for meningitis. Spasmus nutans. This condition deserves mention not because of its inherent value (for it has none), but because it is of interest in that it bears a direct relationship to cerebral concussion, or at least is often a concomitant of this brain shock, as first pointed out by Hadden. Torticollis. This also deserves mention because it may be the forerunner of cervical Pott's disease, and I can recall at least one instance in which wry neck was treated for rheumatism, but

later developed a cervical kyphosis in conjunction with the other signs of tuberculosis of the spine. Porencephalia. A large number of so called backward children are subjects of porencephalia. I saw a case recently in private practice, of a boy of twelve years who had been repeatedly sent home from school, with an admonition to the mother that the boy was "diabolically stupid." The old family physician was appealed to and his verdict was to the effect that the boy was backward, and assured the anxious mother that the child "would grow out of it." When I saw the boy, he had already manifested a homicidal tendency. The child was a true idiot, drooling from the mouth, passing the urine, and the feces involuntarily showed the athetosis phenomena; besides, he had a well developed facial palsy. I referred this case to Dr. Henry Koplik for corroboration, and he fully agreed with me that the boy was a congenital idiot, and ought to be isolated from the normal children. The idiocies. Mongolian and amaurotic family. One can hardly place these diseases in the category of common fallacies, because of their comparative rarity; but I have seen in the service of the Mount Sinai Hospital Dispensary within the past two years, some eight or ten cases of Mongolian idiocy. With reference to amaurotic idiocy, I would like to urge strongly the advisability of examining the fundus of the eye in all mental affections of childhood in which the diagnosis is uncertain, for the ophthalmoscope at once reveals the only characteristic or pathognomonic feature of this disease, namely, a white area with cherry red centre in the position where the macula lutea normally is. Achondroplasia. What was said at the beginning of the paragraph on idiocy applies also to this disease. All the cases I have seen were confounded with either rickets or cretinism. Cretinism. Cretinoid idiocy is not so rare as one would be led to believe from the textbooks; and when once a case is seen, it is never forgotten; but those who are not alert to the existence of these rare maladies, usually label this disease as rickets.

In concluding this list of the idiocies and the diseases akin to them, I desire to impress strongly upon the minds of the general practitioner the profound and omnipotent necessity of taking the anamnesis in every case of this genus, for only by a careful consideration of each and every factor in the life history of our little patients can we best arrive at a definite conclusion, for the errors are made here, not so much by lack of foresight or perfunctory examinations, but by the evident fallacy of not going deep down into a deliberation of the ante-status of the case in question.

Congenital Heart Anomalies.—Were every physician to follow a definite regimen in making physical examinations, there would be much less likelihood of overlooking certain conditions and signs which the fugitive mind would otherwise let pass. This involves more in the diseases of the heart than it does in other affections. I find that there are some physicians who neglect to examine the heart in infants, relying as they do on subjective symptoms and upon the statements of the mother. To these perfunctory methods is due the fact that congenital heart lesions are so frequently overlooked. At va-

riance with the notion gained by a review of the textbooks, the morbus ceruleus is not a constant accompaniment of congenital heart disease; for in a comparatively large number of cases which I have seen in public practice (and my colleagues at the Mount Sinai Hospital Dispensary will attest fully, I believe, to this statement), cyanosis was absent.

I meant to say a word about the common fallacies in the distinction of the various cardiac murmurs in children, functional and organic, but the more I see of heart disease the more puzzled do I become, and the less convinced am I of the certainty of distinguishing accurately by auscultatory measures, functional from organic heart disease; because we are confronted every day with our own fallacies in interpreting the significance of heart murmurs, and the chagrin that evolves from prognosticating on what we hear.

Thus I have briefly outlined some of the more frequent errors in diagnosis with no evident intention of formulating a curriculum of differential diagnosis, for that would necessitate a résumé of the whole subject of pædiatrics, and entail a lengthy consideration. But as I have previously stated, the demeanor of my paper is to point out the more common errors, and the conditions with which they are most frequently confounded.

To recapitulate.—The errors in diagnosis in the line of children's diseases as it has been my experience to see them, are founded upon the neglect to formulate the *clinical entity*; and this entity may be compared to a chain composed of links all united, but each having a definite and distinct value, and all necessary to each other, thus constituting a contiguity of diagnosis. A break in this chain or the absence of one of its links results in an error in diagnosis.

In concluding, let me state that this clinical entity or diagnostic chain, is composed according to my formula, of the following links:

A. Inheritance: Venereal diseases, tuberculosis, alcoholism, and the diatheses.

B. The Parturient: The diseases and accidents associated with delivery.

C. Environment: Hygienic surroundings and the intelligence of the parents.

D. Feeding: Breast or artificial.

E. Infectious Diseases.

F. Malformations.

G. Status Præsens: Skin; rash or discoloration; temperature; fontanels; weight; nervous state; bone deformities or irregularities; voluntary muscular system; mental state, discharges from eyes, ears, nose, genitals and umbilicus; Hernia? Hutchinson's signs? Cardiac murmurs? Cardiac muscle. Club fingers? Pulmonary state. Abdomen; pendulous or scaphoid; liver and spleen enlarged? Kidney; size and position. Genitals. Lymph system; thymus enlarged? Deep and superficial lymph nodes. Tonsils, pharynx, tongue, gums, and buccal mucous membrane. Teeth, voice, laryngeal spasm? Facial expression. Character of breathing. Posture. Reflexes: Babinski; Kernig. Urine examination. Stools; character and frequency.

240 W. 5. ONE HUNDRED AND TWENTY-FIRST STREET.

Correspondence.

LETTER FROM KINGSTON, ONTARIO.

The New Queen's University Gymnasium.—The General Hospital.—The University Endowment Fund.—The Biological Building.—The Æsculapian Society.

KINGSTON, January 26, 1907.

The new gymnasium of Queen's University was opened formally on the 8th of January. It took a long time for Queen's to secure this gymnasium, so long, indeed, that many of the older graduates cannot quite remember when the movement for its establishment first began. On convocation day of 1906 the first sod was turned by the chancellor, Sir Sanford Fleming. The building is 60 by 105 feet, and consists of basement, main floor, and gallery, with baths, lavatories, drying rooms for clothes, plunge bath, etc. A running track of twelve laps to the mile extends completely around the building. The building cost \$25,000, about \$12,000 of which was advanced by the trustees of the university for its completion. It is said to have a greater floor space than any other gymnasium in Canada. It was erected under the guidance of the athletic committee.

After trying for a few years to govern our General Hospital without a medical superintendent, the governors some two or three months ago decided to return to the old order of things, and appointed Dr. A. D. McIntyre medical superintendent, and Miss Dyson superintendent of nurses. The County Council of Frontenac recently put on record its appreciation of the manner in which the Kingston General Hospital was conducted, stating its belief that at all times the patients sent in by the county received just and courteous treatment. Some one has suggested that some philanthropist of Kingston might well follow the example of a gentleman of Brockville and turn last year's deficit of \$2,000 into a surplus.

Although the Dominion government has refused to make a grant to Queen's University for buildings recently destroyed by fire, the university is happy in the fact that Mr. Carnegie has offered \$100,000 to the endowment fund. Coupled with this generous gift is the stipulation that it shall be the last fifth of the \$500,000 endowment fund which Queen's is striving to raise. Exclusive of it, the donations to date amount to \$250,000.

A beginning has been made on the new Biological Building for the university, the earth and rock excavations having been completed. The active work for the erection of the building will begin early in the spring. It was proposed at first to build of ornamental and cut stone from the penitentiary quarries, but, owing to the opposition of the Trades and Labor Council, new plans had to be executed, and the new building will be plain, oblong, and rock faced, devoid of any ornamentation.

The annual dinner of the Æsculapian Society of the medical department of the university was held on the 18th of December, M. Henri Bourassa, M. P., delivering the address of the evening. The subject of it was Canadian Patriotism. It was the most successful annual dinner ever held by the medical students.

Therapeutical Notes.

For Senile Pruritus.—Besnier (*Gazette médicale de Paris*, January 5, 1907) prescribes the following:

R Acid acetic, 4 grammes;
Aromatic vinegar, 200 grammes.

Add two spoonfuls of this solution to hot water (104° F.) and apply to the surface freely, after which powder with

R Bismuth salicylate, 10 grammes;
Starch, 90 grammes.

M.

The Administration of Antipyrine.—Combe-male (*Gazette médicale de Paris*, January 5, 1907) suggests that this solution:

R Antipyrine, 4 grammes;
Sodium bicarbonate, 2 grammes;
Syrup, 14 grammes;
Water, 45 grammes.

be given in a tablespoonful dose, to be immediately followed by a spoonful of the following:

R Citric acid, 2 grammes
Syrup of lemon, 15 grammes;
Water, 45 grammes.

M.

Trycophytosis Barbæ.—Brocq (*Gazette médicale de Paris*, January 5, 1907) prescribes:

R Bichloride of mercury, 0.20 grammes;
Formaldehyde, 0.75 grammes;
Acetone, 10 grammes;
Alcohol (camphorated), 100 grammes.

Touch the parts affected with this solution morning and evening. At night apply a petrolatum ointment containing one per cent. of metallic iodine to the affected hairs.

The Active Principles of Digitalis.—Among the constituents of digitalis, according to Huchard (*Bulletin général de thérapeutique*, December 30, 1906), digitaline is the most reliable, and of all the preparations of digitalis it is to be preferred. He uses the crystallized digitaline of the French codex, which may be dissolved in oil for injection deeply into the muscle. These injections have the advantage of definite dosage and prompt action. They are rapidly absorbed and avoid the danger of exciting any intolerance of the stomach. They cause very little pain. He indicates three methods of prescribing digitaline: 1. The massive or large dose, which is also the antiasystolic and diuretic dose. During an attack of asystole he prescribes fifty drops of the solution (1 to 1,000), representing one milligramme of digitaline, to be given in one or two doses in twenty-four hours. In about thirty-six or forty-eight hours an abundant diuresis occurs, with reinforcement of the cardiac contraction, absorption of the oedema, diminution of internal congestion with elimination of the chlorides. If the effects are not deemed sufficient, the remedy may at the end of six days be repeated in the same or in a diminished dose. 2. The small dose, which is also the sedative dose. He gives five to ten drops of the solution (1 to 1,000), or a granule of a quarter of a milligramme, for three or four days. This is to be repeated every three or four weeks. This method is very useful in dyspnoea accompanying mitral stenosis; because it lengthens the diastole and thus permits more blood to flow into the ventricle. 3. The very small dose, which is the cardiotonic or sup-

porting dose. This may be continued for weeks and months if periods of intermission every fifteen or twenty days of one or two weeks is allowed. The dose is three or four drops of the solution (1 to 1,000), or a granule of one tenth of a milligramme, given once daily. This will give tone to the heart without causing any toxic symptoms. Owing to its slowness of elimination, a certain quantity remains in the organism, and continues to exercise a toxic action upon the myocardium.

Superiority of Diluted Tinctures of Iodine in Dermatology.—Sabouraud (*La Clinique*, November 16, 1906) declares that he does not know of any skin disease in which the pure tincture of iodine is superior to a diluted tincture. Usually he directs the official tincture to be diluted to one tenth its standard strength:

R Tr. iodi, 30 grammes;
Alcoholis (80°), 270 grammes.

This solution has the great advantage of being borne well by the skin when daily applied. The pure tincture is too caustic, and excites too much inflammation for cases where the antiparasitic effect only is desired. This mitigated tincture of iodine, in fact, is the preferred remedy in all cryptogamic parasitic diseases of the skin for the purely medicinal treatment. Nevertheless, the method of treating alopecia and favus by radiotherapy has supplanted every other method. But, even where radiotherapy is employed, some prophylactic method should be followed to prevent the spread of the disease. In such cases the lecturer advises frictions of the entire scalp every day with the ten per cent. dilution of tincture of iodine. The slight discoloration of the skin will generally disappear by the following morning. When ringworm is found upon the skin, such daily frictions will cause it to disappear in a few days. In kerion, the same dilution may be applied once daily, and followed by a wet dressing. A solution of twice this strength (the official tincture being diluted one fifth, one fourth, or even only one third) is to be applied daily to the favus crusts by means of a dossil of absorbent cotton. In a few days the parasitic mass will cure up and loosen itself from the skin. When it falls off, the epidermis has been already reformed beneath it. This cures superficial cases very rapidly. When the favus has invaded the follicles, depilation is necessary. In a family in which there are several children, who have to associate with one affected by ringworm, the ten per cent. dilution may be vigorously applied each night to scalps of the healthy children as a prophylactic measure. The application causes no pain, and the slight discoloration disappears in a few hours. Erythrasma and pityriasis versicolor patches rapidly disappear under daily rubbings with the one to ten per cent. dilution. In intertrigo of elderly men nothing relieves the itching and burning so well as a daily application to the fissured and macerated surfaces of the same solution. After this iodine application has been made, a soothing ointment may be used, such as the cream of zinc:

R Zinc oxide,)
Petrolatum,) 30 grammes.
Wool fat,)
Fresh oil of sweet almonds,)

[The tincture of iodine of the French codex consists simply of iodine dissolved in alcohol in the

proportion of 1 to 12. The U. S. P. tincture contains 70 parts of iodine, 50 of potassium iodide, with alcohol sufficient to make 1,000 parts. It has the advantage of not precipitating when diluted with water. Probably the watery dilution would act as well as the alcoholic and would cause less pain.]

Treatment of Bradycardia.—Josué, in a recent clinical lecture on permanent slowness of the pulse (*La Quinzaine thérapeutique*, January 10, 1907) or the Stokes-Adams syndrome, calls attention to the fact that the condition is produced by the failure of certain contractions of the auricles to extend to the ventricles. In fact, the pulsations observed in the jugular veins may be two or three times as frequent as the arterial impulses felt at the wrist. This defective propagation of the systolic wave has been found in two cases examined by Schmoll to be due to destructive lesions of the bundle of muscular fibres, described by His, Junior, which extends from the posterior wall of the right auricle downward to be inserted in the ventricular septum. His and Graupner have shown experimentally in dogs that when this bundle of muscular fibres is cut the auricles and ventricles beat independently of each other. Clinically, in addition to bradycardia, there are observed nervous symptoms, such as vertigo, syncope, headache, or even epileptiform convulsions. The attacks may be excited by fatigue, worry, or overwork. The condition is more common in men than in women, and especially it occurs with age. Arterial atheroma, lesions of the bulb, or of the pneumogastrics, have been cited as causes of this syndrome. Lesions of the myocardium and renal insufficiency are also suggested. In the treatment, hygienic measures are important. The patient should avoid all fatigue, excitement, and emotion, and lead as quiet a life as possible. The diet should be principally of milk, with very little meat. Spices, sauces, fish and shellfish, and fruits are forbidden. Autointoxication by the intestinal canal is thus diminished as much as possible. If the patient has arteriosclerosis, potassium iodide is prescribed in small doses (0.50 to 1 gramme daily), which diminishes the viscosity of the blood. If the arterial tension is increased, small doses of nitroglycerin may be given three times a day. If the kidneys are not active and the urine is diminished in quantity, no time is lost in putting the patient strictly upon a milk diet. When an attack is impending the patient may inhale a few drops of amyl nitrite, in order to bring about vasodilatation. Chauffard has suggested the use of atropine hypodermically, which paralyzes the intracardiac terminations of the pneumogastric nerve. In case of impending heart failure by asystole, hypodermic injections of sparteine sulphate may be administered; if there is marked arrhythmia, subcutaneous injections of camphorated oil or of caffeine may be given. But under no circumstances should digitalis be used for these cases; it is absolutely contraindicated in the syndrome of Stokes-Adams, even during the period of asystole. To give digitalis to these patients is to expose them to grave accidents or even sudden death.

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NEW YORK, SATURDAY, FEBRUARY 16, 1907.

PASTEURIZATION OF NEW YORK'S MILK
SUPPLY.

We see no present indication that pasteurization of the milk supplied to New York is to be made compulsory or is to be undertaken at the public expense. Therefore the entire supply will not be pasteurized, and it may be questioned if it ought to be. At all events, we think that Commissioner Darlington is to be commended for having thus far declined to commit the Health Department to such an enormous expenditure as general pasteurization would involve. Nevertheless, it is quite probable that pasteurization will soon be practised in New York on a far larger scale than any that we have seen hitherto, for it is understood that a number of philanthropists have offered to furnish abundant funds for the purpose.

We do not hail the prospect with unmingled satisfaction. In our last issue, while we refrained from expressing any objection to pasteurization, we emphasized the desirability of greater care and thoroughness in the work of discovering and exterminating tuberculous cows. It will be borne in mind, of course, that the present public interest in the question of pasteurization turns on the matter of tuberculous infection. It is doubted by some persons, including not a few whose opinions on the subject are worthy of great respect, if the proper pasteurization of milk from tuberculous cows is an infallible or nearly infallible preventive of infection. However, medical men in general appear to think that it is, and we are not at present prepared to deny it.

Nevertheless, it seems to us that pasteurization of milk on a large scale is not altogether unobjectionable. If we concede that it is likely to prevent a certain number of tuberculous infections, even a very large number, we shall of course have taken a step in the preservation of human life—but at what a cost, not in money, but in our future welfare! If any considerable reduction of the prevalence of consumption comes to be imputed to the pasteurization of milk, the cry will be raised that the discovery and destruction of tuberculous cattle need no longer be insisted on, and before many years have passed we shall find ourselves relying on the regeneration of infected milk, a task that as time goes on will grow heavier and heavier and more uncertain in its results, rather than on the one radical measure which, if carried out to the utmost, promises an eventual close approach to freedom of the community from the danger of tuberculous infection from cattle—namely, the extermination of cattle that are found to have the disease.

Then, too, the sanitation of dairy premises will fall into neglect, and filth will resume its sway. There will be no sort of check on the sale of meat furnished by tuberculous cattle. It is easy to say that these relapses into the carelessness of the past will not necessarily result from a blind reliance on the pasteurization of milk, but it is equally reasonable to fear that public opinion, trusting to an accepted safeguard, will tolerate the return to dangerous methods. We should not be willing to use dirty or corrupted milk simply because we are plausibly assured that it has been deprived of one of its powers for evil. What we have here said applies to Philadelphia, Chicago, and other large cities as well as to New York.

VENTROFIXATION AND OBSTETRICAL
COMPLICATIONS.

One would naturally suppose that the occurrence of a single normal parturition after uterine ventrofixation might be taken as proof that in the case of that particular woman no subsequent trouble in labor was to be apprehended as a result of the operation. There seems reason to suspect, however, that such an inference does not invariably hold good, though probably in the cases that do not bear it out the adhesion of the uterus to the abdominal wall is only a contributory element in bringing about any serious complication that may occur. In a case reported by M. V. Bué (*Nord médical*, January 1st) the associated cause of trouble seems to have been the fact that the uterus was occupied by twins.

After her third confinement, the woman's menstruation became very painful and irregular, and retroversion of the uterus was discovered. Abdom-

inal hysteropexy was performed in April, 1901. The patient made a good recovery, and her sufferings were very much mitigated. Two years later she was confined for the fourth time, and her labor was entirely normal. Menstruation, however, again became painful, too copious, and of undue frequency. Toward the close of her fifth pregnancy, in April, 1906, the woman was admitted into a hospital in Lille. This fifth gestation had been accompanied from the start with frequent vomiting, diarrhoea, and pain in the lower part of the abdomen. For six weeks preceding her entrance into the hospital she had noticed that her legs were swollen and that she urinated frequently but scantily. At the time of her admission there was bloating of the face, with very pronounced œdema of the lower limbs and of the region below the umbilicus. There was also œdema of the vulva, and the labia attained the size of one's fist within twenty-four hours. The abdomen was pendulous, and the uterus appeared particularly enlarged in its transverse diameter. By reason of the very great resistance of the uterine and abdominal walls no foetal part could be made out, auscultation revealed nothing, and hardly anything could be ascertained by vaginal examination. The cervix uteri, which was directed toward the hollow of the sacrum, could scarcely be reached. Examination of the urine showed a drachm of albumin to the quart.

Labor had now come on, and it was thought desirable to rupture the membranes and deliver by version, the presentation having been judged to be transverse. A foetus having been extracted, another one was found, presenting by the shoulder. That also was turned and extracted. There was a copious loss of blood, and artificial removal of the placenta was necessary. Delivery took place in the evening. In the course of the night there was renewed hæmorrhage, and finally intrauterine tamponing had to be resorted to.

The occurrence of abdominal pains during the pregnancy seems to the author important. He imputes them to the dragging of the growing uterus on the cicatrix, and cites Démelin as stating that they occur in twenty-one per cent. of the cases. He asks if the transverse presentation is to be attributed to the hysteropexy. The appeal to statistics by Démelin, Pinard, and Schütte leads him to the conclusion that ventrofixation favors this presentation, especially in cases of twin gestation. Transverse presentations, he adds, are comparatively common in cases of twins, but it is only rarely that both foetuses present transversely. He thinks, therefore, that the ventrofixation had in his case something to do with the double shoulder presentation and with the hæmorrhage which took place.

THE RELATION OF THE LIVER CELLS TO THE BLOODVESSELS AND LYMPHATICS.

The question of the existence of a set of capillary channels within the cytoplasm of the liver cells has been under discussion for some time. Such a network of fine channels was described by Schäfer in 1902; but the presence of such channels, communicating with the bloodvessels, is difficult to reconcile with the generally accepted views on the relation of the blood spaces to cells in general. Some observers have doubted the presence of such channels, but the majority admit that they exist. It is questionable whether these structures are a part of the blood vascular system or a part of the lymphatic system. In a recent paper Minot maintains that the vessels of the liver are not true capillaries which have grown into the liver, but that they are "sinusoids" which have been formed by the growth of the liver blastema into a large blood sinus, and although these vessels have the appearance of capillaries, they are in reality spaces between columns of liver cells which are lined by cells of an embryonic character. Herring and Simpson (*Proceedings of the Royal Society*, lxxviii, B 527) have recently published the results of experiments made to determine the character of the capillary network within the hepatic cells. The injections, in the majority of cases, were made with carmin gelatin.

As a result of their study they conclude that the liver cells are permeated by fine anastomosing channels which can be filled with injection mass from the bloodvessels. These channels undoubtedly receive plasma from the blood during life. In the dog, red blood corpuscles are occasionally seen within the liver cells, and crystals which closely resemble hæmoglobin are frequently found inside the cell nuclei. Therefore there must be an intimate communication between the blood in the intralobular bloodvessels and the liver cells. The lymphatics of the liver of the dog and cat are confined to the visible connective tissue of the capsule of Glisson and to the adventitia of the hepatic veins. The lymphatic vessels accompany the hepatic artery and its branches, forming networks around these vessels as well as around the branches of the portal vein and the bile ducts. There are no lymphatics within the lobules. The circumvascular lymphatics described by MacGillavry do not exist. Both portal and hepatic lymphatics leave the organ at or near the portal fissure. The endothelium which lines the intralobular blood spaces ("sinusoids" in the sense of Minot) is incom-

plete and allows the passage through it both of fluid and of fine solid particles into the liver cells. The endothelial cells are of two kinds, large and small. The large cells (Kupffer's cells) are phagocytic and often project into the blood spaces. The concentrated character of the liver lymph is explained by the incomplete nature of the endothelium lining the intralobular bloodvessels, permitting the plasma to pass directly into the liver cells. It is possible that the cells of the lobule form a syncytium, and that the lymph is thus able to pass from cell to cell. It is probably passed at the periphery of the lobules into the interstices of the connective tissue which lies between the lobules; here it enters the lymphatics. All conditions which tend to promote the activity of the liver cells should, by virtue of these arrangements, also tend to promote the flow of lymph.

CIVILIZATION AND THE BIRTH RATE.

Some years ago it was not unusual for Europeans to taunt us Americans with the small size of the average American family, the remark being frequently added that families of fifteen children or more were not uncommon in Europe. We were never greatly cast down by this criticism, perhaps because we reflected that the parents of the fifteen or more children were immensely excelled in fecundity by almost any pair of frogs. It was not far from this reflection to the flattering deduction that our small families were an evidence of high civilization. As to the due maintenance and even increase of the population, we had our safeguard in immigration. That, however, amounts to practically nothing in European countries, and in recent years France has felt anxious about her diminished birth rate. Still more lately the same state of things has been reported from Great Britain.

The British registrar general, Sir William Dunbar, who has to report a steadily decreasing birth rate in England and Wales, offers his countrymen some consolation; as the *Sun* puts it in a head line, he "defends" a low birth rate. He is reported as saying that a high birth rate is apt to be accompanied by a great amount of sickness and a high degree of mortality among the children, while a large proportion of those who survive are puny and do not properly keep up the strength of the nation. There may be something in this, though one might naturally suppose that there would be more cases of sickness and death among a multitude of children than among a few, not pausing to reflect that there would be likely to be a disproportionate increase of sickness and death by reason of the parents' inability to take proper care of the health of a large family. The same consideration would account for

the poor development of the survivors, who, though they have "pulled through," have had their vitality seriously impaired. It seems probable, therefore, that Sir William Dunbar's deductions are to a considerable extent warranted.

There does seem to be a direct relationship between a high state of civilization and a diminished birth rate, but we do not mean to say that it is the civilization itself which accounts for it. The further we advance above primitive conditions the more we encounter impediments to early marriages. Many of these impediments spring from higher social requirements, but probably most of them have their origin in the fact that increasing remuneration for work does not keep pace with the augmenting cost of supporting a family. Still, civilization and its results do not solely account for a diminished birth rate; we can hardly avoid the conclusion that the deliberate prevention of conception and interference with gestation play no inconsiderable part in retarding the growth of population:

"VOLUNTARY" DILATATION OF THE PUPILS.

Dr. Ernst Bloch, of Kattowitz (*Deutsche medizinische Wochenschrift*, 1906, No. 44; *Berliner klinische Wochenschrift*, January 7th), has observed a man who could "voluntarily" cause dilatation of his pupils. Self suggestion seems to have played an important part in bringing about the result, but also he was obliged to turn his head back and keep his eyes fixed on the ceiling, at the same time holding his breath and intensely willing to dilate his pupils. The dilatation took place in the course of three or four seconds. At the same time his face became red, and repeated performances of this sort gave him headache. He could not contract his pupils. The man was addicted to the use of morphine. It is conceivable that he had a knack of bending his neck in such a manner as to compress certain veins and thus cause congestion of some portion of the cranial contents.

"CHILDLESS FATHERS."

According to the *Sun* for February 5th, Mr. Conner, of Felton, Del., has introduced a bill into the Delaware legislature to tax "childless fathers" for the benefit of the school funds. It is not clear whether this novel kind of father was discovered by the statesman in question or by some writer for the *Sun*, but he should be immediately hunted up and classified by the proper biological authorities. It looks as if the *Sun* was responsible for this anomalous parent, for in another column it asserts that "the government has decreed that no food shall be sold that is harmless."

OXYGENATED BEVERAGES.

In a letter which we publish elsewhere in this issue Mr. Eustace Harold Gane points out that in many respects the aeration of beverages with oxygen is distinctly inferior to the prevalent method of making carbonated waters. Mr. Gane is one of our most competent and painstaking chemists, and we think it must be conceded that all the statements he makes are well sustained.

 Obituary.

WILLIAM C. PICKETT, M. D.

OF PHILADELPHIA.

Dr. Pickett died at his home in Alden, Delaware County, Pa., on Wednesday, February 6th. He was born in Meadville, Pa., in 1868. He was graduated from the Jefferson Medical College in 1889 and served the usual period as an interne in the Philadelphia General Hospital. He was surgeon to the Pennsylvania Nautical Schoolship *Saratoga* for a time and was subsequently appointed demonstrator of neurology in the Jefferson Medical College. On the death of Dr. F. Savary Pearce, a few years ago, Dr. Pickett was elected professor of nervous and mental diseases in the Medico-Chirurgical College. Dr. Pickett had been in poor health, on account of chronic endocarditis, for about a year, but had been able to attend to his duties at the Medico-Chirurgical College until a short time ago. The immediate cause of his death was an acute exacerbation of the endocarditis, probably ulcerative or septic in nature.

 News Items

NEW YORK CITY AND STATE

The Seton Hospital.—There is a vacancy on the resident staff of Seton Hospital for Tuberculosis, at Spuyten Duyvil. The position is a salaried one. For particulars address Dr. T. J. Abbott, 123 West Seventy-eighth Street, New York.

The Medical Society of the County of Richmond, N. Y.—The programme for a meeting of this society, held at the Staten Island Academy on Wednesday evening, February 13th, included the following title: The Recent Investigations of Syphilis and Their Practical Application, by Dr. Boleslaw Lapowski.

The Harvey Society Lectures.—The ninth lecture in the Harvey Society course will be delivered at the New York Academy of Medicine, on Saturday evening, February 23rd, by Professor William T. Councilman, of Boston. Subject: The Relation of Certain Leucocytes to Infectious Diseases. All persons interested are cordially invited to be present.

Personal.—Dr. Frank W. Murray has resigned the chair of clinical surgery at Cornell University Medical College. Dr. M. D. Lederman has been appointed attending aurist and laryngologist to the Lebanon Hospital.

At a recent meeting of the governors of the Woman's Hospital in the State of New York, Dr. Le Roy Broun was appointed surgeon to the hospital.

The Medical Society of the County of Kings.—The following programme was presented at a meeting of the *Section in Pædiatrics* of this society, held on Friday evening, February 15th: The Province of the Pædiatrist in Diseases of the Eye, Dr. Henry Mitchell Smith; The Care of the Ear in Children, Dr. Burnett C. Collins; Some Phases of Nervous Diseases in Children, Dr. Frederick Tilney; discussion by Dr. Henry A. Fairbairn, Dr. William N. Belcher, and Dr. LeGrand Kerr.

The Clinical Society of the New York Post Graduate Medical School and Hospital.—The following programme was arranged for a meeting of this society, held on Friday evening, February 15th: Presentation of patients; Cured Cases of Gastric Ulcer, Dr. L. A. F. Chase; Presentation of Specimens, Instruments, and Apparatus; Reports of Cases; Papers: Diagnosis and Medical Treatment of Gastric Ulcer, Professor Halsey; Surgical Treatment of Gastric Ulcer, Professor Torek; discussion by Dr. Lloyd, Dr. Morris, Dr. Einhorn, Dr. Welzmler, Dr. Carter, and Dr. Bastedo.

The Glens Falls, N. Y., Medical and Surgical Society.—At a meeting of this society, held on Thursday evening, February 7th, a symposium on Digestion and Indigestion was held, as follows: Dr. W. C. Cuthbert, of Sandy Hill, Ætiology of Indigestion; Dr. M. LeRoy Haviland, of Glens Falls, Physiology of Digestion; Dr. T. E. Humphrey, of Saratoga, Treatment of Indigestion; Dr. R. J. Eddy, of Glens Falls, Diet of Adults in Health; Dr. S. E. Strong, of Saratoga, Diet in Disease. After the scientific session a banquet was held, at which the members of the Saratoga Medical Society were guests.

Public Lectures on Problems of Insanity.—The third of the series of public lectures on this topic, arranged for by the Psychiatric Society, will be delivered at the New York Academy of Medicine, 17 West Forty-third Street, on Saturday, February 16th at 8:30 p. m., by Dr. C. L. Dana. The subject will be: The Facts of Heredity and their Relation to Mental Disorders. These lectures aim at placing before the medical profession and the general public facts with regard to mental disorders which indicate the possibility and duty of initiating a wide movement toward general preventive measures.

The New York Pathological Society.—The following programme was prepared for a meeting of this society, held on Wednesday evening, February 13th: 1. A Case of Chorioepithelioma, with Metastases (by invitation), by Dr. Leander H. Shearer; 2. Ureteritis, Cystica Chronica, with Bilateral Double Ureters, by Dr. Bond Stow; 3. A Case of Acromegalia, by Dr. Charles Norris; 4. An Unusual Case of Generalized Tumor of the Lymph Nodes, by Dr. Thomas Flournoy; Papers: The Phenomena of Agglutination from a Standpoint of Colloidal Chemistry, by Dr. Cyrus W. Field; Pathological Investigations, by Dr. Mary Dixon Jones.

The Medical Association of the Greater City of New York.—A meeting of this association will be held at the New York Academy of Medicine, on Monday evening, February 18th, with the following programme: A Symposium on Mental and Nervous Diseases arranged as follows: Mental and Nervous Diseases in General Practice, by Dr. William B. Noyes; Early Diagnosis in Mental Diseases, by Dr. Arthur C. Brush; On the Relations of Ear Affections to Mental Disturbances, by Dr. W. Sohler Bryant; Arteriosclerosis in Diseases of the Nervous System, by Dr. Edward D. Fisher; Phototherapy in Nervous Diseases, by Dr. A. D. Rockwell; general discussion.

The Williamsburgh Medical Society of Brooklyn, N. Y.—The following programme was arranged for a meeting of this society on Wednesday, February 13th: Presentation of cases; a case of double hydronephrosis, by Dr. William Linder; a case of tertiary syphilis of the nose, by Dr. Marcus J. Levitt; Papers of the evening: Early Diagnosis of Carcinoma of the Stomach, Dr. Joseph Merzbach; discussion by Dr. Jacob Fuhs, and Dr. J. Bion Bogart; Treatment of Inevitable and Incomplete Abortion, Dr. J. O. Polak; discussion by Dr. O. P. Humpstone, and Dr. Wm. Linder; demonstration of specimens. The officers of this society are: President, Dr. Leon Louria; vice-president, Dr. William Linder; secretary, Dr. Marcus J. Levitt; treasurer, Dr. Abraham Hayman.

The Buffalo Academy of Medicine.—The following programme has been arranged for a meeting of the *Section in Obstetrics and Gynecology*, to be held on Tuesday, February 26th: The Legal Status of the Unborn Child, by John Lord O'Brian, Esq.; Transverse Abdominal Incision, by Dr. James E. King.

The following programme was presented at a meeting of the *Section in Medicine*, held on Tuesday, February 12th: Diseases of the Nasopharynx in Infancy, Dr. John Lovett Morse, Associate Professor of Pædiatrics, Harvard Medical School, Boston, Mass.; discussion opened by Dr. Irving M. Snow; Some Effects of Spirit and Drug Taking on the

Upper Air Passages, Dr. T. D. Crothers, Superintendent of Walnut Lodge Hospital, Hartford, Conn.

Society Meetings for the Coming Week:

MONDAY, February 19th.—Medical Association of the Greater City of New York; New York Academy of Medicine (Section in Ophthalmology); Hartford, Conn., Medical Society.

TUESDAY, February 19th.—New York Academy of Medicine (Section in Medicine); Tri-Professional Medical Society of New York; Medical Society of the County of Kings, N. Y.; Buffalo Academy of Medicine (Section in Pathology); Ogdensburg, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Binghamton, N. Y., Academy of Medicine; Clinical Society of Elizabeth, N. J., General Hospital.

WEDNESDAY, February 20th.—New York Academy of Medicine (Section in Genitourinary Disease); New York Society of Dermatology and Genitourinary Surgery; Woman's Medical Association of New York City (New York Academy of Medicine); Medicolegal Society, New York; New Jersey Academy of Medicine (Jersey City); Buffalo Medical Club; New Haven, Conn., Medical Association.

THURSDAY, February 21st.—New York Academy of Medicine; German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society.

FRIDAY, February 22nd.—Academy of Pathological Science, New York; New York Society of German Physicians.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending February 9, 1907:

	February 9.		February 2.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	61	7	35	9
Smallpox.....	2	1	1	1
Scarlet fever.....	92	..	125	..
Measles.....	195	5	138	5
Whooping cough.....	261	12	325	15
Diphtheria.....	65	5	75	13
Tuberculosis pulmonalis.....	314	57	315	46
Cerebrospinal meningitis.....	350	208	354	206
	10	16	20	17
Totals.....	1,350	310	1,385	312

PHILADELPHIA AND THE MIDDLE STATES.

Municipal Hospital for Camden.—At the meeting of the City Council of Camden, N. J., held on January 31st, the board of health caused a resolution to be presented appropriating \$50,000 for a municipal hospital. The resolution was referred to the finance committee.

Pennsylvania State Board of Medical Examiners.—The Governor of Pennsylvania announced on February 1st the following appointments, to take effect March 1st: Members of the State Regular Examining Board: Dr. J. Guy McCandless and Dr. James B. Walker.

Charitable Bequests.—By the will of Martha J. Moore, the Pennsylvania Hospital for the Insane receives \$250. By the will of Martha T. Kortright, the Presbyterian Hospital of Philadelphia is one of four institutions among which the personal property of the deceased, valued at \$100,000, will be divided.

College of Physicians of Philadelphia.—At the regular monthly meeting of the College of Physicians of Philadelphia, held on Wednesday evening, February 6th, Dr. John H. Musser read a paper entitled Infections Within the Thorax—Empyema. Dr. Theodor Schott, of Naueim, read a paper on The Treatment of Chronic Diseases of the Heart. The honorary librarian reported the addition of 169 volumes to the library during the month.

The Northwestern Medical Association.—At the annual meeting of the Northwestern Medical Association, Philadelphia, the following officers were elected for the ensuing year: President, Dr. Wilmer Krusen; vice-president, Dr. Clarence P. Franklin; secretary, Dr. H. Hudson; treasurer, Dr. J. Thompson Schelt; board of censors, Dr. Nathan G. Ward, Dr. H. Lowenberg, Dr. Rae Shepard Dorsett; executive committee, Dr. G. Morton Illmann, Dr. Harry Weber, Dr. E. E. W. Given.

North Branch, Philadelphia County Medical Society.—At the meeting of the North Branch of the Philadelphia County Medical Society, held on January 15th, the following officers were elected for the ensuing year: Chairman,

Dr. Frank C. Hammond; clerk, Dr. H. K. Regar; committee on scientific business, Dr. F. H. Dye, chairman; Dr. J. O. Arnold, Dr. Hugh P. McNiff; committee on increase of membership, Dr. S. P. Gerhard, chairman; Dr. H. A. Duncan, Dr. C. P. Large, Dr. B. F. Devitt.

N. S. Davis Memorial.—Dr. James M. Anders has been appointed the Pennsylvania member of a committee to solicit subscriptions for a fund for the erection of a memorial to the late Dr. N. S. Davis. As is well known, Dr. Davis was the founder of the American Medical Association, and it is eminently fitting that a national memorial should be erected to his memory. Contributions may be forwarded to Dr. Anders, at 1605 Walnut Street, Philadelphia.

Alumni Association of the Medicochirurgical College.—At a banquet of the Alumni Association of the departments of medicine, dentistry, and pharmacy of the Medicochirurgical College, Philadelphia, held on the evening of January 31st, Dr. William Egbert Robertson outlined a plan for the erection of a club house for the use of the undergraduates of the Medicochirurgical College. The proposition met with the enthusiastic support of the three hundred members and guests present.

West Philadelphia Medical Association.—At the annual meeting of the West Philadelphia Medical Association the following officers were elected for the ensuing year: President, Dr. J. W. McConnell; vice-president, Dr. S. F. Gilpin; recording secretary, Dr. George Mills Boyd; financial secretary, Dr. Charles E. Price; treasurer, Dr. H. B. Smith; board of directors, Dr. H. D. Jump, Dr. Arthur Bogart, Dr. W. M. Miller, Dr. George P. Shammo, Dr. A. P. Good, Dr. C. H. Wallace, Dr. S. F. Gilpin, Dr. E. L. Graf, Dr. B. F. Wentz, Dr. T. J. Ellinger, Dr. F. Mortimer Cleveland; committeeman on weekly roster, Dr. J. W. McConnell.

Philadelphia Pædiatric Society.—At the annual meeting of the Philadelphia Pædiatric Society, held on January 8th, the following officers were elected for the ensuing year: President, Dr. David L. Edsall; first vice-president, Dr. Charles F. Judson; second vice-president, Dr. Herbert B. Carpenter; third vice-president, Dr. J. Claxton Gittings; recorder, Dr. Charles H. Weber; treasurer, Dr. Howard C. Carpenter; secretary, Dr. Maurice Osteimer; executive committee, Dr. Alfred Hand, Jr., Dr. D. J. M. Miller, Dr. Samuel M. Hamill, Dr. Thompson S. Westcott, Dr. J. H. McKee; membership committee, Dr. Theodore LeBoutillier, Dr. Eleanor C. Jones, Dr. W. N. Bradley.

The Gloucester County, New Jersey, Medical Society.—A meeting of this society will be held at Woodbury, on Wednesday, February 20th. An address on The Relationship and Duties of the Profession to the Public and of the Public to the Profession, will be given by Dr. J. N. McCormack, of Bowling Green, Ky. At the conclusion of the meeting a dinner will be given. In the evening of the above given date a public meeting will be held at the opera house, Woodbury, and Dr. McCormack will deliver an address on Public Hygiene and Sanitation and of the Duties of the Medical Profession to the Public.

The Obstetrical Society of Philadelphia.—A regular meeting of the Obstetrical Society of Philadelphia was held on Thursday evening, February 7th, at which Dr. Collin Foulkrod reported a case of chorea in pregnancy and Dr. Richard C. Norris a case of pubiotomy. Dr. Ellice McDonald, of New York city, read a paper entitled The Diagnosis of Early Pregnancy, with Report of a New Sign, and the Results of Examination of One Hundred Cases. The discussion was opened by Dr. Robert L. Dickinson, of Brooklyn, and continued by Dr. W. S. Stone, of New York city; Dr. B. C. Hirst, Dr. E. P. Davis, Dr. Richard C. Norris, Dr. J. G. Clark, and Dr. C. P. Noble. Dr. William R. Nicholson read a paper on Premature Detachment of a Normally Situated Placenta, the discussion of which was opened by Dr. Richard C. Norris.

Scientific Society Meetings in Philadelphia for the Week Ending February 23, 1907.—*Monday, February 18th*, Medical Jurisprudence Society; Northeast Branch, Philadelphia County Medical Society. *Tuesday, February 19th*, Section in Ophthalmology, College of Physicians; Dermatological Society; Academy of Natural Sciences; North Branch, Philadelphia County Medical Society. *Wednesday, February 20th*, Section in Otology and Laryngology, College of Physicians; Association of Clinical Assistants of Wills Hospital; Franklin Institute. *Thursday, February 21st*, Section in Gynecology, College of Physicians; Section Meeting,

Franklin Institute; Medical Society of the Woman's Hospital; Philadelphia County Medical Association; South Branch, Philadelphia County Medical Society.

Philadelphia Personals. Dr. Jacob I. Schatt, of Nauenheim, Germany, read a paper at the regular meeting of the College of Physicians of Philadelphia, on February 6th.

Dr. R. M. Jones, of West Point, Montgomery County, Pa., a retired physician, seventy-three years of age, has been missing from his home since January 16th.

Dr. Wilfred T. Grenfell, the medical missionary to Labrador, has been in Philadelphia during the past week. Among his engagements was one at the dinner given by the Geographical Society to Commander Peary. On February 6th he made an address before the Geographical Society. Doctor Grenfell went to Labrador as a medical missionary in 1902. He began by establishing a hospital ship, and now he has three other hospitals under his care. He has been very active in his efforts to improve the physical and moral condition of the people among whom he lives and seems to have succeeded in improving their social environment.

The following named physicians are registered at the Philadelphia Polyclinic and College of Graduates in Medicine: Dr. E. R. Cotham, of Monticello, Ark.; Dr. L. C. Ahlborn, of Waverly, W. Va.; Dr. William W. Mills, of Polk, Pa.; Dr. S. E. Reynolds, of Elizabethton, Tenn.; Dr. A. R. Collins, of Wautauga Valley, Tenn.; Dr. E. W. Blackburn, of Latrobe, Pa.; Dr. L. L. Doane, of Butler, Pa.; Dr. J. W. Stitzel, of Hollidaysburg, Pa.; Dr. R. J. Teague, of Durham, N. C.; Dr. L. B. Hirst, of Camden, N. J.; Dr. D. C. Louchery, of Clarksburg, W. Va.; Dr. L. T. McClelland, of Brooklyn, N. Y.; Dr. David H. Ludlow, of Easton, Pa.; and Dr. T. I. C. Parsons, of Ripley, W. Va.

The Health of Philadelphia.—During the week ending February 2, 1907, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Typhoid fever.....	344	42
Scarlet fever.....	32	0
Cholera.....	53	0
Diphtheria.....	74	7
Cerebrospinal meningitis.....	1	0
Whooping cough.....	29	3
Measles.....	31	1
Tuberculosis of the lungs.....	65	71
Pneumonia.....	95	88
Erysipelas.....	6	3
Paratyphoid fever.....	1	0
Cancer.....	8	20
Tetanus.....	3	1
Mumps.....	19	0
Septicæmia.....	1	1
Anthrax.....	1	0

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 9; diarrhoea and enteritis, under two years of age, 26; dysentery, 1. The total mortality was 620, in an estimated population of 1,500,595, corresponding to an annual death rate of 21.48 in a thousand population. The total infant mortality was 138; under one year of age, 113; between one and two years of age, 25. There were 42 still births, 26 males and 16 females. The temperatures were seasonable. The total precipitation was 0.81 inch.

BOSTON AND NEW ENGLAND

The Hillsboro County, New Hampshire, Medical Society.

—The second annual meeting of this society was held at Nashua, on February 7th. The election of officers resulted as follows: President, Dr. George D. Lane, of Manchester; vice-president, Dr. Alonzo S. Wallace, of Nashua; secretary and treasurer, Dr. Atherton E. Blaycock, of Nashua. Dr. H. G. Rogers read a paper on Anæsthetics and Anæsthesia; Dr. Wallace, a paper on Acute Osteomyelitis; and Dr. Frank E. Kittredge, a paper on Two Cases of Brain Abscess.

The New Haven (Conn.) Hospital.—At a recent meeting of the directors of this institution the following appointments were made: Continuous physician, Dr. George Blumer; alternating physicians, Dr. S. D. Gilbert, Dr. W. G. Daggett, Dr. L. S. De Forest, Dr. C. J. Foote, Dr. Max Mailhouse; continuous surgeon, Dr. W. H. Carmalt; alternating surgeons, Dr. T. H. Russell, Dr. W. W. Hawkes, Dr. L. C. Sanford. Other appointments were: Dr. Henry L. Swain, laryngologist; Dr. Henry W. Ring and Dr. Arthur N. Alling, ophthalmologists; Dr. O. G. Ramsey, obstetrician; Dr. R. F. Rand, assistant obstetrician; Dr. C. J. Bartlett, pathologist; Dr. Herbert E. Smith, chemist; Dr. William Sorenger, x ray physician.

BALTIMORE AND THE SOUTH.

The Richmond (Va.) Academy of Medicine and Surgery.

—The annual meeting of this academy, held on Tuesday, February 12th: Intubation, by Dr. P. D. Lipscomb; Tetanus, by Dr. E. J. Moseley, Jr.; Report of a Case, by Dr. Robert S. Boshier.

The Medical Society of Washington County, Maryland.

—The following programme was arranged for a meeting of this society, held at Hagerstown, on February 14th: Exhibition of Clinical Cases; Observations on the Home Treatment of Tuberculosis, by Dr. W. S. Thayer, Baltimore; discussion opened by Dr. L. H. Keller and Dr. V. M. Reichard; at 8 p. m. Dr. Thayer was to give a public lecture: The Power of the Public in the Prevention and Spread of Tuberculosis.

The Mortality of Baltimore in January, 1907.—According to the report of the health department there were 1,041 deaths during the month of January, 1907, as compared with 906 for 1906, 854 for 1905, and 859 for 1904. That there was an unusual prevalence of measles, mostly among children, was shown by 214 cases of this disease being reported, as compared with 24 for the corresponding week of last year. Only four deaths were caused by measles. In the list of fatalities pneumonia leads, with 161 deaths, while 138 died with consumption. Of the number of deaths, 393 were white males, 387 white females, 148 colored males, and 113 colored females. There were 232 deaths of children under five years of age, being 22.29 per cent. of the whole number. The following infectious and contagious diseases were reported, as compared with the corresponding month of last year:

	1906.	1907.		1906.	1907.
Smallpox.....	14	..	Mumps.....	1	17
Diphtheria and pseudomembranous croup.....	146	133	Whooping cough.....	104	8
Scarlet fever.....	76	28	Varicella (chicken pox).....	27	12
Typhoid fever.....	32	13	Tuberculosis.....	155	99
Measles.....	24	214	Totals.....	479	585

The principal causes of death were:

	1906.	1907.		1906.	1907.
Typhoid fever.....	12	12	Apoplexy (congestion of the brain).....	30	41
Scarlet fever.....	2	2	Heart diseases.....	84	81
Measles.....	0	4	Bronchitis.....	24	26
Whooping cough.....	19	2	Pneumonia.....	148	161
Diphtheria and pseudomembranous croup.....	7	10	Diarrhoea and enteritis, under two years of age.....	5	7
Influenza (la grippe).....	8	30	Diarrhoea and enteritis, over two years of age.....	2	5
Dysentery.....	0	1	Bright's disease.....	71	80
Erysipelas.....	2	1	Pharyngeal septicæmia.....	4	..
Septicæmia (blood poisoning).....	5	5	Old age.....	18	29
Tuberculosis of the lungs.....	90	138	Suicide.....	5	12
Other tuberculous diseases.....	16	20	Hemorrhages.....	0	0
Cancer.....	45	49	Vermin.....	32	5

CHICAGO AND THE WEST

Statement of Mortality of Chicago for the Week Ending February 2, 1907, compared with the preceding week, and with the corresponding week of 1906. Death rates computed on United States Census Bureau's figures of midyear populations—2,107,620 for 1907, 2,040,185 for 1906:

	1906.	1907.	1907.
Total deaths, all causes.....	741	735	557
Annual death rate in 1,000.....	18.33	18.18	14.16
Sexes			
Males.....	396	397	244
Females.....	345	338	313
Ages			
Under 1 year of age.....	146	177	117
Between 1 and 5 years of age.....	89	85	74
Between 5 and 20 years of age.....	72	66	56
Between 20 and 60 years of age.....	286	283	244
Over 60 years of age.....	168	164	126
Important causes of death			
Apoplexy.....	12	8	10
Bright's disease.....	17	46	42
Bronchitis.....	20	26	8
Consumption.....	84	67	61
Cancer.....	26	27	4
Cerebrals.....	12	12	17
Diphtheria.....	15	16	12
Heart diseases.....	55	63	59
Influenza.....	12	8	8
Intestinal diseases, acute.....	23	31	32
Measles.....	4	13	0
Nervous diseases.....	20	29	20
Pneumonia.....	151	178	193
Scarlet fever.....	15	22	7
Suicide.....	5	8	11
Typhoid fever.....	1	6	4
Violence (other than suicide).....	40	46	29
Whooping cough.....	7	12	6
All other causes.....	153	152	115

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

February 9, 1907.

1. The Myelins and Potential Fluid Crystalline Bodies of the Organism, By J. GEORGE ADAMI.
2. The Relation of Alcoholism to Epilepsy, By MATHEW WOODS.
3. The Value of Temperance Instruction, By Mrs. M. M. ALLEN.
4. The Value of Instruction Regarding Alcohol, By WINFIELD S. HALL.
5. Infantile Head Nodding and Rotary Spasm, By C. C. WHOLEY.
6. A Case of Secondary Hypernephroma of the Iris and Ciliary Body, By BURTON CHANCE.
7. A Remarkable Case of Carcinoma of the Gallbladder in a Man Twenty-two Years Old, By FREDERICK PROESCHER.
8. Experimental Chronic Nephritis, By W. OPHÜLS.
9. Rheumatism of Childhood, By J. ROSS SNYDER.
10. The Clinical Aspects of Rheumatic Fever in Childhood and Their Significance in the Question of Specific Etiology, By CHARLES HUNTER DUNN.
11. Autointoxication in Relation to the Eye, By G. E. DE SCHWEINITZ.
12. Value of Tests for Invisible Hæmorrhage in Diagnosis and Treatment of Diseases of the Digestive Organs, By FRANKLIN W. WHITE.
13. Diagnosis Between Duodenal Ulcer and Gallstone Disease, By CHRISTOPHER GRAHAM.

5. Infantile Head Nodding and Rotary Spasm.—Wholey reports such a case. As to the ætiology he remarks that as the occurrence of such infantile head nodding and rotary spasm is usually between the ages of three and eighteen months, it has been ascribed to dentition. It has been confused with a form of epilepsy—eclampsia nutans or salaam convulsion—but in these cases there is disordered or transitory loss of consciousness, and such cases usually develop into the ordinary form of epilepsy. Osler speaks of the nodding spasm under conditions involving the spinal accessory, as it is the muscles innervated by this nerve which are chiefly affected. It is thought by some authors to be a habit spasm. In three of Hadden's cases the condition followed head injuries, and some of the obscure cases of nystagmus, he believes, come under this category of nodding spasm. The condition lasts several months, and while recovery is the rule, it is apparently uninfluenced by drugs, except that some cases seem to improve under the bromides. As to the treatment of his case, Wholey states that the condition remained unchanged for two weeks under small doses of Fowler's solution. No choreic movements were noticeable. Potassium bromide was then added to the treatment and the spasms became less frequent and pronounced after the third week, and after two months they were no longer noticeable.

8. Experimental Chronic Nephritis.—Ophüls selected for his experiments lead because it is the only substance of which we know with any degree of certainty that it produces chronic nephritis in man. In all his experiments he gave the poison by mouth because this mode of administration came closer to what occurred under natural conditions. In an attempt at reproducing a disease of such chronicity the smallest possible doses had, of course, to be employed; not too frequently, in order not to kill the animals (guinea pigs and dogs) prematurely, nor even to interfere too much with their general nutrition. In the case of lead it was easy to determine by blood examination whether the doses were large enough to produce any appreciable effect. Even after the very small doses which were employed the well known lead anæmia promptly developed. As it seemed that after a while the animals became accustomed to the metal, to a certain extent, the doses were slowly increased; still they were never

very high. The severe changes which resulted from the administration of a few grammes of lead in the course of a year or so are certainly a renewed proof of the extreme toxicity of this metal and a renewed strong argument in favor of very strict protective legislation with the object in view to prevent not only accidental lead poisoning, but also the introduction with the food of any substances which might have an irritating effect on the kidneys. The anæmia after a while assumed the character of a pernicious anæmia with marked decrease in the number of erythrocytes, with the appearance of many macrocytes and microcytes and some poikilocytes in the peripheral circulation. The nucleated red blood corpuscles were very numerous and many of them were of the megaloblastic type. At autopsy the bone marrow resembled that found in pernicious anæmia macroscopically. It contained an immense number of nucleated red cells, among them many megaloblasts. The liver and especially the spleen and the kidneys also were full of hæmosiderin. The changes were very much like those which can be experimentally produced by toluyldiamin. This extreme anæmia was the greatest obstacle encountered in the attempt at continuing the experiments for the desired length of time.

9 and 10. Rheumatism of Childhood.—Snyder writes that eliminating scurvy, pyæmic arthritis, and the soreness and stiffness of joints and muscles caused by cruel clothing, coddlings and bouncings, the cases of rheumatism occurring in nurslings are reduced almost to nil. From the eighth year onward an attack of rheumatism in a child resembles more or less closely the adult type. We now find the moderate or high fever, the sweats, the migratory arthritis, and in fact almost all that goes to make up our idea of the disease. It is more especially to cover the period between early infancy and the eighth or tenth year that a number of phenomena in combination and sometimes even in isolation, have been brought forward as manifestations of rheumatism. Of the conditions to be regarded at times as manifestations of rheumatism in the young, the following is a partial list compiled from various modern writings: Growing pains, wandering pains, gastric pains and pleuritic pains, torticollis, tonsillitis, chorea, tics, nose bleed; subcutaneous fibroid nodules; erythematæ, especially nodosum; cardiopathies, including endocarditis, myocarditis, and pericarditis; nephritis, asthma, bronchitis, pleurisy, pneumonia, Graves's disease, meningitis, conjunctivitis, keratitis, iritis, eczema, tetany, chilblains, herpes, urticaria, purpura, psoriasis, acid dyspepsia.—As to the prognosis, Dunn remarks that in his series of 300 cases, fifty-five died in the hospital, making the mortality of rheumatic fever in hospital cases, as high as 18.33 per cent.; 10 fatal cases, however, showed no evidence of acute infection while in the hospital. Taking the 223 cases of acute infection in the series of which forty-five were fatal, the mortality was 20 per cent. This figure is much higher than in adults, where acute infection is more exclusively confined to the joints. Cardiac failure was the cause of death in all cases. Of the articular cases, 7 patients died, or 7 per cent., while 20 patients died of acute endocarditis, or 14.3 per cent. Of the acute pericarditis cases, 18 died, or 31 per cent. The fatal articular cases all had acute endocardial manifestations. As a whole, they represent the mildest form assumed by rheumatic fever in early life. But in such a case with cardiac symptoms the prognosis is the same as in the cases of acute endocarditis. The severest form is pericarditis, with a high mortality. Only 17 patients in the entire series were discharged well. The remainder were discharged with a valvular lesion.

11. Autointoxication in Relation to the Eye.—De Schweinitz says that, although we do not know the entity of a single autointoxication except the acidosis

of diabetic coma, and although we know that no known auto-intoxication is to be attributed to any known end product of any known metabolism, we do know, from clinical analogy, at least, that auto-intoxications exist, even if their true nature is as yet a secret. We do know, too, that after food is swallowed and before the end products of assimilation are eliminated, there may be processes arising under abnormal conditions which yield poisonous products foreign to normal metabolism, the reabsorption of which may be followed by definite symptoms. We have reason to believe, in the absence of other causes, that under these conditions ocular troubles may also arise largely in the corneo-scleral and uveal tracts, and probably, in so far as the nervous apparatus is concerned, in manifestations to which we apply the term acute or chronic retrobulbar neuritis. We do not know whether these toxins, whatever they may be, actually are the only and sole cause of these conditions, but such examinations as have been made at least indicate that they may be considered accessory causes. They may be able to play a certain part in the production of the symptoms, and at times are probably the direct cause of their continuance, even when other more commonly accepted etiological factors have ceased to be active.

13. Diagnosis Between Duodenal Ulcer and Gallstone Disease.—Graham remarks that pain in cholecystitis is sudden and severe, usually has a wide field of radiation, comes with no regularity as to time, is rarely caused by food and as rarely eased by it, nor does the patient often trace his distress to it. There is no stomach history between the short sharp attacks; spasm of the diaphragm with dyspnoea is common, vomiting and gas, if present, are so only during the colic, and the relief from eructation and vomiting is not so marked as in ulcer. Nausea and intense retching may be followed by vomiting of a small amount of thin, yellowish, bitter liquid mixed with mucus. In duodenal ulcer pain comes in periods of attack lasting for days or weeks, is often sudden, may be severe, yet usually not that intense type of pain met in gallstones, but rather gnawing and burning in character. It may be irregular as to time of the separate attacks, but regular during the period of the stomach disturbance. The pain is clearly related to food, the intensity often modified by kind and quantity taken. Food eases for a time, the pain returning from two to four hours later. Hot drinks, soda, and irrigation give relief. Spasm of the diaphragm is rarely seen except in some cases of perforation. The chronic gallstone case, with impacted stone, ulceration and adhesions in which no jaundice appears and the stomach symptoms as gas, vomiting, burning distress, sour eructation, impaired appetite and dilatation predominate, and the pain is moderate and follows food, will too often be diagnosed as ulcer; while the duodenal case, in whose early history we can elicit only irregular attacks of sudden, sharp, intense pain of peritonitis or acute spasm (and with no obstruction or hyperacidity) we do not have gas, vomiting, or sour eructations, will as surely be mistaken for gallstones.

MEDICAL RECORD

February 9, 1907.

1. Fresh Air Treatment in Hospital Wards.
By W. GILMAN THOMPSON.
2. Resection of the Sigmoid Flexure,
By JOHN J. McGRATH.
3. Conservative Surgery in Severe Inflammatory Affections of the Uterine Annexa. By HIRAM N. VINEBERG.
4. The Cause of Common Baldness. By DELOS L. PARKER.
5. Some Potent Etiological Factors in Backward Children,
By M. NEUSTAEDTER.
6. A Case of Extensive Leucoplakia Beginning in Childhood, Accompanied in the Early Stages by Follicular Keratosis of the Skin, and Followed by Carcinoma of the Tongue.
By M. B. HARTZELL.

1. Fresh Air Treatment in Hospital Wards.—Thompson, referring to the hospitals situated in a location like New York, where the climate is so changeable, submits the following rules: Ward heating and ward ventilation should be capable of independent adjustment at all times. The night temperature of the ward should be at least 5° F. below the noon day temperature, which latter should not be above 68° F. or 70° F. The ward windows should be furnished with transoms and one or two movable separate panes, to admit of easy regulation and ventilation. The ward should be in communication with balconies or porches, on to which patients' beds can be moved through windows of the casement type. Such balconies need not interfere with the adequate lighting and ventilating of the ward, as proved at the Bellevue and other hospitals in which they have been used. The building of very large wards should be discouraged and a greater number of small adjacent rooms should be provided to admit of the scientific adjustment of the ventilation and temperature to suit the requirements of different patients. The windows of the ward, even on the coldest day, should be opened at least twice daily, in the early morning and late afternoon, for a few minutes to thoroughly change all the air in the room. During this time any patient may be covered temporarily with extra bed clothing if there be fear of exposure from draft. The same procedure should be carried out immediately after visiting hours. Day rooms should be provided for convalescents where they can obtain change of air and scene, and leave more fresh air for the bedridden patients in the wards. House staff and nurses should not only be taught ventilation theoretically, but made to put it into practice in the wards, and should be made to regard fresh air as of equal importance with fresh food.

3. Conservative Surgery in Severe Inflammatory Affections of the Uterine Annexa.—Vineberg, referring to the technique, states that while he is a strong advocate of the vaginal route, for many operations on the pelvic organs, the abdominal route, in his opinion, is the only legitimate one for the class of cases under consideration. To carry out successfully conservative surgery upon extensive and marked disease of the annexa requires easy accessibility, plenty of room, and good exposure to light. One needs to be in a position to be able to meet the complication of extensive injury to the intestine by careful surgical technique. In some of the worst of his cases, when the adhesions have been very thick and their separation has left a large, irregular, and ragged area in Douglas's *cul-de-sac* or on the posterior aspect of either broad ligament or of the uterus, it has been his custom to pack the area lightly with iodoform gauze and carry the end through the posterior vaginal vault into the vagina.

4. The Cause of Common Baldness.—Parker gives the result of an investigation on the cause of common baldness which has been carried on since 1887, and is still in progress. The forms under which baldness presents itself, with extremely rare exceptions, are three: 1. Common baldness (*alopecia vulgaris*) includes all cases of baldness in which the hair shedding occurs independently of any other disease, and, in addition, is limited as to its field of operation to the portion of scalp occupying the top of the head. What might be termed ordinary, everyday baldness is common baldness. Common baldness accounts for more than 90 per cent. of all cases of baldness. 2. *Alopecia areata*, on the other hand, refers to a form of baldness in which the hair shedding occurs sometimes in one, but oftener in several round or oval patches, which are located as a rule on the sides or back of the head. 3. Finally, *alopecia secundaria* is loss of hair occurring as a symptom or sequel of another disease. From his paper it

will be seen that common baldness depends for its existence on a double cause, one being the remote or fundamental cause represented by the absence of upper chest breathing, a condition that allows a poisonous substance to develop in the lungs; the other the direct or exciting cause, represented by the effect produced by this poisonous substance circulating in the blood. The author explains his theory that absence of upper chest breathing is the fundamental cause of common baldness, because it establishes conditions that permit a soluble poison (trichotoxine) to be formed from the residual air contained in the air cavities of a portion of the lungs, whence by a process of absorption it is taken up by the blood and is thus placed in position to exert its specific effect. That a poisonous substance circulating in the blood should limit its destructive action to the hair of the top of the head, as must be the case if the theory that is being considered is correct, was explained by the statement that the roots of the hair of the top of the head, by reason of lying over the hard, glistening and practically bloodless occipito-frontal aponeurosis, are deprived of the nourishment which the roots of the hair of other portions of the head and of the face derive from the soft, blood saturated muscular tissue with which they are in close relationship; and as a result the hair roots of the top of the head are of comparatively low vitality. In support of the contention that absence of upper chest breathing is the fundamental cause of common baldness evidence was presented that had been derived: (1) From observing cases of common baldness; (2) from treating cases of common baldness; (3) from experimenting on animals. These three points are explained in detail.

6. A Case of Extensive Leucoplakia.—Hartzell reminds us that leucoplakia is notoriously rebellious to treatment, and few local applications cause any perceptible improvement. For this reason it seems he calls attention to two remedies which have been of real service in his hands in the past year or two. These two remedies are weak ointments of salicylic acid, 3 to 5 grains to the ounce, applied several times a day, and the x ray, the latter having proved especially beneficial in two cases. In a long standing and very marked case affecting the mucous membrane of the lower lip, in which there were several small, thick, horny patches, and superficial ulceration, the careful use of the x ray was followed speedily by a complete cure. The utmost care should be taken in its use since the mucous membranes are extremely susceptible to its action, and too long exposures or too frequent repetition will surely do harm. The duration of the exposures should rarely exceed three minutes, and they should not be repeated oftener than every five days.

BRITISH MEDICAL JOURNAL.

January 26, 1907.

1. Some Common Errors in the Diet and Hygiene of Children, By A. F. VOELCKER.
2. Remarks on Post Partum Hæmorrhage, By J. F. LE PAGE.
3. Notes on the Treatment of Myoma of the Uterus, By J. F. JORDAN.
4. Cæsarean Section in a Case of Contracted Pelvis with Twin Pregnancy, By G. H. COWEN.
5. On the Cause of Acute Illness Supervening During Menstruation, By T. HOLMES.
6. Case of Obstructed Labor Due to Osteosarcoma of Pelvis, By M. B. RAY.
7. The Influence of an Excessive Meat Diet On Fertility and Lactation, By B. P. WATSON.
8. The Food Factor in the Twentieth Century, By G. H. SEALY.
9. Multiple Myeloma, By J. R. CHARLES and H. H. SANGUINETTI.
10. A Case of Scurvy Occurring in a Diabetic, By W. E. JONES.
11. Vaccination of the Cornea, By J. A. MENZIES and W. E. JAMESON.

1. Care of Children.—Voelcker begins his observations by insisting on the necessity for mothers to nurse their own infants, and this even when the amount of milk is insufficient and has to be supplemented by cow's milk. The heresy that the two do not agree is to be strongly condemned, for often the mother's milk will increase in amount and suffice as the sole food of the child. The weighing scales found in so many houses is often the cause of much distress, the whole family being upset for a few days because the baby has not gained in weight. In older children more attention should be paid to the time taken over the consumption of a meal. The too common habit of bolting food cannot be too strongly condemned, yet too little attention is paid to dawdling over meals, leading to fancifulness and fastidiousness. Conversation should be encouraged in the case of the former discouraged in the latter. The choice of food is too much influenced by consideration of its nutritive and laxative action. Fruit and cereals, for instance, are only too often used to excess. Given every day, they lose their laxative powers, while if restricted to three times a week they are very satisfactory. Green vegetables should not be insisted on if children object to them and are upset thereby. The aversion to fats, however, must be overcome, and this is best done by gradually increasing the amount taken with meals. A common error in clothing children is to exalt the decorative at the expense of the protective function. The no hat, no stockings, and no boot brigade is successful at present, but the fact remains that every child should be protected from neck to knee, if not to ankle, with suitable undergarments. Sandals are insufficient protection to the feet, there being constant risk of accidental inoculation with septic organisms, tubercle bacilli from expectoration, or even with tetanus. Too little attention is paid to the ventilation of baby carriages and bassinets; usually the child lies at the bottom of an unventilated hollow, the surrounding walls being impervious to air. A healthy child need never be kept off its feet if it wishes to walk. Even in active rickets they should not be kept quiet by force. The pace of the walking should always be considered, as well as the distance and locality. Most children are best awake out of doors, and put quietly to bed indoors. The idea of getting children to sleep while being bumped in a perambulator is bad. Children should, when necessary, be awakened to urinate; the fear that they will not go to sleep again is groundless. Baths are of course essential, but more care should be exercised in properly drying the children afterwards. When given at night the child should be put at once to bed, and not allowed to dawdle and play around the nursery.

2. Post Partum Hæmorrhage.—Le Page defines post partum hæmorrhage as a hæmorrhage which is the result of an atonic state of the uterine muscle, acquired, accidental, or constitutional. The one thing which should be immediately done, the one rational treatment in all cases, is to shut off the blood current along the uterine arteries by compressing the abdominal aorta. The uterus is atonic. Its gaping vessels are, or were, so long as any blood tension remained, pouring out blood. There is marked collapse. The nerve centres which control uterine contractions, and the higher centres which control cardiac action and respiration, are devitalized. The first indication is to prevent further hæmorrhage. The second is to revitalize the nerve centres which can only be done, by increasing the volume and current of the blood. The third indication is, having restored blood tension and nervous energy, to assist, now possible, uterine contraction. The author's treatment consists of the following steps *seriatim*. The pelvis is raised to cause the blood to gravitate toward the heart and brain and to prevent bleeding from the ovarian and uterine veins. The abdominal aorta is com-

pressed to immediately arrest arterial hemorrhage. Compression is best made against the spinal column beneath and below the umbilicus, with the outer ulnar portion of the left clenched hand. The pressure should at short intervals be made to slide from one part to another of the available three or four inches, to avoid injury to the network of sympathetic nerves around the vessel, and it should be continued until uterine contraction is secured, even if this be delayed for one or two hours. Its release must be very gradual. The arms and legs are raised to transmit their blood into the trunk, and then firmly bandaged to prevent the return of blood when they are lowered. By these means the blood tension is raised almost to normal in one or two minutes. The aseptic hand is then carefully passed into the uterus to detect any possible laceration of the body or cervix, any retained portion of placenta, and to afford a *point d'appui* for grasping and compressing the uterus from outside. The bandage must be kept on the limbs a long time and the blood allowed to return into them very slowly. The author has been in charge of about 5,000 parturitions, and thanks to this method of treatment, has never seen a death from post partum hemorrhage.

3. Myoma of the Uterus.—Jordan calls attention to the fact that even at the present day, many medical men preach the doctrine that fibroids of the uterus are only rarely dangerous, and that in most cases the operation is worse than the disease. If a fibroid causes no symptoms it should not be interfered with. But when it causes symptoms which call for medical relief, in the vast majority of cases, it should be removed. The men who decry operation are the ones who make it so by delaying operation until the patient is in extremis. Hysterectomy is the operation to be done in most cases, but myomectomy can be performed if the patient is under forty years of age, if pregnancy is coexisting, if a tube and ovary capable of performing their functions can be preserved, and if it can be done so as to leave a uterus practically sound. The great drawback is the danger of recurrence. The mortality of operation is about 2.6 per cent., while at the very least 30 or 40 per cent. of cases of fibroids would end fatally if left alone. Oophorectomy as a routine method of treatment is not to be compared to hysterectomy. Its mortality is as large, if not larger; it is quite as difficult to perform, and takes nearly as long; the immediate post operative condition is much more painful and distressing; the general convalescence is longer and not so easy; and, finally, the ultimate cure cannot be certain.

LANCET

January 26, 1907.

1. Erythema Nodosum and Rheumatism, By J. O. SYMES,
2. Spirillum Fever in Uganda. By R. U. MOFFAT.
3. X Rays in the Treatment of Carcinoma and Sarcoma. By C. WILLIAMS.
4. Two Cases of Traumatic Rupture of the Kidney, in One of Which a Single Kidney Existed, By J. G. ANDREW.
5. On a New Test for Sugar, By H. J. H. FENTON.
6. Observations on the Induction of Autovaccination in Tuberculosis and Other Chronic Glandular Infections by the X Rays (as Revealed by the Oponic Chart of the Former), By H. D. McCULLOCH.
7. Tracheotomy in Slight Respiratory Obstruction Associated with Febrile Toxæmia. By A. O. BISSON.
8. The Glandular Extract From Immunised Animals as a Curative Agent in Plague, By S. MALLANNAH.

1. Erythema Nodosum.—Symes states that two different views are held as to the nature of erythema nodosum. The more widely accepted view is that the condition is rheumatic in nature, like chorea, tonsillitis, endocarditis, and pericarditis. The other view, which is gaining ground every day, is that it is an acute in-

fective fever of a definitely specific nature. The evidence of relationship between erythema nodosum and rheumatism is conflicting. While the age incidence of the two coincides, yet there is a marked difference in their prevalence among the two sexes. Valvular heart disease is common in erythema nodosum, yet the seasonal rise of autumnal incidence so characteristic of rheumatism does not occur. The commonest form of arthritis is pain in the joints without redness or swelling; the pains are never very severe, however, and are not relieved by salicylates. In the majority of cases there is no fever; in others it may rise to 103° F., a peculiarity being that the rise may take place some days before the arthritis or rash come on, and may persist for several weeks in spite of the administration of salicylates. Other forms of erythema—papular and circinate—may occur. Bronchitis frequently accompanies the disease; it is seen less frequently with acute rheumatism. Phlyctenulæ are said to occur in one third of the cases; they are rare in rheumatism. Relapses are of frequent occurrence in rheumatism, but rare in erythema nodosum, and second attacks are most exceptional. The delirium in the latter is often the result of the large doses of salicylate which are given, the patients being quite intolerant of the drug. In conclusion, the author states that there is much to support the view that erythema nodosum is a specific acute febrile disorder; that infection takes place through the tonsils or lungs; that after a prolonged incubation period and period of prodromal symptoms a specific rash appears; and that convalescence is accompanied by profound anæmia and malaise.

3. X Rays in Cancer.—Williams states that in his opinion all the theories which have been advanced to account for the influence of the x rays on malignant growths, point to a leucocytosis being ultimately produced in or around the growth. X rays have a special selective action on new growths—the cells break down and are invaded by leucocytes and absorbed, leaving a network of dense connective tissue containing vessels with thickened walls. Some sort of reaction is absolutely necessary; this may take a visible form of redness in the tumor mass itself if it protrudes through the skin, or round the edges if an ulcer, swelling or hardness of the tumor, increased heat, etc. If a discharge be present, it soon takes on a more healthy action. There may be elevation of temperature and sweats from pent up pus. Mild constitutional symptoms, yielding to cessation of treatment, may be present in the case of large nonulcerated growths, in which there are no exits for the products of disintegration, and the patient having to absorb and get rid of them by the usual channels. It would seem advisable to use the x rays in all cases of malignant growth prior to operation, especially in the hard and usually slower growing varieties. The mildest doses should be used and any changes carefully noted. Postoperative treatment may be used directly the scar is healed, or even before that time if healing is sluggish. A nodule of the size of a pea should have immediate treatment, whether in the scar or not. The best results are obtained where the disease is strictly local. The author's immunity from burns to patients he attributes to the use of medium to hard tubes. Except where the growth is sharply localized, it is best not to screen the surrounding parts, so that the rays may reach scattered deposits in the deeper tissues. Fair people burn more quickly than dark, and dark people pigment the more easily. The pain of malignancy can be greatly alleviated by the x rays; this is more true of "growth" pain, than of that due to dragging or contraction of the scar. Pain due to pent up discharge or to disintegration of malignant cells can only be relieved by absorption, or by an exit naturally or artificially produced. Where there is much glandular enlargement, the actually infected glands

usually become of stony hardness before they disappear. So frequently do enlarged glands depart that it is probable that often they are only affected with a simple inflammation of irritation of the secretions of the original growth and not by actual infection.

4. Rupture of the Kidney.—Andrew reports two cases of traumatic rupture of the kidney occurring in boys aged seven and fourteen years, respectively. In one case the ruptured kidney was a solitary one, an example of fusion of kidneys on the right side; that case proved fatal. The patient of the second case recovered. Both patients fell on the loin, and the injury was direct; blood was present in the urine immediately after the accident, and the ruptured kidney could be felt by palpation, extending around the abdomen towards the umbilicus and tender to the touch. In both the swelling was clearly behind the peritonæum.

5. On a New Test for Sugar.—Fenton describes a new method for the detection of sugars, which is of great delicacy. The reaction depends upon the fact that all carbohydrates of the hexose or polyhexose type (such as dextrose, cane sugar, milk sugar, or maltose) yield a certain amount of bromo-methyl-furfural when acted on by hydrobromic acid under appropriate conditions; and, further, that the latter substance reacts with malonic ester in the presence of alkalis, giving rise to a substance, the solutions of which exhibit a powerful blue fluorescence. The conditions most favorable for the action of hydrobromic acid are obtained when phosphorus tribromide is dissolved in some inert solvent, such as toluene, and the solution is heated with the carbohydrate in the presence of water; excess of water, however, must be avoided.

6. X Rays and Tuberculosis.—McCulloch attempts to demonstrate that the mechanism of the therapeutics of x rays rests upon the induction of an autovaccination, subsequent to the resolvent action of the x rays upon the rudimentary neoplastic encapsulating tissues about the tuberculous glands, thus rendering the vaccine accessible to the blood stream. Its effects may be shown by minute temperature reactions, accompanied by similar advances in the opsonic index without negative phases, tested by the periodic estimation of the opsonic index to the tubercle bacillus.

LA PRESSE MEDICALE.

January 23, 1907.

1. The Professional Ethics of the Physician,
By Professor A. PINARD.
2. The Alimentation in Pulmonary Tuberculosis,
By CH. MALIBRAN.
3. Cold Baths, or the Application of Cold to the Precordial Region,
By R. ROMME.

2. The Alimentation in Pulmonary Tuberculosis.—Malibran considers that the indicated alimentation varies with different patients, and divides the latter into three classes: (1) Those with a digestive apparatus functionally competent, but with no appetite; (2) those with a digestive apparatus functionally competent and with a maintained appetite; (3) those with dyspepsia either with or without anatomical changes in the digestive tract. Loss of appetite without dyspepsia he ascribes to either the fever or a neuropathic condition. In the former case, if antifebrile treatment does not suffice, he recommends from 60 to 200 grammes of sugar a day, or six yolks of eggs, 20 grammes of gelatine and from 100 to 150 grammes of mutton pulp divided into three meals. The mutton pulp is usually taken in bouillon. In nervous anorexia a search must be made for agreeable forms of aliment; in other words, the appetite must be tempted. When there is appetite and no dyspepsia he gives four meals, at the first, cod-liver oil; if tolerated, two eggs, or their yolks, farinaceous soup, bread, butter, milk, and honey; at the second, two eggs, rice, macaroni, lentils, beans, wheat, a single plate of some meat, or a preparation of meat

jelly, or raw meat, and a large portion of cheese. He considers it better to have the farinaceous dish precede that of the meat. For drinking water, water and wine, beer, or milk may be given according to the individual case. The third meal is like the first, with the omission of the oil and the eggs; the fourth, is a variation of the second. When dyspepsia is present it is essential that it should disappear before any increase in alimentation is attempted, because the result is the same whether it is purely functional or the result of gastritis, supraalimentation is apt to aggravate it. Therefore, the dyspepsia itself demands primary attention.

3. Cold Baths, or the Application of Cold to the Precordial Region.—Romme reviews the article published by Leduc recently in *La Province médicale* in which the latter discusses the ill effects sometimes produced by placing fever patients in cold baths, and recommends the application of cold to the precordial region as a simple and easy procedure which is not attended by danger, fatigue, or perturbation to the patients, and yet efficacious in the reduction of the temperature.

LA SEMAINE MEDICALE.

January 23, 1907.

1. Œsophagojejunogastrostomosis, a New Operation for Impervious Stricture of the Œsophagus,
By Professor ROUX.
2. The Effect of Dechloruration Upon the Constantly Slow Pulse and the Interpretation of This According to the Myogenic Theory,
By E. ENRIQUEZ and L. AMBARD.

1. Œsophagojejunogastrostomosis.—Roux proposes a rather complicated operation in which a portion of the jejunum is resected, with careful preservation of its mesenteric blood supply, one end is carried upward beneath the skin of the thorax to the throat, where it is joined to the œsophagus, and the other end is inserted into the stomach. The remaining portions of intestine, whence the portion of jejunum has been removed, are reunited by means of a Murphy's button.

2. The Effect of Dechloruration Upon the Slow Pulse.—Enriquez and Ambard say that a prolonged dechlorating régime is able in certain cases to restore an abnormally slow pulse to a normal frequency. In the myogenous theory of the slow pulse it is held that abstraction accomplishes the primordial rôle of the vagus and sympathetic nerves on the movements of the heart, that the cardiac muscular fibre suffices to give a motor influence to the entire organ, and consequently that the heart can beat rhythmically without the cooperation of any of the intracardiac nerves. The authors come to the conclusion that in those rare cases in which deprivation of the chlorides change the action of the heart from slow to normal and in which a reversal is obtained by the reintroduction of chlorides into the food, the chlorides exert a deleterious action on the muscle aside from any intervention of the nervous system.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT.

January 22, 1907.

1. The Influence of Painful Points Upon the Cardiac Action and the Blood Pressure,
By RUMPF.
2. Report of the First Thousand Births Under Scopolamine Anesthesia,
By GAUSS.
3. The Use of Scopolamine-Morphine in Obstetrics,
By PRELLER.
4. With Regard to the Technique of Scopolamine-Morphine Anesthesia in Abdominal Surgery and Laparotomies for Gynecological Purposes, By PENKERT.
5. Contribution to the Operative Treatment of Profuse Hemorrhages From the Stomach Endangering Life,
By HIRSCHL.
6. Concerning Operations on the Hands and Their Preparation,
By VOGEL.
7. Strangulated Hernia of Appendices Epiploicæ,
By MOHR.

8. Alcohol in Obstetrics and Gynæcology.

By THEILHABER.

9. Concerning Nervous Eructations.

By ADLER.

10. Casuistic Contribution to the Ætiology of Invagination of the Intestine.

By FISCHER.

11. Extraction of Foreign Bodies From the Abdominal Cavity.

By DEHNER.

12. Foreign Bodies Introduced Into the Urethra.

By GROSSE.

13. Venous Thrombosis and Coagulability of the Blood.

By SCHWAB and SALVENDI.

14. Dr. Ferdinand Battlehner.

By THUMM.

1. The Influence of Painful Points Upon the Cardiac Action and the Blood Pressure.—Rumpf reports two cases in which neuralgia and painful points caused persistent pain after recovery from accidents and exercised a deleterious effect upon the action of the heart. Taken together with the author's previous observations and those of Mannkopff and Lederer he finds that the effects recorded in such cases are (1) An acceleration of the heart's action; (2) a transient retardation followed by acceleration of the heart's action; (3) a small pulse; (4) an irregular pulse; (5) acceleration associated with these mentioned changes. He instituted a number of experiments on other patients with neuralgias or points tender on pressure, and found that irritation of these places produced: (1) A simple acceleration of the heart's action; (2) a brief primary slowing of the heart with subsequent acceleration; (3) diminution in the size of the pulse; (4) occasionally irregularity of the pulse; (5) cyanosis of the face; (6) lowering of the blood pressure; (7) increase of the blood pressure. He found also that all of these symptoms disappeared shortly after the removal of the source of irritation.

2. Report of the First Thousand Births Under Scopolamine Anæsthesia.—Gauss presents an analysis of the statistics taken from the Freiburger Universitäts Frauenklinik, with particular reference to the mortality among both the women and the children, the danger of hæmorrhage, duration of labor, and the frequency of operative intervention. Only one mother was lost in the first five hundred cases, twenty-three in the second. The mortality among the children was only about one fourth as great as it was during the years 1895 to 1904, before this form of anæsthesia was employed. He states that the morbidity of the mothers is not greater than under other conditions, the duration of labor seems to be prolonged, and the frequency with which the application of forceps is necessary is increased.

3. The Use of Scopolamine-Morphine in Obstetrics.—Preller, dealing with the same subject as Gauss, gives 70 per cent. of the cases of narcosis as successful, 18 per cent. as in great part satisfactory, and 12 per cent. as giving bad results. He states that in from 20 to 25 per cent. of the patients the action of the heart is affected and that labor is apparently prolonged in from 20 to 30 per cent. of the cases. His conclusions agree pretty well on the whole with those of Gauss.

4. Technique of Scopolamine-Morphine Anæsthesia.—Penkert describes with illustrations an apparatus for the lumbar injection of solutions of scopolamine and the technique of its employment.

5. Operative Treatment of Profuse Hæmorrhage from the Stomach.—Hirschel reports a case in which a man, twenty-nine years of age, was seized with a hæmorrhage from the stomach so severe and persistent that his life was threatened. Laparotomy was performed, the stomach opened, an ulcer found in its lesser curvature not far from the pylorus and excised. The patient recovered.

7. Strangulated Hernia of Appendices Epiploicæ.—Mohr reports another of the few recorded cases of this nature. He found two thickened and adherent appendices epiploicæ in the hernial sac of a man, sixty-two years of age, who had presented symptoms indicative of a strangulated omental hernia.

8. Alcohol in Obstetrics and Gynæcology.—Theilhaber presents an energetic paper on the harm which he states is the result of the prescription of alcoholic drinks in many cases of pregnancy and lactation, as well as in various gynæcological diseases, and urges that the medical prescription of wine, cognac, and other alcoholic drinks be confined to those rare cases in which an indubitably beneficial effect is to be expected from their administration.

10. Ætiology of Invagination of the Intestine.—Fischer reports a case in which a man was kicked by a horse, received a severe contusion on his left arm, and was rendered unconscious. About an hour after he regained consciousness he began to complain of pain in his abdomen. On the following day the pain had increased, and symptoms of intraabdominal injury were present. The abdomen was opened and an invagination found about the junction of the jejunum and ileum. The author is of the opinion that at the time of the accident the patient received a contusion of the abdomen which produced either a partial local spasm, or a complete paralysis of the loop of intestine which lay in such a position as to be affected by the contusion, and that this partial spasm or total paralysis, together with the maintained peristalsis of the rest of the intestine, caused the invagination.

11. Extraction of Foreign Bodies from the Abdominal Cavity.—Dehner reports a case in which a child, two and a half years old, swallowed a candy cherry to which a wire 7 cm. long was attached. On the following day the mother brought the child to the hospital because it had lost its appetite. The child was under observation for a week, during which time no urgent symptoms appeared and the wire had not been voided. It was noticed that the child lay with its right thigh flexed on the abdomen, and that any attempt to extend the high caused pain. Nothing wrong could be made out by palpation, but by means of the x rays the wire was located in the ileocæcal region. Laparotomy was performed and the large intestine opened, but for some time the wire could not be found. Finally, it was discovered in an abscess on the psoas muscle. It had perforated a loop of the ileum and thus escaped into the peritoneal cavity and found its way to the place in which it was discovered.

12. Foreign Bodies Introduced Into the Urethra.—Grosse reports a case in which a lead pencil was removed from the bladder of a man, forty-one years of age, who had introduced it into his urethra three days before.

ZENTRALBLATT FUER CHIRURGIE.

January 12, 1907.

I. Appendicitis.

By E. HAIM.

1. Appendicitis.—Haim says that appendicitis of streptococcus origin—a severe, diffuse type—appears endemically, mainly in March and April, and in October and November. At other seasons it is comparatively rare. At certain times certain symptoms seem to appear more frequently; thus, the author observed repeatedly several cases with herpes or with jaundice. The types of appendicitis due to infection with the colon bacillus appear to run similar courses at all times of the year. The author says that in northern countries the colon bacillus and pneumococcus are most frequently found; in Germany, France, and America mainly streptococci and colon bacilli; in Italy and England mostly the colon bacillus alone. These bacteriological findings may account for the differing mortality in these countries. Streptococcus appendicitis is most frequent in young persons, and its prognosis is better in them and in children than in older persons in whom it is usually fatal, although less common. These cases, to offer a good prognosis, must be operated in as soon as they are seen. The diagnosis of

the various types can usually be made from the symptoms.

January 19, 1907.

1. Tennis Elbow, By G. PREISER.

1. **Tennis Elbow.**—Preiser maintains that the form of elbow joint disease, known as "tennis elbow," originates in the effort of the player to hit the ball when it is either near the ground or on the level of the axilla. This can be brought about only by a combined flexion and supination of the forearm. The ulnar side of the hand then describes an arch through volar and ulnar flexion; in the elbow there is also supination plus flexion; the supinator brevis and brachialis internus muscles performing these functions. Preiser does not think there is a rupture of the supinator brevis because the symptoms come on gradually; and in his cases pronation and supination without simultaneous flexion were painless with the elbow held quietly flexed. The condition is difficult to cure. The playing of the game must be interdicted, and massage of the infiltrated capsule is useful. Hot baths and packs for the elbow were also found efficient.

ZENTRALBLATT FUER INNERE MEDIZIN.

January 12, 1907.

1. The Etiological Role of the Vasomotor Centre in Neuroses of the Heart, Basedow's Disease, and Angeioneuroses of the Skin, By R. POLLAND.

1. **The Vasomotor Centre.**—Polland concludes that a certain group of mostly chronic diseases, such as neuroses of the heart, paroxysmal tachycardia, Basedow's disease, angeioneuroses of the skin, etc., are mainly dependent for their symptoms upon an important participation of the vascular nervous system. Apparently, the cause of these diseases lies in a greatly increased irritability of the vasomotor centre in the medulla oblongata. The symptoms on the part of the heart and bloodvessels originate through reflexes which may be evoked either peripherally or centrally. An increased sensibility of the reflex paths is also necessary; the reflexes may arise only after the lapse of a certain length of time, possibly in consequence of inhibitory influences on the part of the brain, and are not necessarily closely connected with the actual site of the irritation.

THE AMERICAN JOURNAL OF OBSTETRICS.

January, 1907.

1. The Nature of Shock, By E. BOISE.
2. A Surgeon's Criticism of Gynecology, By C. W. BASSETT.

3. A New Technique for the Fixation of Floating Kidney, With Special Reference to the Utilization of Long-year's Ligament, By C. A. L. REED.
4. Anterior Vaginal Cœliotomy. Its Technique, Indications, and Limitations, By S. W. BANDLER.

5. Preservation of the Vault of the Vagina in Pelvic Operations, By A. VANDER VEER.

6. Some Observations and Experiences Respecting the Symptoms and Treatment of Atresia Vaginae, By A. P. CLARKE.

7. Abortions, By J. A. HALL.

8. A Discussion on Perineal Tears, By J. E. CANNADAY.

9. Difficulty Encountered with Foetal Arms in a Breech Labor, By F. REDER.

1. **The Nature of Shock.**—Boise believes that the low blood pressure during shock depends on cardiac spasm. Severe stimulation of peripheral nerve trunks will cause primary rise in pressure with ultimate persistent fall if the vasomotor centre and the stellate ganglia are undisturbed. But removal of these ganglia, the vasomotor centre remaining undisturbed, prevents any marked variation in pressure, however, severe the stimulation. Crushing the testicles will cause immediate and pronounced fall in pressure with no primary rise if the stellate ganglia are undisturbed. If they are destroyed no low pressure can be produced, however normal the vasomotor centre. Irritation of the peritonæum causes a persistent fall in pressure with no pri-

mary rise or evidence of constrictor stimulation. Under this condition the arteries become smaller and pulseless and the veins distended. Autopsies on those who have died in shock show that the heart and arteries are usually empty, the veins engorged and tense, and the heart contracted in systole. Veratrum and veratrone were injected in animals in which shock had been induced, and it was found that it stimulated the cardiac inhibitory mechanism antagonizing the irritant stimuli and increasing diastole. It thus allowed an increased intake and output of blood by the heart.

4. **Anterior Vaginal Cœliotomy.**—Bandler finds the following indications for this operation: 1. As an operation of choice for movable retroflexion or retroversion of the uterus without descent in connection with various fixation operations. 2. For descent of the uterus, when the latter is heavy, and the abdominal walls fat or relaxed, it should be combined with vaginal suspension or fixation. 3. For cystocele with or without uterine displacement, followed by vaginal suspension or fixation. 4. For prolapse of a heavy uterus, followed by high amputation of the cervix and high perineorrhaphy. 5. For the determination of such conditions as sterility, and for suspected ectopic gestation. 6. For conservative or minor operations on the annexa, with slight adhesions, and with retroflexion or retroversion, together with descent or cystocele. 7. For the production of sterility by the exsection of a portion of the tubes. 8. For the removal of small movable tumors of the ovary or tube. 9. For small fibroids of the uterus which may be removed by myomectomy. 10. For hysterectomy, if the uterus is not too large, if the broad ligaments do not require extensive resection, and if there is no danger of cutting into a degenerating fibroid. Also for hysterectomy when there is double pyosalpinx and chronic uterine inflammation.

5. **Preservation of the Vault of the Vagina in Pelvic Operations.**—Vander Veer states that the scope of his paper includes high amputation of the cervix, vaginal hysterectomy, removal of fibroids through the vaginal vault, and removal of appendages from below; also supravaginal hysterectomy, operations upon the tubes and ovaries, fixation of the uterus, myomectomy, and some other operations from above. Normal tissue must sometimes be sacrificed in these cases, though the chief aim should be to remove only that which is diseased. In vaginal hysterectomy for cancer, as well as for other conditions, the vaginal vault cannot be spared, and it will sometimes be inevitable that shortening of the vagina, irritable bladder, and adhesions to the rectum will ensue. Preserving the contour of the vaginal vault as essential not only on account of the support which is given to the pelvic contents which remain, but because of the fact that by taking such precautions the function of coitus is not interfered with, while the vascular and nerve relations are much less disturbed than would otherwise be the case.

ANNALS OF SURGERY.

January, 1907.

1. End to End Arteriovenous Angiorrhaphy, By L. LILIENTHAL.

2. Rotary Dislocations of the Atlas, By E. M. CORNER.

3. Occlusion of the Portal Vein Due to Surrounding Inflammatory Adhesions, By G. WALKER.

4. Obliteration of the Stomach as a Result of Gastric Ulcer. Duodenostomy, By J. B. BULLITT.

5. Typhoid With Double Perforation of Ileum and Perforation of Gallbladder, By O. G. T. KILIANI.

6. Intestinal Intussusception, By R. C. COFFEY.

7. Resection of Ten Feet Two Inches of Small Intestine, By E. STAEHLIN.

8. Fractures of the Os Calcis and Astragalus, By H. CABOT and H. BINNEY.

9. Old Fracture of the Tarsus, By L. W. ELY.

10. Colossal Dermoid Cyst of Ovary of Over Fifty Years' Growth, By H. F. BROWNLEE.

11. Excision of a Hypernephroma Weighing Four and a

12. Intraperitoneal Rupture of the Urinary Bladder.
By W. S. CHEESMAN.
By E. QUICK.
13. Drainage of the Prævisical Space Through the Perinaeum in Suprapubic Cystotomy, By W. T. BELFIELD.
14. Drainage of Prostatic Abscesses Through the Ischio-rectal Fossa, By W. C. LUSK.
15. Silverized Catgut. A Study of the Method of Crédé for Sterilizing Catgut Without Heat, By J. E. BLAKE.

16. Note on Gonorrhœal Osteomyelitis, By R. C. CUPLER.

1. End to End Arteriovenous Angiorrhaphy.—Lahentia thinks that in a case of impending gangrene of an extremity due to interference with the arterial blood supply, an arrest of the necrotic process may be possible, as shown by the experimental work of Carrel and Guthrie, by diverting the arterial current into the veins. The following conditions would seem to him to justify such an attempt: (1) Threatened gangrene due to embolism; (2) threatened gangrene due to thrombosed aneurysm; (3) threatened gangrene due to traumatism, with great destruction of arterial tissue; (4) malignant neoplasm involving important arteries, and in which extirpation would threaten the vitality of the part; (5) angiosclerotic gangrenes. Inasmuch as the arteries harden, thicken, and become occluded, as a rule, long before such changes occur in the veins it was hoped that if the gangrene could be averted a return of the threatened trouble might be deferred or even prevented by a suitable course of general treatment. A case which was thought to be suitable was finally found and the femoral artery and vein were united in Scarpa's triangle. Severe shock attended the operation, though no blood was lost then or subsequently, and the patient succumbed in thirty-one hours. The author hopes that this most important subject may receive further investigation.

2. Rotary Dislocations of the Atlas.—Corner has collected twenty cases of this accident, including two of his own. It is not necessarily fatal and, in all probability, has been frequently overlooked. Skiagraphy renders its diagnosis comparatively simple. Clinically the violence causing the accident is usually applied to the front and top of the head. There are no symptoms of paralysis or anaesthesia, or spinal concussion. The neck is painful to touch and motion, is stiff and capable of little movement. The head is flexed and turned usually to the right. The chin is directed to the side on which the transverse process is rotated backwards. The side to which the head cannot be rotated is that which is dislocated. There are five chief points of diagnosis, the position of the head, the positions and fixity of the transverse processes of the atlas, the examination of the pharynx, and the skiagraph of the lateral view of the neck. If the condition has existed a fortnight to a month, and the odontoid process is intact, an anæsthetic may be given. Spontaneous reduction may then occur or it may be accomplished by gentle traction of the head and rotation. This is to be followed by suitable bandaging. If the odontoid process is broken the head should be immobilized for a month, and the dislocation then reduced under an anæsthetic. If reduction is not accomplished a poroplastic collar should be worn and a certain amount of movement will ultimately return.

4. Obliteration of the Stomach.—Bullitt reports such a condition resulting from gastric ulcer of four years' duration. The condition offered the alternatives of gastrectomy and enterostomy. The latter was chosen, the duodenum being secured to the chest wall. Feeding through this opening has been continued more than a year, the patient's condition being very good. Exclusion of the stomach from the digestive tract appears to have had no appreciable effect on the process of digestion. Further surgical procedure in this case is, at present, not indicated.

6. Intestinal Intussusception.—Coffey thinks the diminished mortality in gastrointestinal surgery is due to the fact that (1) formerly patients were moribund before the condition was diagnosed; (2) the operative technique has greatly improved. The misleading feature in intussusception is that obstruction is sometimes incomplete, and there may be no distention. The most frequent causes of this condition are: (1) A congenital laxness of the structures near the ileocaecal valve; (2) a partial or complete intestinal obstruction by a growth or some form of constriction; (3) the presence of a pedunculated tumor within the lumen of the intestine. Early diagnosis and operation within twenty-four hours offer the best chances of recovery.

ARCHIVES OF PEDIATRICS

January, 1907.

1. A Clinical Study of Relapses in Typhoid Fever of Children, By H. KOPLIK and H. HEIMAN.
2. The Teaching of Scientific Infant Feeding, By H. D. CHAPIN.
3. The New Siphon Aspirator, By F. HUBER.
4. A Case of Paralysis of the Abducent Nerve Following Influenza, By A. S. WILNER.
5. A Case of Septic Endocarditis with Recovery, By W. C. GARDNER.
6. Treatment of Scarlet Fever, By I. L. POLOZKER.

1. Study of Relapses in Typhoid Fever.—Koplik and Heiman conclude that relapses in typhoid fever are more common in children than in adults, the excess being about fifteen per cent. The mortality with such relapses is very low. The usual duration of a relapse in a child is one to two weeks. As a rule, the temperature is continuously high between a rapid rise at the outset and a rapid fall to normal at the termination of the relapse. A constant symptom in addition to the prolonged temperature elevation is enlargement of the spleen. Roseola is present in seventy-five per cent. of cases, leucopenia in sixty per cent. and mild abdominal symptoms in fifty per cent. of the relapses. Complications in the relapses are mild and infrequent. There are no reliable premonitory signs of relapse in the phenomena of the interpyrexial period nor in the course, duration, and severity of the original attack. Persistent enlargement of the spleen after defervescence occurs in quite a number of cases and a relapse after a mild primary fever is not as likely to be repeated as one which follows a severe original attack.

2. The Teaching of Scientific Infant Feeding.—Chapin thinks the subject of artificial infant feeding cannot progress as it should or be on a scientific basis until certain principles are established beyond dispute, which will not have to be propped up by mere authority, and which will be almost self evident. This science must be established as others have been by observing facts and phenomena and then inducing general laws and principles. An uniform nomenclature should first be established, its terms being used in a restricted and definite manner. An example of the present confusion is seen in the variety of purposes which the term caseinogen is made to serve. The author thinks, in respect to this term, that it would be more scientific to state the form of casein that is being fed and not use a blanket term that covers either normal milk or milk, the digestive properties of which have been partly or completely changed. As a sample of the changes he would recommend in reporting feeding cases, he suggests that the form in which casein may be given be stated according to the following table:

Single distilled milk	.....	Normal milk
Milk and cream	.....	Normal milk
Milk and cream	.....	Normal milk
Milk and sodium citrate	.....	Sodium casein.
Buttermilk	.....	Casein lactate.

6. Treatment of Scarlet Fever.—Polozker sums up his suggestions as follows: 1. More thorough isolation

of the patient. 2. Isolation of other members of the family who come in contact with the patient, especially children. 3. More care from the physicians and attendants. 4. More thorough disinfection of premises after attendance upon a patient has ceased. 5. Early diagnosis and more careful watching of mild cases. 6. The use of antistreptococcus serum in all cases which are likely to be severe or be accompanied by any complications. 7. The removal of hypertrophied or diseased tonsils and adenoids in children. 8. Frequent examination of the urine in the course of the disease. 9. Continued care of the patient until desquamation is over and all complications have subsided. 10. Enforced absence from school until the extreme limit of danger from infection is over. 11. Refusal of the physician to attend surgical and obstetrical cases while attending exanthemata; such cases as the latter ought to be treated by a specialist. 12. Constant efforts to inform the public as to the terrible results of this disease and its complications, and agitation for more rigid health laws.

Letters to the Editors.

OXYGENATED BEVERAGES.

NEW YORK, February 4, 1907.

To the Editors: In a recent issue of the *New York Medical Journal* there appeared an editorial comment on the subject of the use of oxygen as an aerating agent for table waters or medicinal preparations. The idea is by no means new, having been suggested some twenty years ago by a London firm of aerated water makers, but, like Banquo's ghost, it crops up periodically to cause amusement to the initiated and more or less consternation to some of those engaged in the manufacture of aerated waters, who imagine they see in the suggestion the approach of ruin for themselves or at least enormous expense for change of plant. In accordance with present day methods of criticism it would be an unfortunate oversight to fail to mention that the repeated cropping up of this suggestion is not unassociated in certain quarters with ideas of "graft."

To the uninformed the idea of an "oxygenated" beverage appeals enormously. What could be more enticing than a beverage which would stimulate, but would not inebriate, or a medicinal product which, in theory at least, would fulfill all the contentions for the patent medicine man's "tonic"? In present day vernacular, "there's millions in it."

Unfortunately, however, the suggestion was tried long ago and found wanting, for reasons easily apparent to any one with a smattering of chemical knowledge. Oxygen is a *tasteless* substance, very sparingly soluble in water. Consequently a water charged with oxygen loses almost all of its gas as soon as the bottle is opened, leaving a very flat, insipid solution. Further, in the case of flavored beverages the oxygen in a short time materially alters the character of the flavoring agent, owing to chemical action between the two substances, possibly due to the formation of minute amounts of hydrogen dioxide, the presence of which would also tend to reduce the palatability of the beverage. Finally, it is now very generally admitted that oxygen in the molecular form is therapeutically inert, and that its introduction into the stomach simply gives rise to feelings of distention without any of the exhilarating effects longed for.

On the other hand, carbon dioxide, which is usually used for charging beverages, is much more soluble in water than oxygen, and some of the gas combines chemically with water to form the unstable carbonic acid, which adds materially to the flavor and piquancy of the drink. The experience of manufacturers gen-

erally is that a satisfactory substitute for carbon dioxide has yet to be found.

In conclusion, I may add a word with reference to the suggestion frequently made that aeration would improve the taste of certain objectionable medicinal preparations. Especially has this been recommended in the case of codliver oil. Some years ago I prepared some codliver oil charged with carbon dioxide, which is rather freely soluble in the oil. The addition preserved the oil beautifully, and when the product was discharged from a siphon, there was yielded a very pretty looking dose which was very readily taken. But—I can taste that oil yet.

E. H. GANE.

Proceedings of Societies.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

One Hundred and First Annual Meeting, Held in Albany on Tuesday and Wednesday, January 29 and 30, 1907.

The President, Dr. JOSEPH D. BRYANT, of New York, in the Chair.

(Concluded from page 286.)

Syphilitic Lesions of the Eyelids were the subject of a paper by Dr. FRANK J. PARKER, of New York. He began by stating that the appendages of the eye might be the seat of any or all of the lesions of the different stages of syphilis. The eyelids might often slough, but this was especially true of infants. True gummata were seen to occur between the tarsal cartilage and the conjunctiva. They ulcerated rapidly and might in some cases cause lacrymal stenosis.

Inflammation and swelling of the tarsal cartilage were due usually to syphilis. Chancres of the eyelids were among the rarer forms of extragenital infections. They were more common in males and on the right side. Kissing might be the means of disseminating them or the expectoration might inoculate innocent individuals, particularly physicians examining syphilitic throats. The danger of common towels in public places was mentioned. The lesion might begin near the margin and resembled epithelioma. Enlarged glands in the neck were common. A report of two cases was given.

The writer recommended in the treatment the use of internal antisyphilitic remedies and external antiseptics, but warned against caustics.

The Spirochæta Pallida.—Dr. JAMES EWING, of New York, followed with a talk upon this subject, illustrated with lantern slides. This organism had been shown to be present in the fluid expressed from chancres, lymph nodes, roseola, and mucous patches, and very rarely the blood stream itself. It was said to be scanty in tertiary lesions, but two observers had found it in the urine of syphilitics. It was scanty in the internal organs, and was in any situation hard to demonstrate. From this fact it might be somewhat excusable that so many unsuccessful attempts had been made to demonstrate it. However, the organism was abundant and congenital syphilis in the nares, conjunctiva, etc. It was not necessarily found at the seat of the lesion.

It was admitted that its relation to other organisms was as yet obscure, some observers placing it with the protozoa, while others classified it as a bacterium. So until a more complete agreement was reached its biology must remain open.

A very interesting series of experiments was noted in which syphilis had been induced in the lower animals, notably the chimpanzee. Here the initial lesion might vary from a mere papule to a phagedænic ulcer. The use of serum in the diagnosis was explained, but shown to be as yet insufficient. The difficulty with which it was found had led some to assert that this

organism did not exist or that it was in no way related to syphilis. But, after accepting the evidence as a whole, this stand could not well be taken.

Cancer, Retrospective and Prospective, was the subject of a paper by Dr. ROSWELL PARK, of Buffalo. He gave a brief review of the history of the State Cancer Laboratory in Buffalo, and outlined its work. He held that, in order to successfully solve the cancer problem, the combined efforts of the histologist, pathologist, clinician, and surgeon were necessary. Since the establishment of the laboratory in Buffalo many had been put into operation. He outlined the transplantation of cancers in rats and mice and the formation and study of cancer districts and maps. He deplored the fact that such an important work should be curtailed on account of insufficient financial support. He hoped that condemned criminals might soon be employed in these experiments instead of the lower animals.

Parasitism and Infection.—Dr. HARRY P. GAYLORD, of Buffalo, said that the parasite now thought to be responsible for cancer was first described in 1905 by Hoffman. It took a pale blue stain, had from four to twelve corkscrews, and was found on the ulcerating surfaces of tumors, though it had been found in non-ulcerating tumors of mice. Experiments showed that mice introduced into old cages which had been previously occupied by cachectic mice would also have a tumor of the same nature. He explained the theory that injections of scarlet R. subcutaneously would cause the epithelial cells to proliferate and dip down into the connective tissue in that vicinity. This substance affected only the epidermal epithelium and not that of mucous membranes. Thus, it was shown that certain substances like scarlet R. would cause cells to multiply.

Experimental Research in Connection with the Transplantation of Carcinoma in Mice.—Dr. CLOWES discussed a certain number of primary tumors which were in the possession of the New York State Cancer Laboratory, which have been transplanted many times until a very high degree of virulence had been obtained. One tumor had been transplanted in seven years through fifty generations of mice. The tumor had increased in virulence till now it killed ninety-five per cent. of the mice in about twenty-six days. He alluded to the action of heat and chemicals in interfering with or stimulating the proliferation of cancer cells. In the course of these experiments it was found that some of the mice recovered spontaneously, and after such recovery they were immune to further inoculation. This bore some relation to the immunity to smallpox produced by vaccination.

Cancer as a Biological Problem was the subject of a talk by Dr. G. N. CALKINS, of New York. The biology of cancer, or its causes, was frankly stated to be obscure. Many observers disagreed, while many more were noncommittal. The speaker classified the various forms as well as could be done in the light of our present knowledge, but he admitted that many changes would undoubtedly be made before a firm and satisfactory classification could be made.

Dr. STRAUSS commended the work of the laboratory, and asked if the organisms had ever been separated in pure culture, to which a negative reply was promptly given.

Sahli's Desmoid Reaction was the subject of a paper by Dr. H. W. CAREY, of Troy. The test consists in administering a methylene blue, salicylic acid, or iodoform pill inclosed in a rubber envelope, the ends of which were ligated by No. 00 catgut. This capsule must be strictly water tight. It was given after a full meal, and tests were made of the excreta for the substance (usually methylene blue) to determine the time of its course through the system, being liberated by the digestion of the catgut in the gastric juice. The author reported a series of cases in which the indicator ap-

peared in from three to five hours, and said that sixteen hours was the longest time within which the reaction could occur and still be normal.

It was shown that this test could be positive after a full meal, and the stomach contents after a test breakfast be free from hydrochloric acid. This was due undoubtedly to the greater stimulation produced by the full meal. Some had been able to digest catgut in lactic acid and pepsin, but it was so slow that the reaction could not be considered normal. If bile was added to pancreatic juice, it would dissolve the catgut, but only after sixteen hours, after the capsule has reached the intestine; so the reaction would be negative. If there was hyperacidity, the reaction would be correspondingly more rapid, but not so constantly that it could be regarded as diagnostic.

The reason that the reaction would occur after a full meal and not after a test breakfast was that bile might be regurgitated after a test breakfast sufficient to neutralize the gastric juice, but not in sufficient quantity to neutralize the amount secreted after a full meal.

The chief value of this reaction was to determine the digestive activity, and it was a test for both hydrochloric acid and pepsin. It was not suited to the diagnosis of functional disorders or immobility, and did not entirely replace the stomach tube.

The Abortive Treatment of Pneumonia.—Dr. G. LENNOX CURTIS, of New York, in a paper thus entitled, said that pneumonia was the result of two co-operating causes—a predisposing cause, such as exposure, and a specific, or essential, cause, which consisted of vitiated secretions with their accompanying germs and defective elimination. That to successfully combat and remove the systemic causes was the chief therapeutic problem, and the success which attended this effort was the measure of the physician's skill and usefulness.

Until recently, drugs had constituted the principal means of combating congestion, but now a more efficient means was at hand, namely, the ozone producing electric current. A brief description of the apparatus used was then given, and it was explained to be the ideal remedy for all stages and degrees of congestion.

A New Disease.—Dr. H. P. DE FOREST, of New York, reported under this title a case of inflammation of the thoracic duct, and gave the detailed history.

Blood Pressure.—Dr. H. L. ELSNER, of Syracuse, in this paper considered generally the value of the sphygmomanometer and the importance of the study of arterial tension. Simple palpation was unsatisfactory and often misleading. One must understand the effects of long continued high pressure. It might be compensatory, and in some cases was even to be encouraged when it was a balancing and protecting measure. If long continued, it led to cardiac hypertrophy, arteriosclerosis, and later degeneration of the heart muscle. An early recognition of this condition was urged, as many times the evil effects might be aborted. Out of a series of 600 cases cited, 1.5 per cent. were shown to have been characterized by hypertension, and many normal persons would exhibit the same condition.

The difficulty of diagnosis between hypertension and arteriosclerosis was referred to, and it was alleged that arteriosclerosis was not always associated with hypertension, especially if the arteriosclerosis was of the larger vessels. The presence of an aortic murmur and an accentuated second sound suggested arteriosclerosis.

The necessity of taking the systolic, diastolic, and pulse pressure was shown to be of importance. We should attempt to correct any perversions in blood pressure, and in case of hypertension we must search all the organs for a possible cause. Unless this rule was followed, the sphygmomanometer would lead to many erroneous conclusions.

Preceding Bright's disease, there was usually a long

period of hypertension, and a thorough blood pressure study was of great importance in gastric, portal, and intestinal morbid conditions.

Classification of Blood Pressure Cases.—Dr. LOUIS F. BISHOP, of New York, read a paper in which he gave a subdivision of the high pressure cases into those due to nervous causes and those to other causes. He referred to a class of cases in which high arterial tension often existed, but was due neither to Bright's disease nor to arteriosclerosis. To this class he gave the name *hypertonia vasorum idiopathica*. This class of cases was becoming constantly of more importance in those who broke down under the constant strain of modern life. The causes were to be found in men's habits; the general hurry, worry, and bustle. He advanced the theory that the circulation was maintained by a tone maintaining influence, independent of the vasomotor system, which radiated from the central nervous system.

He called attention also to a muscle tone maintaining influence, and said that these two functions, acting in conjunction, regulated blood pressure. Thus, the symptoms of a disturbance of the tone maintaining function were early found in perverted blood pressure, and this was frequently first manifested by reflex irregularity of the heart. To the physician as well as to the patient this class of circulatory diseases presented a great difficulty in that there was no apparent disease to be treated. Indeed, there was nothing wrong with the circulatory system in the early stages. There was only something wrong in the way in which it acted. But it inevitably led to a breakdown.

The treatment consisted in regulating the functional activity of the brain, heart, and bloodvessels. In some cases this was easily accomplished, but in others only with the greatest difficulty. The most valuable drugs could not be given in efficient doses, except under constant supervision. Exercises must not be carried too far.

Finally, he referred to many cases which went on in spite of medical advice through the stages of *hypertonia*, cardiac hypertrophy, vascular and cardiac degeneration, breaking down of the cerebral circulation, paralysis, and tedious invalidism.

Dr. THEODOR SCHOTT, of Baden, stated that he had been among the first to undertake blood pressure study. He emphasized the necessity of careful and scientific use of the sphygmomanometer, and said that patients should be examined at different times, as an excited condition would give rise to confusing results.

He referred to goitre associated with high tension, but called attention to the fact that that need not necessarily be the case; on the contrary, a normal or even subnormal pressure might exist. The blood pressure, when perverted, might be lowered or raised by the same treatment. It was only a sign, a symptom, and must be considered together with all the other clinical facts to render the treatment efficient.

Dr. ROCHESTER, of Buffalo, emphasized the importance of the sphygmomanometer, and advised every practitioner to become familiar with one particular instrument. He called attention to the transitory effect of nitroglycerin.

Dr. JACOB spoke of the uncertain value of nitroglycerin tablets. He referred to a series of experiments conducted by the New York Department of Health with commercial tablets. Tablets which should contain $\frac{1}{100}$ of a grain were found to contain anywhere from $\frac{1}{250}$ to $\frac{1}{2500}$ of a grain. He suggested that this might be the cause of the varied results obtained from the use of this drug.

The subject was further discussed by Dr. GEORGE NEWCOMB, Dr. F. C. LEE, and Dr. BISHOP.

The Criminal Lunatic; His Status and Disposition.—Dr. ROBERT B. LAMB, of Matteawan, read a paper which he said had been suggested by a series of inquiries made

by authorities in Germany. Its object was to put into concise form information for the general physician. The criminal lunatic was legally assumed to be a person who was unable to distinguish between right and wrong. The courts made no allowance for acute alcoholism, while they did in the chronic insane.

The author believed that the ordinary lay jury was entirely unfitted to appreciate technical evidence, and recommended the appointment of a committee to inquire into the mental state of prisoners, their findings to be included in the judge's charge to the jury. The present legal definition of insanity did not include the cases of diminished responsibility, whether the condition was inherited or acquired. A study, classification, and report of the mentality of convicts would be a valuable contribution. The State made liberal and adequate provision for the care of the criminal insane, once their status was determined. The methods of detecting lunacy in criminals were not fair and convincing to either the medical profession or the public. The consideration of medical questions by juries of laymen was neither wise nor just to either the lunatic or society.

The Importance of the Routine Examination of the Urine for Indican.—Dr. JOSEPH DAY OLIN, of Watertown, in this paper remarked that indican was often found in the routine examination of urine, and especially in cases of intestinal disturbances. Urine might contain no sugar, albumin, or casts, and still be pathological. Indican was a reliable index of the absorption of putrefactive products from the intestine or stomach.

Dr. WOODWARD considered any discoverable amount of indican as an excess. It always preceded high arterial tension, and this in turn was a forerunner of heart and kidney disorders. Indican was always associated with an excess of uric acid.

Dr. JACOB pointed out that indican was frequently found in almost anybody's urine, especially if there was a tendency to constipation or if there had been an indiscretion in diet. We all ate too much, especially of meat and milk. Many fits of bad temper were due to overeating and excessive intestinal putrefaction.

Dr. HEINRICH STERN, of New York, stated that indican was a product of excessive fermentation; he had never been able to find it in the blood.

Dr. ROCHESTER had found it in cardiac insufficiency, in asthma, and during the failure of the bowels to get rid of waste material.

Underfeeding and Its Associate Ills.—In this paper Dr. DUDLEY D. ROBERTS, of Brooklyn, said that he feared the effects of underfeeding far more than those of overfeeding. There was no proper guide to the amount of food taken. The three causes underlying this condition were the desire to save time and money, loss of appetite, and subjective digestive disturbances and physical and mental emotion. Temporary prohibition was good in some cases, but the writer discouraged its prolonged continuation.

Ablation of the Breast.—In this paper Dr. PARKER SYMS, of New York, showed the advisability of an operation which would produce as little mutilation as possible, and reviewed the literature of the early operations, which removed only the gland and left the pectoral muscle intact. He described and advocated the Willy Meyer operation, as it was shown to be almost bloodless. The figure of six incision was used, carrying the loop around the gland and the long arm well up, just anterior to the axilla. The bloodvessels should be ligated at the root, so as to reduce the hæmorrhage. He recommended the removal of the pectoral with the breast, after the axilla had been emptied. Skin grafting might or might not be used to close the wound. Dr. Meyer used it, but Dr. Syms did not. After operation comparatively little shock followed, and the function of the arm was very little or not at all impaired.

Dr. SYMS dressed the upper arm of the wound separately from the rest, which was a modification of Willy Meyer's method. A modification by Dr. Jackson, of Kansas City, was mentioned.

Dr. BONNER cited three cases in which posterior drainage had been used, and he considered this essential. His results had always been good with the skin grafting method.

Dr. GREGGER, of Watertown, spoke of the advantage of an inverted Y incision, and emphasized the importance of proper dressing.

The Surgical Treatment of Goitre.—In this paper Dr. M. B. TINKER, of Ithaca, divided goitres clinically into three classes: Those in which the symptoms depended upon pressure, malignant tumors, and exophthalmic goitre. The medicinal treatment was deficient. Some directed this treatment to the heart, some to the nervous system, and still others to the intestinal tract. In spite of all efforts the patients still died. The results of surgery have been more encouraging. Recovery was rapid, and immediate slowing of the pulse and recession of the nervous symptoms followed. The scar was not disfiguring.

The author recommended a local anæsthetic, as more time could be taken to identify the anatomical structures, and ether predisposed to more severe hæmorrhage, as it causes congestion of the vessels of the neck and face. Any parathyroid body should be left to prevent myxœdema. The prognosis depends upon the prompt and proper treatment, and the mortality had been greatly reduced in recent years. The prognosis as to a permanent cure was good, except in cases of malignancy and exophthalmic goitre.

The Clinical Features and Operative Treatment of Thyroid Affections.—In this paper Dr. GEORGE E. BIELBY began by saying that no uniformity existed as to the classification of thyroid tumors, and suggested their division into three groups: Hypertrophies, tumors, and inflammations. In the first variety there was diffuse enlargement, but it was not always symmetrical or uniform.

The speaker believed cysts and adenomata to be the tumors most frequently encountered, and their distinction was conceded to be sometimes difficult. Of the malignant tumors, carcinoma was the most common, resulting usually from degeneration of simple hypertrophies. Surgery offered the only means of relief for simple hypertrophies. The removal of part of the growth in some cases was deemed advisable. The high mortality resulting from operative procedures was laid to the general anæsthetic in a great measure.

Dr. BLOODGOOD asserted that the good results obtained from operative treatment depended more upon the early performance than the method employed. He did not believe there was any cure for thyroid tumor after it had assumed a malignant character.

Some Recent Clinical Observations in Intestinal Obstruction, Acute and Chronic, was the subject of a paper by Dr. BLOODGOOD. He urged an early diagnosis by the general practitioner, who in most cases saw the patient before the surgeon. He gave the mortality from operation after forty-eight hours as seventy per cent., while if the operation was performed within twenty-four hours the recoveries were over the same percentage.

As a cardinal symptom of this condition he said that severe abdominal pain (not in the region of the gall-bladder or kidney), not followed in a few hours by a movement, should be carefully investigated. He divided the cases according to their pathology into two groups—those in which the lumen was blocked and the blood supply shut off, and those in which the lumen was blocked, but the blood supply intact. He advised withholding morphine and treating the cases by washing out the stomach and giving a high enema. In some

cases the dilated bowel could be felt, and the importance of a blood count in these cases was brought out. Volvulus of the sigmoid was considered and resection advised.

Dr. BRISTOW cited a case of obstruction in which there was no great amount of pain or shock; thus these symptoms were not constant.

Toxic Nephritis Dependent upon Surgical Conditions.—Dr. NATHAN JACOBSON, of Syracuse, in this paper, stated that inflammatory changes were often awakened in the kidney by bacteria and their toxins in the circulation. Examples of conditions in which there were toxins in the blood were given, such as gout, diabetes, chlorosis, and sometimes pregnancy, typhoid fever, scarlet fever, tuberculosis, influenza, septicæmia, etc. The changes produced in the kidneys in infective nephritis were given as chotical nephritis, endarteritis, and a blocking of the vessels and tubules.

While the toxins usually played only a part in the inflammatory change in the kidney, they alone might produce the disturbances, and the toxins from the gastrointestinal tract had a deleterious effect upon the kidneys. The author then gave brief histories of three cases. He concluded by observing that nephritis (if toxic in origin) was an indication for a surgical operation and not a contraindication, as was formerly supposed.

Foreign Bodies in the Uterus.—Dr. TALMEY, of New York, in this paper, classified the cases, and accentuated their importance to the general practitioner.

The Surgery of Foreign Bodies in the Respiratory Tract.—Dr. W. G. MACDONALD opened this paper by remarking that foreign bodies would always be a matter of importance in emergency surgery so long as children were allowed to use their mouths as a storehouse for toys, etc. Up to twenty years ago the mortality of such conditions had been about forty per cent., but, owing to improved instruments and greater skill, this had been reduced to ten per cent. He reported sixteen cases, with a mortality of two, and cited a case in which a hat pin remained in the trachea four weeks and was finally coughed up. Some bodies showed a migratory propensity and moved from one bronchus to another, or even from one lung to the other. This was pointed out to be especially true of grain.

Dr. VANDER VEER urged that the physicians learn as quickly as possible the nature of the foreign body, and so modify the treatment. In the case of grain, beans, etc., he advised immediate low tracheotomy, and in most cases the grain would be coughed out through the wound. The use of the x ray picture was referred to briefly.

Dr. WARD gave the history of a young man who was supposed to have tuberculosis and was sent away, but months later coughed up a foreign body from the lungs—"coughed up his consumption."

The Treatment of Diffuse Septic Peritonitis.—Dr. RUSSELL H. FOWLER reviewed 145 cases treated by the elevated head and trunk position, and reported 77½ per cent. of recoveries. He advised a small incision in the region of the appendix, with thorough cleansing. Then the lower part of the abdominal cavity was to be flushed with hydrogen peroxide and soda, followed by normal salt. The different methods of drainage were discussed and the results given for each method. The value of a saline enema was pointed out as reversing the currents of the peritoneal fluid. In very grave cases it was not safe to follow the local cleansing with diffuse flooding, because of shock. A few rare cases were cited in which no drainage whatever was provided, but the author did not recommend this plan as a rule.

A New Operation for the Radical Cure of Femoral Hernia.—Dr. G. V. MOSHCOWITZ said in this paper that in his operation the incision was made along Poupart's ligament, but slightly above it. This exposed

the neck of the sac above its passage beneath the ligament. The hernia was then reduced, the sac dissected out, and the internal femoral ring closed. The advantages of this operation were that it involved a high ligation of the sac, and that it placed a firm barrier of tissue over the seat of operation, by the approximation of Poupart's and Coper's ligaments. Eighteen cases were cited in which the author's operation had been employed successfully, and no recurrences had followed.

Book Notices.

Le signe de la mort réelle en l'absence du médecin. La constatation et le certificat automatiques des décès. (Procédé de la réaction sulfhydrique.) Moyen simple, infaillible, à la portée de tous, pour éviter le danger de la mort apparente à la campagne. Par le Docteur ICARD (de Marseille), médecin de l'Administration des pompes funèbres, etc. Avec figures dans le texte. Paris: A. Maloine, 1907. Pp. xxxiv-292.

The author has been a close student of the methods of determining somatic death, and in the present exhaustive study of the question he urges that the fact of death may be established by the presence of sulphureted hydrogen. This gas is an early product of cadaveric decomposition, is formed in great abundance in the lungs, and escapes through the nasal fossæ; its presence is proved by introducing into the nasal cavity a piece of paper on which words or designs are written or drawn by means of a solution of neutral lead acetate; the inscription is invisible until some time after exposure to the sulphureted hydrogen, and thus the cadaver itself bears witness to its deadness. The author states that the reaction occurs in all cases of actual death, and is absent in all cases of apparent death. The length of time that must elapse after exposure of the paper with the lead solution is a drawback to the value of the test.

Textbook on Diseases of the Heart. By GRAHAM STEELL, M. D., F. R. C. P. With an Appendix on the Volume of Blood in Relation to Heart Disease, by J. LORRAIN SMITH, M. A., M. D. Philadelphia: P. Blakiston's Son & Co., 1906. Pp. 389.

We have here a very good manual of diseases of the heart; suitable alike for the students and for the general practitioner, but hardly detailed enough or of sufficient extent to be very useful to the specialist. The work is written from a modern standpoint, and very properly emphasizes the large part that impairment of muscular tone plays in valvular insufficiencies, especially of the mitral orifice. This view is one which is helpful and encouraging for a more rational therapy and a better prognosis than was formerly entertained for these lesions, many of which are now recognized to be only relative and not organic or necessarily permanent. For an elementary treatise, the author, to the exclusion of more important matter, has devoted a disproportionate amount of space to the consideration of Head's theory of areas of referred pain and hyperæsthesia. Like most English writers, the author has also failed to credit Dana with priority in this field. A rather extraordinary omission is the neglect of any reference to the sphygmomanometer and recent work in the clinical estimation of blood pressure. The writer's conservative attitude toward the extravagant allegations made for the Nauheim treatment is to be commended.

Stöhr's Histology, Arranged Upon an Embryological Basis. By FREDERIC T. LEWIS, Assistant Professor of Embryology at the Harvard Medical School. From

the Twelfth German Edition. By PHILIPP STÖHR, Professor of Anatomy at the University of Würzburg. Sixth American Edition. With 450 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1906. Pp. ix-1 to 434. (Price, \$3.)

The sixth edition of this standard textbook has been subjected to such thorough revision and rewriting that one no longer recognizes the original text. It is in reality an entirely new book by Dr. Lewis, with the use of the illustrations and a few text pages from the book of Dr. Stöhr. The alterations have been so pronounced that Dr. Stöhr has felt the necessity of presenting a prefatory note disclaiming responsibility for all statements not contained in the German original.

The change will, however, prove very acceptable, for in its present condition the book presents a decided improvement over the preceding editions; the text is more clearly written, more exact, and has been brought up to date in a very able manner. The change has reduced the size of the book by fifty-one pages, the reduction being effected by the complete omission of the bulky text on technique and the preparation of sections used for illustration, which characterized the previous editions.

A few new illustrations have been added, and some of the former ones have been printed in color, a process which has not improved them. Many other figures have been made by the stippling process and fail to show the fibrous character of the connective tissues. The figures which have been printed in colors do not register well, the paper used is not conducive to good results in such illustrations as have been printed by the half tone process, and a few typographical errors have escaped the eye of the proofreader. Otherwise the book is an excellent product of the printer's art.

In a combined textbook on histology and embryology, such as is here presented, it is difficult to cover the entire field in the allotted space. The book will therefore fail to satisfy those teachers who separate the two subjects, and its brevity will offer difficulties to those who hope to acquire a knowledge of these subjects without the aid of an extensive laboratory course. As a guide to such students of the subject as are taking a combined embryological and histological course, such as is given in the Harvard laboratory, the book will satisfy every want.

The advanced student will regret the absence of references to literature, especially where the more recent theories and discoveries have been discussed. Credit has here and there been given to authors, but nowhere is there any reference to their publications. An important stimulus to research is thus omitted.

The architecture of the central nervous system in the adult has been scarcely touched upon, the descriptions being confined, except for brief paragraphs, to the pure histology and embryology of the organs. Neurologists therefore will hardly be satisfied with the treatment of this portion of the subject.

The description of the teeth, which is credited to Dr. G. H. Wright, that of the hair, based upon the researches of Dr. Stöhr, and the article upon the uterus, decidual membranes, and placenta, originally by the late Dr. Alfred Schaper, are to be specially commended. Differing, as it does, from other textbooks of histology and of embryology, the present volume is heartily to be commended.

BOOKS, PAMPHLETS, ETC., RECEIVED

Du Microbe de la fièvre typhoïde (iléo-typhus) et de la théorie ternaire de Pettenkofer. Recherches microbiologiques, épidémiologiques et cliniques. Par P. I. Koubassow. Avec microphotographies de microbe de la fièvre typhoïde à différentes périodes de développement. Moscou: I. N. Kuschnerew & Co., 1906.

Des Microbes du paludisme. Par P. I. Koubassoff. Re-

cherches microbiologiques, épidémiologiques et cliniques. Avec microphotographies des microbes du paludisme à différentes degrés de leur développement. Moscou: I. N. Kouchneroff et Cie, 1906.

Conférences pratiques sur les maladies du cœur et des poumons. Par le Dr. Louis Rénon, Professeur agrégé à la faculté de médecine de Paris, etc. Paris: Masson et Cie, 1906.

Traité des maladies de la voix chantée. Par le Dr. Antoine Perretière, ancien interne des hôpitaux de Lyon. Paris: A. Poinat, 1907.

Textbook of Anatomy for Nurses. By Elizabeth R. Bundy, M. D., Member of the Medical Staff of the Woman's Hospital of Philadelphia. Philadelphia: P. Blakiston's Son & Co., 1906.

Miscellany.

Deaths of the Year.—During 1906 have been reported the deaths of 2,150 physicians in the United States and Canada, a death rate of 17.2 per thousand. This death rate does not differ materially from the estimated death rate of former years. The ages of the decedents varied from twenty-two to one hundred and three, the average being fifty-eight years and four months, and the extremes of duration of practice were from three days after graduation to seventy-one years, average being twenty-two years and ten months. On account of lay report and lack of detail, the verification of causes of death is difficult. Heart diseases, which include not only valvular lesions, but angina pectoris, endocarditis, myocarditis, dilatation, and an uncertain proportion of sudden deaths as "heart failure," caused 262 deaths. Cerebral hæmorrhage which also includes sudden deaths and "paralysis" has a record of 182 deaths. Nephritis, which includes "kidney disease" and uræmia, is said to have caused 135 deaths. Pneumonia caused 121 deaths; tuberculosis caused 99; senile debility, 59; cancer, 48; typhoid fever, 48; septicæmia, 29; appendicitis, 26; operations, not stated, 20; gastritis and meningitis, each, 19; and diabetes, 16. The deaths from violence numbered 150. Of these, 103 were due to accidents, distributed as follows: Fall, 22; railway and street railway, 22; poison, 19; runaway, 11; drowning, 7; gunshot wounds, 4; ptomain, crushing, earthquake (California), and asphyxiation, each, 3; automobile and burns, each, 2; and throat cut and concussion of the brain, each, 1. The suicides were 34 in number by the following routes: Gunshot wounds, 16; poison, 9; cut throat, 4; starvation and drowning, each, 2; and strangulation, 1. Homicide is assigned as the cause of 13 deaths; one physician was killed in battle in the Philippine Islands, and one while assisting an officer in the preservation of peace. Among the dead of the year may be mentioned: Dr. George Ryerson Fowler, Brooklyn, surgeon and writer; Dr. Elisha Hall Gregory, St. Louis, president of the American Medical Association in 1886, surgeon and teacher; Dr. De Saussure Ford, Augusta, Ga., nestor of medical profession of State; Dr. Charles Augustus Lindsley, New Haven, Conn., secretary and executive officer of the State Board of Health, writer on public health and sanitation; Dr. Charles Henry Alden, United States Army, brigadier-general, retired; Dr. Mary Putnam Jacobi, New York, distinguished woman practitioner; Dr. James Brown McCaw, Richmond, Va., in charge of Chimborazo Hospital, Richmond, during the Civil War; Dr. Philip Skinner Wales, surgeon general, United States Navy, retired; Dr. S. Edwin Solly, Colorado Springs, specialist on tuberculosis; Dr. Alonzo Garcelon, Lewiston, Me., once governor of the State; Dr. Fernard Nenrotin, Chicago, gynecologist and surgeon; Dr. William James Herhman, Ann Arbor, Mich., neurologist and pioneer in electrotherapeutics.—*Journal of the American Medical Association*, January 5, 1907.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending February 8, 1907:

Smallpox—United States		Cases		Deaths	
Places	Date				
Georgia—Augusta	Jan. 22-29	3			
Indiana—Indianapolis	Jan. 20-27	13		2	
Michigan—Detroit	Jan. 26-Feb. 2	6			
Mississippi—Natchez	Jan. 19-29	3			
Missouri—St. Joseph	Jan. 19-26	12			
Ohio—Cincinnati	Jan. 25-Feb. 1	1			
Washington—Spokane	Jan. 12-19	14	Imported		
Smallpox—Foreign		Cases		Deaths	
Canada—Cape Breton, Sydney	Jan. 26		Present.		
Canada—Kent County	Jan. 26		Present.		
Canada—Nova Scotia—Cape Breton	Jan. 26		Present.		
Canada—Nova Scotia, Cumberland County	Jan. 26		Present.		
Canada—Nova Scotia, Pictou County	Jan. 26		Epidemic.		
Chile—Antofagasta	Jan. 6	4		2	
Chile—Copulimbo	Jan. 6	16		1	
Chile—Iquique	Jan. 6		Present.		
Cuba—Havana	Jan. 30	1			
Ecuador—Guayaquil	Dec. 1-31			27	
France—Paris	Jan. 5-12	11			
Gibraltar	Jan. 13-20	1	Imported		
Great Britain—Cardiff	Jan. 12-19	3			
Great Britain—Liverpool	Jan. 12-19	5			
Malta	Dec. 29-Jan. 5	1			
Mexico—City of Mexico	Dec. 9-15			12	
Netherlands—Rotterdam	Jan. 12-19	8		1	
Peru—Lima	Dec. 1-31	9			
Russia—Moscow	Dec. 29-Jan. 5			1	
Russia—Odessa	Jan. 5-12	10		1	
Spain—Barcelona	Jan. 10-20	7			
Yellow Fever—Foreign		Cases		Deaths	
Ecuador—Guayaquil	Dec. 1-31			17	
Cholera—Foreign		Cases		Deaths	
Philippine Islands—Provinces	Dec. 8-15	29		22	
Plague—Foreign		Cases		Deaths	
Chile—Antofagasta	Jan. 6	3		1	
China—Nanchwang	Jan. 28		Present.		
Peru—Callao	Dec. 31-Jan. 5	2		1	
Peru—Catacaos	Dec. 19	2		2	
Peru—Chiclayo	Dec. 19	1		1	
Peru—Moleda	Dec. 19	9		3	
Peru—Paita, city and vicinity	Dec. 19	7		2	
Peru—San Pedro	Dec. 19	11		2	
Peru—Trujillo	Dec. 19	17		8	

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending February 6, 1907:

BOGGESE, J. S., Passed Assistant Surgeon. Temporarily relieved at Stapleton, N. Y., and directed to proceed to Perth Amboy, N. J., and assume temporary charge of the Service.

CLARK, TALIAFERRO, Passed Assistant Surgeon. Directed to report in Washington, D. C., for special temporary duty, upon completion of which to rejoin station.

COFER, L. E., Passed Assistant Surgeon. Granted leave of absence for twenty-two days, from February 4, 1907.

DE VALIN, HUGH, Assistant Surgeon. Granted leave of absence for two days, from January 22, 1907.

GWYN, M. K., Passed Assistant Surgeon. Order granting two days' leave of absence, from January 17th, revoked.

HEISER, V. G., Passed Assistant Surgeon. Reassigned as chief quarantine officer, Philippine Islands, to take effect July 17, 1907.

KEATLEY, H. W., Acting Assistant Surgeon. Granted leave of absence for four days, from January 28, 1907, under Paragraph 210.

KERR, J. W., Assistant Surgeon General. Granted leave of absence for two days, from January 31, 1907.

MORRIS, G. A., Pharmacist. Granted leave of absence for fifteen days, from February 6, 1907.

SAFFORD, M. V., Acting Assistant Surgeon. Directed to report in Washington, D. C., for special temporary duty, upon completion of which to rejoin station.

SCHERESCHEWSKY, J. W., Passed Assistant Surgeon. Directed to report in Washington, D. C., for special temporary duty, upon completion of which to rejoin station.

STEVENSON, J. W., Acting Assistant Surgeon. Granted leave of absence, without pay, for two months, or so much thereof as may be necessary, beginning February 1, 1907.

STONER, G. W., Surgeon. Directed to report in Washington, D. C., for special temporary duty, upon completion of which to rejoin station.

THOMAS, A. M., Pharmacist. Leave of absence for thirty days amended to be effective January 23rd, instead of January 20th.

TROXLER, R. F., Pharmacist. Granted leave of absence for six days, from February 4th.

WILLIAMS, L. L., Surgeon. Granted leave of absence for one day, February 6th, under Paragraph 189 of the Service Regulations.

WILSON, R., Acting Assistant Surgeon. Granted leave of absence for thirty days, from February 14th.

Boards Convened.

A board of officers was convened to meet at Portland, Me., on February 5th, for the purpose of making a medical examination of an alien. Detail for the board: Surgeon P. C. Kalloch, Chairman; Surgeon W. P. McIntosh, Acting Assistant Surgeon M. V. Safford, Recorder.

A board of officers was convened to meet at Port Townsend, Wash., for the purpose of making a physical examination of Pharmacist G. C. Allen, to determine his fitness for promotion to the grade of Pharmacist of the First Class. Detail for the Board: Surgeon W. G. Stimpson, Chairman; Passed Assistant Surgeon J. H. Oakley, Recorder.

A board of officers was convened to meet at Stapleton, N. Y., for the purpose of making a physical examination of Pharmacist Edward Rogers, to determine his fitness for promotion to the grade of Pharmacist of the First Class. Detail for the Board: Surgeon P. H. Bailhache, Chairman; Passed Assistant Surgeon H. W. Wickes, Recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending February 9, 1907:

BADLEY, A. E., Major and Surgeon. Relieved from duty at Fort Sheridan, Ill., and ordered to report in person to the Military Secretary of the Army, in this city, for instruction; will then proceed to Fort Slocum, N. Y., for the purpose of investigating certain methods relating to the examination of recruits, and thence to Jefferson Barracks, Mo., for station and duty.

FIFE, JAMES D., First Lieutenant and Assistant Surgeon. Ordered to proceed from Fort Slocum, N. Y., to Jefferson Barracks, Mo., for temporary duty, and upon completion thereof will return to his proper station.

LAMBERT, SAMUEL E., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Wright, Wash., and ordered to Fort Logan, Colo., for duty.

NELSON, KENT, Captain and Assistant Surgeon. Ordered to proceed from Fort McHenry, Md., to Fort Slocum, N. Y., for temporary duty. Upon the return of Assistant Surgeon Fife to Fort Slocum Captain Nelson will rejoin his proper station.

STEPHENSON, WILLIAM, Major and Surgeon. Ordered to report to commanding officer, Troop K, 14th Cavalry, Presidio of San Francisco, Cal., to accompany said Troop to Boise Barracks, Idaho. Upon completion of this duty to return to his station, the Presidio of San Francisco, Cal.

VEDDER, EDWARD B., First Lieutenant and Assistant Surgeon. Relieved from duty in the Philippines Division and ordered to proceed to the United States; upon arrival will report by telegraph to the Military Secretary of the Army for further orders.

WILLIAMS, ALLIE W., Captain and Assistant Surgeon. Advanced to the rank of captain, from February 4, 1907.

WOODALL, WILLIAM P., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Clark, Texas, and ordered to Fort Sill, Okla., for duty.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending February 9, 1907:

BACON, SANKEY, Acting Assistant Surgeon. Appointed an acting assistant surgeon, from February 1, 1907.

LUMSDEN, G. P., Medical Inspector. Detached from the Naval Rendezvous, Dallas, Texas, and ordered home to await orders.

RUGE, O. G., Pharmacist. Ordered to the Naval Medical School, Washington, D. C.

STIBRENS, F. H., Assistant Surgeon. Ordered to the Naval Training Station, San Francisco, Cal.

Births, Marriages, and Deaths.

Married.

PIELAK—STIASNY.—In New York, on Wednesday, January 30th, Dr. Robert Ormiston Brockway and Miss Florence Stiasny.

BROOKS—CONKEY.—In Honolulu, on Monday, January 21st, Dr. Frank Terry Brooks, of Greenwich, Conn., and Miss Madeline Conkey.

CHRISMAN—EASTHAM.—In Charlottesville, Virginia, on Wednesday, January 30, Dr. William G. Chrisman and Miss Rachel Carr Eastham.

GOTT—DOSENBACH.—In St. Louis, on Saturday, February 2nd, Dr. Henry H. Gott and Miss Katherine I. Dosenbach.

NICE—ADAMS.—In Germantown, Philadelphia, on Tuesday, February 5th, Dr. Charles McKinney Nice and Miss Helen Gilberta Adams.

OSBORNE—HOOVER.—In Washington, D. C., on Wednesday, February 6th, Dr. Edward L. Osborne and Miss Bertha Maude Hoover.

TULLOSS—CLARK.—In Washington, D. C., on Tuesday, January 29th, Dr. William R. Tulloss, of Haymarket, Virginia, and Miss Fannie W. Clark, daughter of Dr. E. P. Clark, of The Plains, Virginia.

ZIEGEL—BERNHEIMER.—In New York, on Wednesday, February 6th, Dr. H. Fred Lange Ziegel and Miss Beatrice S. Bernheimer.

Died.

CHAPPELL.—In Baltimore, on Thursday, February 7th, Dr. William J. Chappell, aged forty-nine years.

COLLINS.—In Roxbury, Massachusetts, on Tuesday, February 5th, Dr. David A. Collins, aged forty-four years.

DAVIDSON.—In Northport, Long Island, on Tuesday, February 5th, Dr. Henry Harris Davidson, aged sixty-seven years.

DRECHSLER.—In St. Louis, on Friday, February 1st, Dr. William Drechsler, aged sixty-two years.

GARDINER.—In Pleasant Hill, Maryland, on Tuesday, February 5th, Dr. J. de Barth Walbach Gardiner, aged sixty-five years.

HANSEN.—In Haigler, Nebraska, on Tuesday, January 29th, Dr. R. W. Hansen.

HART.—In Albany, N. Y., on Friday, February 1st, Dr. Sylvester W. Hart, aged forty-seven years.

MCLEAN.—In Philadelphia, on Sunday, February 3rd, Dr. H. Douglas McLean, aged seventy-seven years.

MILES.—In St. Mary's City, Maryland, on Saturday, January 26th, Dr. James H. Miles, aged eighty-four years.

PICKETT.—In Aldan, Pennsylvania, on Tuesday, February 5th, Dr. William C. Pickett, of Philadelphia, aged thirty-eight years.

QUARLES.—In Richmond, Missouri, on Friday, February 1st, Dr. W. M. Quarles.

SHELLENBERGER.—In Cincinnati, Ohio, on Monday, February 4th, Dr. James E. Shellenberger, U. S. Army.

SHERIDAN.—In Boston, on Saturday, February 2nd, Dr. Oliver M. Sheridan, aged forty-three years.

STOUT.—In Omaha, Nebraska, on Tuesday, January 29th, Dr. John Stout, aged fifty-five years.

WALTON.—In Munfordville, Kentucky, on Friday, February 1st, Dr. C. J. Walton, aged eighty-five years.

New York Medical Journal

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Original Communications.

INTESTINAL PERFORATION IN TYPHOID FEVER.*

By JOSEPH A. BLAKE, M. D.,
New York.

It is undoubtedly true that approximately one third of the deaths in typhoid fever are due to intestinal perforation. Osler, in 1901, put it at thirty out of every one hundred; Goodall, in 1,921 cases of typhoid, found that the percentage of perforations to the deaths was 31.5; Scott, in 3,006 cases of typhoid treated at the Pennsylvania Hospital between 1901 and 1906, found that it was 32.2. In 618 cases occurring at the Roosevelt Hospital in the years 1901 to 1905, inclusive, it was 48.5. Undoubtedly these percentages would be increased if autopsies were held in all cases of death, for at autopsies on typhoid patients, many perforations are found which have not been suspected. It has been estimated that from 25,000 to 75,000 people die of typhoid in the United States every year, consequently it is fair to conclude that 10,000 deaths are caused by perforation in each year. If we compare these figures with the number of cases operated in, we find there is a great discrepancy. Haggard collected only 225 cases operated in up to 1904. Allowing for the operations which are not reported, it is fair to suppose that not more than 200 are operated in yearly, and if so, only 2 per cent. of the cases of intestinal perforation come to operation. If we compare the percentage of operations throughout the entire country with the percentage of operations at some of the larger hospitals, we find that there is a great difference in favor of the latter. For instance, at the Pennsylvania Hospital there were 84 cases of perforation with 60 operations, the percentage of operations being 71.4, and at the Roosevelt Hospital there were 33 cases, with 21 operations, the percentage of operations being 63.6. About 25 per cent. are saved by operation. In 280 cases collected by Elsberg, 25.0 per cent. were saved. In 295 cases collected by Haggard, which included the majority of Elsberg's cases, 27.11 per cent. were saved. In 60 at the Pennsylvania Hospital, 21.6 per cent. were saved. In 21 cases operated on at Roosevelt Hospital, 33 per cent. were saved. Consequently, it is fair to suppose, that at least one quarter of the patients can be saved by operation. Now, if 98 per cent. of all the patients of typhoid fever in the United States who have perforation do not

come to operation, one quarter of these, or 24.25 per cent. of all the patients who have perforation, die from improper treatment. These figures are startling but instructive, all the more so because the general mortality of typhoid is decreasing on account of improved medical treatment. It is evident that the responsibility of these conditions lies with the medical attendant.

Of course in many parts of the country, particularly the rural districts, it is impossible for the physician, even if he makes the diagnosis, to get a surgeon in time to help the patient. Still, the number of surgeons who are competent to operate in such cases are increasing every year, and in every State in the Union, there are many who can be called upon and reach the patient in due time. One reason why the statistics are better at the larger hospitals is that the surgeons are called in to see the cases of typhoid whenever there is the slightest suspicion of any complication. It may be impossible throughout the greater part of the country for the physicians and surgeons to collaborate in this way, but undoubtedly it could be done in many more instances than it is at present. It is of great advantage for the surgeon to become familiar with the patient's condition before perforation actually occurs.

I find that when I have not been to see a patient before perforation is suspected, the diagnosis is extremely difficult, and that I have to be largely led by the observations of the medical attendant in regard to the changes that have taken place in the patient's condition.

The physician who makes a correct diagnosis of perforation and calls in the surgeon should receive a greater measure of credit than should the latter even if the operation is successful. Should the surgeon fail, he has little discredit, because the condition is so serious that it is impossible to hope for recovery in a large number of the patients. The less chance he has for succeeding, the less the responsibility he assumes. On the other hand, if a surgeon refuses to operate he assumes the entire responsibility and, consequently, it behooves all of us surgeons to familiarize ourselves with the symptoms and diagnosis of this condition. There are probably no cases in which the diagnosis is more difficult. The clouded sensorium of the patient, the common presence of intestinal distention, the doughy rigidity which their abdomens present, the tenderness particularly in deep ulceration, all dim and confuse the symptomatic picture.

You all are familiar with the symptoms of intestinal perforation, and I shall not attempt to repeat

* Read before a meeting of the New London County Medical Association, January 3, 1907.

them, but shall only give those upon which I think, from my experience, a fair probability of intestinal perforation may be based. It is thought by some that a preperforative state can be recognized; this I do not believe, although I believe that pain and tenderness are present in a number of cases which later perforate. We must always bear in mind that we should never wait for symptoms of peritonitis in order to make the diagnosis.

The first thing that happens when perforation occurs is leakage of intestinal contents into the peritonæum, this produces irritation before it can be said to have caused a true inflammation, and it is upon the symptoms of irritation that our diagnosis should be based. These are, firstly, pain which usually comes on suddenly, and is often severe; secondly, tenderness; and, thirdly, the most important of all, muscular rigidity. If when a patient complains of pain we examine the abdomen and find that it is tender over the usual site of perforation, namely, the lower right quadrant, and that in addition there is some rigidity of the abdominal muscles, the diagnosis is sure enough to warrant operation. This symptomatic syndrome is present in a great majority of cases, although one or more of the symptoms may be absent; but usually when so some of the subsidiary aids to diagnosis are present. These are chiefly, a sudden change for the worse in the patient's condition, he may sweat or shiver, his pulse may rise slightly or his temperature fall, free gas may be present in the abdomen as evidenced by diminished liver dulness, and, lastly, there may be leucocytosis. Of course the presence of free gas in the abdominal cavity is conclusive, but as it is present only in less than one third of the cases, its absence means nothing.

Leucocytosis usually develops with peritonitis, but it may be absent even when the peritonitis is far advanced in patients with little reactive power; furthermore, it may be present without perforation. In regard to the time when operation should be done, Keen from a statistical study, decided that operation was more successful when done after the first twelve hours after perforation. Abbe has also stated that in case of shock following a perforation, operation should be deferred. This I consider bad advice. It is well recognized that in all perforative conditions in the abdomen, early operation gives the best results. Shock is no contraindication. Shock is immediately due to the irritation of the peritonæum produced by the escape of intestinal contents, and the susceptibility to irritation disappears upon the administration of an anæsthetic. I have repeatedly observed that the administration of ether removes shock in these patients, the pulse at once improving, and the color returning to the face.

The operative technique I have employed at the Roosevelt Hospital in cases of typhoid perforation is as follows: General anæsthesia with ether is used with preference for the drop method. I consider general anæsthesia better than local for the following reasons: In the first place, it robs the operation of its terrors to the patient, thus diminishing shock; and, secondly, most important of all, it produces complete relaxation of the abdominal muscles, thus permitting a more rapid and complete exposure of the intestines. While the perforation is being repaired, the anæsthetic can be diminished, and it can

be practically stopped while the wound is being closed, particularly if some morphine has been given before the operation. Again, it is impossible to wash out the abdomen thoroughly under local anæsthesia.

The incision is best made directly through the outer third of the rectus muscle, the direction of the incision conforming to that of its fibres. As soon as the abdomen is opened, the finger is introduced and the ileum is picked up close to the ileocolic junction. This, as a rule, can be done by feeling alone by simply hooking the finger from below up in this direction. The first three feet of the ileum are rapidly looked over and if perforation is not found, the cæcum and appendix are inspected. In all our cases the perforation has been in the ileum. I usually close perforations up to five millimetres in diameter, with three continuous Lembert stitches, the middle stitch being over the centre of the perforation. As soon as the stitches are introduced the ends of the sutures are tied together, thus inverting the aperture. Larger perforations are closed according to the indications, care being taken not to narrow the lumen of the gut to a diameter less than one half an inch. Resection should not be done if it can possibly be avoided. As soon as the perforation is closed the intestine is dropped back in the abdomen, a two way irrigator is introduced, and the abdomen flushed out with saline solution.

In cases in which there is an abscess cavity or much necrotic fibrin left, a cigarette drain is introduced to the bottom of the pelvic cavity. When there is no gross necrotic material left, deep drainage is not used, a cigarette drain being introduced simply through the abdominal wall into the peritoneal cavity.

The after treatment is important, the head of the bed is only slightly elevated, as these patients cannot be put in the typical Fowler position inasmuch as they are accustomed to lying flat on their backs. No food or water is given by mouth, and the stomach is washed out if the patient vomits. Rectal irrigations are given for one half to three quarters of an hour every four hours, two long rubber tubes being used, one for the inlet and one for the return. As soon as peritoneal irritation subsides and the function of the intestines returns, careful feeding of peptonized milk is commenced.

I have observed that in most of the patients who have recovered, the temperature has fallen to normal within the first twenty-four to thirty-six hours. It then usually rises and the fever runs its course. Relapses are not uncommon after perforation.

In the five years up to January 1, 1906, 618 patients with typhoid fever were treated at the Roosevelt Hospital; of these, 68 died, a mortality of 11 per cent. There were 33 patients with perforation, 21 of which were operated upon, with seven recoveries, a mortality of 66.6 per cent.; twelve were not operated upon and all died. Of the 14 patients who died after operation, one contracted pneumonia the day after operation, and one died of a second perforation five days after operation. One patient, counted as an operative cure, died twenty-four days after operation in a relapse. There was one recovery after operation in a patient whose perforation had occurred three days before admission to the hospital, the patient, a boy of sixteen years of age, seemed to be

moribund, the skin was livid and blotched, there was a suppurative peritonitis throughout the entire cavity, and the pelvis was nearly filled with faecal matter, two perforations about three millimetres in diameter were found in the ileum. After washing out the abdomen, a drain was introduced into the pelvis, and the patient made a satisfactory, though somewhat tedious recovery.

I decided from my experience with this boy that I would never refuse to operate upon a patient of typhoid perforation unless he was actually dying.

In conclusion, I wish to express my thanks to my colleagues, Dr. Brewer, Dr. Hotchkiss, Dr. Peck, and Dr. Martin, for their courtesy in permitting me to add their cases to my own.

601 MADISON AVENUE.

SUBINVOLUTION AS A PRIMARY ÆTIOLOGICAL FACTOR IN GYNÆCOLOGICAL AFFECTIONS.*

By JAMES HAWLEY BURTENSCHAW, M. D.,
New York.

Adjunct Professor of Gynecology in the New York Polytechnic Medical School and Hospital, New York.

In recording the opinion that fully fifty per cent. of female pelvic affections are directly or indirectly due to subinvolution of the generative organs and that a very large majority of these may be prevented by proper treatment during the puerperium, I am well aware that the statement will be challenged; in stating that, were it not for the negligence, if one may name it such, of the obstetric specialist and of the general medical practitioner who undertakes midwifery cases, the gynecologist could not exist, I will be accused of unwarranted presumption, on the one hand, and on the other of disloyalty to that special branch which I practise.

Having voluntarily accepted indictment because of these two statements, permit me to try and prove my case.

First, a generally accepted definition of the word "subinvolution" is the following: "By subinvolution is meant the retardation or arrest of the processes by which the uterus is returned to its normal dimensions, position, and anatomical structure after the termination of pregnancy." Even the tyro in medical practice knows that this failure of the organ to undergo proper involution is due primarily to too much blood supply. Fatty metamorphosis of the hypertrophied elements of the puerperal uterus cannot take place in the presence of excessive nutrition. He also knows, or ought to know that, the factor of infection being left out, the failure of the blood supply to diminish to physiological limits is due to one of two reasons: Either retained secundines prevent contraction of the organ, or irritation at some portion of the genital tract causes congestion and more or less chronic engorgement.

These facts do not admit of argument. But here a query intrudes: Is subinvolution, under these circumstances, confined to the uterus itself? It is astonishing to me as a gynecologist that writers of textbooks as well as other teachers almost wholly ignore this question. For my part I believe that if the uterus fails to undergo involution, whether the cause is primary or secondary, every organ and tis-

sue physiologically concerned in the child-bearing act is similarly affected. And I also believe that this subinvolution of the ovaries, tubes, ligaments, and vaginal walls is of far greater pathological consequence in many instances than subinvolution of the uterus itself.

I call attention to the fact that I do not dwell on sepsis as a frequent cause of subinvolution. While I admit its importance in this connection, I do not believe that it plays an ætiological rôle nearly as frequently as the factors already enumerated. The limits of this paper preclude an extended discussion on this subject. If it is borne in mind that I am considering subinvolution of all the pelvic organs, and not simply of the uterus alone, it may be appreciated that sepsis does not deserve that prominence which some may be inclined to accord it. For instance, one very frequently encounters marked relaxation of the pelvic floor, due primarily to a subcutaneous separation of the levators ani or to an overstretching of these muscles, and the element of infection cannot intelligently enter into its causation.

I believe that laceration of the tissues of the birth canal is by far the most frequent cause of subinvolution. In this connection are certain truisms relating to the human body which cannot be lost sight of: Whenever or wherever in the body there is irritation or inflammation (synonymous terms, practically), there is bound to be congestion. When this congestion is of a mucous or serous surface secretion results. Long continued congestion ends in hyperplasia. We know that, in many instances, Nature heals these tears of the genital tract and that, as a result of this repair, pathological sequelæ are reduced to a minimum. I am one of those who believe with sincerity that no tear of the cervix or perinæum may be considered too insignificant to merit repair during the puerperium. Nature does her best to accomplish this without assistance, and in many cases succeeds, but while the effort is progressing congestion of the parts is constant and the progress of involution is just so much delayed. And even when Nature does succeed the resultant scar tissue may act as an irritant and the congestion continue indefinitely.

I believe most assuredly that every wounded perinæum or pelvic floor should be repaired within twenty-four hours, and every wounded cervix by the end of the sixth week of the puerperium. The axiom of Goodell, uttered more than twenty years ago:—"A comparatively slight operation on the cervix or perinæum, if performed sufficiently early, will so modify the nutrition of the entire genital tract that the organs will go on to complete involution"—possesses exactly the same force now as it did then.

I have accused the obstetrician of neglect of duty, yet I am free to admit that I think the accusation unjust. His negligence is less his fault than his misfortune. From ten to twelve weeks are required for complete involution of the child-bearing apparatus to occur. How many obstetricians, whether specialists or otherwise, examine a woman at stated intervals until the end of this period has been reached, in order to determine if this involution is properly progressing? How many, even four or six weeks after labor, go to the trouble to repair a laceration of the cervix or perinæum, either of which may be the

* Read before the New York Medico-surgical Society.

direct cause of the subinvolution? Yet the obstetrician's argument in defence is a substantial one. The woman, when permitted to leave her bed, considers herself well and will not submit to examinations or treatment. Her mother, and grandmother, and aunts, and other relations have borne children, and have not subsequently suffered from "falling of the womb"—*why* should she have a different experience? Then, too, he will say that the mere suggestion of an operation will cause his patient to question his skill as an accoucheur; that she will assert that if her delivery was properly conducted no cause for operation would be present. And finally, he will contend that the size of his fee for the management of an ordinary case of labor is so small that such frequent and extended attention is out of the question. In these days of high living expenses the necessity of hustling for the almighty dollar is ever present with most of us, and this argument is a cogent one.

Indeed, I admit that, under existing conditions, I do not readily see how obstetric practice may be conducted otherwise. Nevertheless, I think the obstetrician's duty is obvious. Duty is not always a pleasant sentiment with which to hammer an opponent, especially if one feels that he also may be culpable, but it frequently serves an admirable end: To erect an effective barricade behind which one may install himself against counter argument.

Now, what measures may the obstetrician make use of in order to bring about normal involution, and thus keep his patient from subsequently falling into the clutches of the gynecologist? I have called him to task concerning his sins of omission, and now, to even matters up, he may take pleasure in disagreeing with me when I make the assertion that, in my opinion, the occurrence of subinvolution may be almost wholly prevented.

To begin with, I do not encourage the use of the obstetric binder after the end of two or three days, although I have no particular objection to its employment if it adds to the comfort of the patient. Usually it is applied so loosely that it accomplishes no good whatever. I never make use of a pad beneath the binder. I do not insist on the patient lying flat on her back for the better part of a week, as is frequently the custom, but encourage her to assume the most comfortable position possible. On the third or fourth day, if she wishes it, I permit her to sit up in bed, propped up by pillows. But I never allow her to put foot to the floor until the expiration of at least two weeks. If I can persuade her to divide her time between her bed and a couch during the following two weeks I feel that I have accomplished much.

Her breasts are emptied at regular intervals, by the child or by a breast pump. The influence of this procedure on involution is too well known to necessitate comment. It is unnecessary to state that any laceration of the pelvic floor or perineum should be repaired within twenty-four hours of the labor. In this connection I wish to call attention particularly to the possible presence of a subcutaneous separation of the levators ani which may have remained undetected. I think this happens so frequently, and that it is so eminently a predominant factor in the causation of pelvic floor and perineal subinvolution that I sometimes question if it would not be wise,

as a matter of precaution, to introduce a couple of sweeping, deep, silkworm gut or chromic catgut sutures through the levators immediately after every delivery. While such a procedure, of course, would have no effect on muscles which have been overstretched rather than torn apart, it could do no harm and might do a world of good in preventing subsequent relaxation and prolapsus.

I advocate the administration of ergot, early and often. The fact is now well established that this drug not only acts directly on the muscular fibres of the uterus, but stimulates as well the centres in the lumbar chord which control it. As is customary, I give a drachm of the fluid extract as soon as the placenta has been expelled. If the uterus has contracted satisfactorily, the following day I order the drug in 15 minim doses, thrice daily, after meals, and its administration is continued in this or in 10 minim doses during a period of at least six weeks. Care must be taken that it does not interfere with the milk supply. It has been my experience that this need not be apprehended if the dose is properly regulated and if the breasts are emptied at regular intervals. I am well aware that, except for the first dose, the use of ergot is not encouraged by many obstetricians. It is stated that it exerts such a contracting influence on the lower uterine segment that drainage is interfered with. In drachm doses I do not doubt that this is perfectly true; but in the small dose I have mentioned—10 minims—it is not true. On the contrary, it exerts an even, tonic effect on the uterine muscle which is distinctly beneficial. In some cases I administer quinine sulphate in 2 grain doses in conjunction with the ergot.

During the entire puerperium the patient's bowels should be regularly evacuated. Indeed, I prefer that they be kept rather loose than otherwise. Non-effervescent sodium phosphate or fluid extract of cascara sagrada will accomplish all that is necessary in this respect.

By careful bimanual abdominovaginal examination, made at intervals of two weeks, it should be determined if involution of the uterus is progressing properly and satisfactorily. It is pertinent to state that it is possible for the examiner to judge of the rate of involution of the pelvic ligaments and other annexa only by that of the uterus itself. It stands to reason that if the uterus is supplied with an abnormal amount of blood at this time adjoining structures will participate to an almost equal extent in the congestion.

If it is discovered that involution is being retarded, the cause may almost invariably be traced either to the presence of blood clots within the uterus itself or to a laceration of the cervix. The former should be removed, preferably by means of a dull curette, the latter repaired. It is a question frequently discussed as to when a torn cervix should be operated on. I usually wait until about the sixth week, unless indications point to the advisability of earlier interference. Finally, if all appreciable causes have been removed and, at the end of ten or twelve weeks, involution has not become complete, I advocate a thorough curettage and, under some circumstances, the application of a caustic such as chemically pure carbolic acid, to the endometrium.

Hot water vaginal douches, if properly administered, are invaluable in promoting involution during

the last weeks of the puerperal period, provided all sources of irritation have previously been removed. The patient should always lie flat on her back with her thighs flexed and should always use at least two gallons of water for each douche at a temperature as high as can be borne. These douches should be taken at least twice daily, morning and evening. I believe also in the use of body massage, under certain conditions, and in the administration of other uterine tonics than ergot. The well known preparations of iron and manganese peptonate appear to fulfil all indications in this respect.

The beneficial effects of static electricity in sub-involution have recently been demonstrated in a remarkable manner. I am of the opinion that this agent will prove invaluable in the treatment of chronic cases in which all other means have been exhausted, and will ultimately be the sheet anchor upon which the obstetrician will rely.

In conclusion, none realizes more fully than do I that the advocacy of such treatment of the puerperal patient as I have here outlined is more or less Utopian. The unwillingness or the positive refusal of the average patient to submit to it in all its detail necessarily would make it impossible of accomplishment. The professional obstetrician nor the general practitioner who accepts the responsibility of maternity cases is supposed to act as mentor and guide in all things sublunary; therefore, though against his will and against his better judgment, let him continue to merrily sow the seed and we gynecologists will continue to reap the harvest and to grow fat and contented thereon.

323 WEST EIGHTY-THIRD STREET.

THE TRYPSIN TREATMENT OF CANCER.*

By JOHN W. LUTHER, M. D.,
Philadelphia,

Instructor in Gynecology, University of Pennsylvania; Obstetrician to the Maternity Hospital.

In presenting a paper with this title I am perfectly well aware that I am broaching a subject which is not generally very well thought of by the medical profession, owing chiefly to some recent unfortunate publications in lay magazines. I am not here to-night to criticise or give opinions on this treatment, but simply to elucidate the theory as to the nature of cancer and explain the mode of treatment and what it is supposed to do. A number of medical men who have as patients one or more cases of inoperable cancer, learning of my interest in this treatment, have applied to me for details. I have, therefore, thought it might be of interest to the members of this society, some of whom may have similar cases, for whatever good this treatment might do, it certainly does no harm, and the mental effect produced by its application is extremely gratifying.

At the suggestion of a friend of our department and with letters from the university of Pennsylvania, I went to Edinburgh this past summer and called upon John Beard, Sc. D., zoologist and embryologist, lecturer on embryology in the university of Edinburgh, to learn his views of the trypsin treatment of cancer. I found him extremely pleasant and affable, and not only willing, but eager to help me in every possible way. He was very enthusiastic,

thoroughly conscientious, and believes implicitly the theories he has advanced. Being an embryologist and not a doctor of medicine, his views have been either ignored or ridiculed by his fellow countrymen, and believing that he held the secret of the cure of one of our most dreaded diseases, he sanctioned the lay publications by Saleeby, a retired practitioner.

Unfortunately, my visit was poorly timed, for the university was entirely closed, and Dr. Beard was conducting no experiments, so that I learned but little from actual observation. His talks, however, were extremely interesting and instructive, and I shall endeavor to give you the main part of them. He showed me all of his sections of the Jensen mouse tumor, both of controls and those treated with trypsin, and presented me with some of each, as well as those of a case of cancer of the esophagus which had been treated for ten days.

To a person not familiar with embryology Beard's theory is difficult to comprehend and to explain properly it will be essential to briefly enter into some of the theories of the early behavior of the fertilized ovum, some of which are well established and others of which have been the result of Dr. Beard's twenty years' work in this field, and are as yet not fully accepted.

In an effort to trace the life cycle from egg to egg, Beard professes to have discovered some truly remarkable things. Instead of finding an embryo developing directly from an egg, as is usually taught, the course is an extremely indirect one, according to his researches upon the fishes, and this corresponds, he asserted, to the course in the higher mammals. The fertilized egg undergoes karyokinetic division and subdivision to a limited number of mitoses depending upon the species. The result of this is a tissue named variously by him as phorozoon, trophoblast, larva, or asexual generation. This tissue, which composes, in reality, partly or wholly, the chorion, is endowed with "indefinite, unrestricted powers of growth." Digestion in these cells is an intracellular, acid, peptic one, as has been proved by Hartog (1).

The final division of these trophoblastic cells results in a primitive germ cell which again divides and subdivides to a various but definite number of mitoses depending upon the species under observation. The actual number for man is not known. This division results in a number of primary germ cells, again the number depending upon the number of divisions, this being definitely fixed for every species. For instance, in the skate the primitive germ cell undergoes seven mitoses resulting in 512 primary germ cells. From one of these primary germ cells the embryo develops. The remaining germ cells form the foundation for the succeeding generation. That is, they develop into the sexual glands of the growing embryo. Beard has observed these cells in various stages of migration into the embryo. In the earliest stages of the skate, while there are still three distinct layers, no germ cells are seen while the outlying blastoderm is crowded. As time advances they are found between the layers, and later still large numbers are seen there. The objective point of these migrating cells is the germinal nidus, and after arriving there they begin to undergo division, and finally after a limited number

* Read before the Philadelphia County Medical Society, January 23, 1907.

of mitoses develop into primitive ova, if the organ is an ovary, or spermatogenic cells if a testicle.

After the embryo is well formed and the organs mapped out and functioning, the trophoblast is no longer of use and disappears. The cause of this disappearance is purely hypothetical, but Beard believes that it is due to the activity of the pancreatic secretion. Up to this time the cell digestion has been an intracellular, acid, peptic one, and from this time, which Beard calls the "critical period," the digestion becomes an alkaline pancreatic one, and as a consequence these cells are digested and absorbed.

This being the normal course, as Beard has found it, we will now go back and consider the deviations which he states may occur. He endows each primary germ cell with what he calls "unconscious memory," which is really little more than an expression of ignorance, for in attempting to explain why an individual cell will form a certain kind of tissue and not another, or why it functionates a certain way and not another, we are dealing with the problem of life itself and its causes, and this probably never will be explained. This theory, however, was originated by Professor Hering, a physiologist, of Prague. Should, for this unknown reason, more than one of the primary germ cells develop, normally, the result would be twins, triplets, etc.

During the act of migration many of the primary germ cells never reach their objective point—the germinal nidus—but wandering between the layers of the forming somatic cells are obstructed in various corners and crevices and are forever lost. The usual fate of these vagrant germ cells is degeneration and absorption, but they may become encapsulated and remain. Should any of these encapsulated vagrant cells attempt to go through its life cycle, the result might be a monstrosity such as the Siamese twins; one embryo attached to another; or one embryo, partly or wholly developed, more or less completely embedded in another well formed one. So we may go down through the scale to the class of tumors known as embryomas, teratomas, or dermoid cysts, which in the ovary would be the result of persistent germ cells.

In the development of a malignant tumor, either the embryonal stage is skipped by these developing vagrant cells, and in proliferating a trophoblast is formed or the cell attempts to go through with its normal cycle—the production of an ovum which in its turn develops into trophoblast, the embryo failing, there is no "critical period" and no check put upon the "indefinite, unrestricted power of growth" with which these cells are endowed. This is an "irresponsible trophoblast," or malignant tumor, mimicking the tissue from which it springs, as described by Sir James Paget. Curiously enough Beard asserts to have seen these vagrant germ cells in the localities most frequently affected by carcinoma, as in the gut epithelium, especially in the rectum, in the kidney tubules, liver, skin, body cavity, etc. Practically always there are some in the immediate neighborhood of the stomach in connection with the yolk stalk.

During development of a fertilized ovum, should the embryo fail to unfold for any reason, or should it die and be expelled without all of its membranes, before the critical period and the membranes or trophoblast be retained for any length of time, the

result might be a malignant growth of the chorion. Such cases developing after a labor at term Beard explains on the ground of the retention of chorion from a previous pregnancy. Still another explanation for chorion epithelioma Beard suggests in the following: "Is it at all unlikely that here for some reason or other, either the wrong germ cell has developed, or at any rate, that such a one had early usurped the place of the developing one? This would be one of the memories which could but result in a malignant tumor—that is to say, one mimicking the structure of correct chorion. If this be true, we have in chorioepithelioma merely a form of cancer arising very early in the life of the individual and invading a new host, the unfortunate mother."

Seeing the trophoblast gradually disappear after the critical period, and knowing the changes which take place in digestion at this time, owing to the development of the pancreas, Beard decided that the pancreatic ferments were responsible. If this be true, his next conclusion was but natural: If the pancreatic ferments cause the digestion and disappearance of the normal trophoblast they must also digest and cause the disappearance of an irresponsible trophoblast or malignant tumor. Trypsin being the proteolytic ferment of the pancreatic juice, he attributed the change to it. Consequently he began experimenting with mice inoculated with the Jensen mouse tumor. A number he kept as controls and to two others he gave injections of trypsin. After ten days' treatment, consisting of four injections, one mouse was found dead, having been caught between the food vessel and cage when intoxicated with trypsin. Post mortem revealed no cause for death. The tumor was one half the size of the controls, and microscopical examination showed a uniform degeneration of all the cancer cells. The second mouse was killed after twenty-two days' treatment of nine injections, at the time one of the controls died of its tumor. The control had a tumor as large as the end of the thumb, and the trypsin tumor was the size of a lentil. Microscopically the cancer cells were all uniformly degenerated, and as Beard expresses it: "They were mere skeletons of cells." I have shown sections of these tumors to Dr. A. J. Smith, who is of the opinion that the changes in them are not unlike those seen in many sections of untreated carcinoma, and that the diminution in size may be due to the spontaneous disappearance of these inoculated tumors spoken of by Gaylord. If this is true, it seems strange that the untreated controls should not also have manifested the same change. Sections of an œsophageal carcinoma, treated for ten days, the patient dying from perforation of the trachea following the passage of a bougie by an interne, showed the same degenerative change. In our own gynæcological laboratory what appears to be these same degenerative changes are frequently seen in cases of untreated cancer of the uterus.

Beard alleges that the action of the pancreatic ferments on the cancer cells is to deprive them of the cancer albumin and the cancer ferment which he calls malignin, first mentioned by Petry in 1899. It is a battle between the two ferments in which the stronger wins. By this action the growth will gradually diminish in size and disappear by absorption; or it will be killed and converted into a perfectly

benign fibrous mass, which will cause no further trouble or may have to be removed surgically if obstructive or severe pressure symptoms are produced; or it will die and slough off if in communication with any of the hollow viscera leaving a perfectly healthy granulating surface behind.

Curiously enough, about the same time that Beard was working on his theory and apparently independently, J. A. Shaw-Mackenzie, of London (2), arrived at practically the same conclusions as to the use of trypsin from an entirely different hypothesis. Finding an excess of glycogen in carcinoma cells, as in all embryonal and rapidly growing tissue, inquiry elicited the following, with a few cases to substantiate them:

1. "The simultaneous presence of carcinoma and diabetes in the same patient is comparatively rare. 2. That there is occasionally seen a substitution of the one disease for the other in the same patient. 3. That there is some alternation between the two diseases in different members of the same family."

These led directly to the inference that, as the pancreas is probably at fault in diabetes, it is also probably at fault in carcinoma, there being either an overproduction or a nonconversion of glycogen caused by a faulty glycolytic function of the pancreas. This led to an experimentation with ferments, and finally on January 19, 1905, to the internal and hypodermic use of trypsin in a case of cancer of the breast.

Shaw-Mackenzie mentions (page 82) R. Odier, of Geneva (3), who also recently independently suggested the treatment of malignant tumors and of diabetes by the injection of a mixture of the extracts of the pancreas, liver, and muscle. Later Odier (4) reports a diminution in the amount of glycogen in the cancers and cessation of their growth after injections of "glycolytic and pancreatic ferments." He worked simply with the idea of reducing the excess of glycogen known to exist in malignant growths, hoping thereby to deprive them of something indispensable to their progress. He has experimented with two horses and two sheep with spontaneous sarcomas, and fifteen dogs and four rats with spontaneous carcinomas. He has had five dogs, two rats, and one horse under observation from nineteen months to four years. In every instance there was a local febrile reaction, and the growth of the tumor was then apparently arrested and has remained stationary ever since.

The treatment consists in the hypodermic injection of a solution of trypsin daily for a period of four weeks followed by the hypodermic injection of a solution of the diastatic ferment, amylopsin, every other day alternating with the injection of trypsin, the maximum dose of which is maintained. This for four weeks, and followed by another period of four weeks or more during which daily injections of amylopsin alone are given.

The trypsin injection that I have used is a sterilized glycerin extract of the freshly macerated pancreatic gland, and, besides trypsin, it contains all the other pancreatic ferments. The amylopsin injection is, I believe, freed from the other ferments. They are both in sixty per cent. glycerin solution, and consequently require dilution with two volumes of water or normal salt solution. They are put up

in sterile glass ampoules, containing about twenty minims each.

The treatment should be started with a few preliminary injections of 5 or 10 minims before the full dose of one ampoule is given. After this the dose may be gradually increased. Maguire, of London, gives two ampoules, or 40 minims, as the maximum dose, but I have frequently given 75 minims without bad effects. The dose of amylopsin should be graduated in the same way.

The injections may be given anywhere except into the tumor, on account of the pain and local inflammation produced. Probably the best place is the loose cellular tissue of the loin. It should be thrown deep into the cellular tissue, but not into muscle. The greatest care should be exercised to render the syringe and the skin at the seat of injection sterile. Abscesses are apt to follow failure in this respect. Pusey, of Chicago (5), reports this fault, but he made his injections directly into the growth. Though I have given over five hundred injections, not one has caused any more trouble than some soreness and induration, which lasts for a few days. The use of eucaine preceding the injection has been advised, but I find it entirely unnecessary.

Trypsin is precipitated by heat, consequently care must be taken to cool the syringe after boiling before the solution is drawn into the barrel.

In addition to the hypodermic injection stress is laid upon the oral administration of some pancreatic preparation. J. Shaw-Mackenzie considers this extremely important, but is unable to explain why it should do good. Bergell (6) thinks that the ferment hydrolytic power of the blood serum and fluids and organs in general should be thereby increased.

The local application, where possible, of a liquid or powdered preparation of trypsin or pancreatin is also recommended where the cancer can be reached. This undoubtedly is useful, for it does cause a rapid breakdown of the mass.

Some patients after receiving a number of injections show toxic symptoms which Beard attributes to the digestion and absorption of the cancer cells. These symptoms, beginning with nausea and vomiting, pain in the back and drowsiness, develop, but usually clear up promptly under injections of amylopsin, while the trypsin injection is continued but the dose diminished. Should the trypsin be continued without amylopsin in these cases, high arterial tension, albuminuria, rigors followed by rise of temperature and coma might develop.

After leaving Edinburgh I called upon Dr. Robert Maguire, of London, St. Mary's Hospital, who has been doing most of the clinical work. He corroborated all Beard told me, and related five cases which will later be published. The first patient improved remarkably, though he was not said to be cured at that time. The case of cesophageal cancer has been mentioned. The remaining three patients were showing signs of improvement. On the other hand, the London Cancer Hospital used the treatment, in an indifferent manner, in six cases without result. A preparation was used, put up by a firm in London from the dried commercial trypsin which Beard and Maguire condemned as being inert. As immediate results were not received, the treatment was abandoned. The Middlesex Hospital also used it in three cases without results after trying the inert prep-

aration. St. Bartholomew's Hospital used it in three cases without results, again the inert preparation was used, but the trial has not been abandoned. The report of these institutions will be published.

A few weeks ago I received a copy of a letter written to Dr. Beard by a prominent physician of Naples in which is described what appears to be a perfect cure of a case of cancer of the tongue after four months' treatment. This is the first case in which an absolute cure is said to have been observed.

Shaw-Mackenzie reports twelve cases treated. Four patients died while under treatment; seven were improved locally and generally, one, a case of cancer of the pylorus, appears to have been cured. The diagnosis was not a microscopical one, though an exploratory laparotomy had been performed some time before and the condition found inoperable.

Zanoni (7) repeated and confirms Beard's experiments on mice. He injected large doses of trypsin into the peritoneal cavity of guinea pigs without toxic effects. He found that the dose required to kill a mouse tumor was so large that the proportionate dose for man would be too great to administer—estimated at 177 c.c. per 70 kg. weight.

Pusey (5), though condemning the treatment, reports one benefited—apparently cured. Six other patients with carcinoma and one with sarcoma were unfavorably affected. Davis, of St. Louis (8), reports two cases. An extensive epithelioma of the face was treated over three months when the ulceration increased, though it had been held in check up to that time. His second case was one of extensive peritoneal carcinosis, treated sixty-three days, and discontinued on account of weakness of the patient. He used very small doses and never gave amylopsin. Nevertheless, he noticed a decrease in the discharge and fœtor, and a relief of pain. The fœtor was marked when the injections were not being used.

Rice, of New York (9), reports four cases. One case of laryngeal carcinoma was cured after less than two and a half months' treatment. Unfortunately, there was no microscopical examination made of the tumor, though clinically there was no question as to the diagnosis. Three other cases were not markedly affected. Morton, of New York (10), reports thirty cases. His first case was an extensive carcinoma of the breast. The patient was treated for seven months and then operated upon. The microscopical examination of sections by Dr. H. T. Brooks, of New York, showed changes similar to those described by Beard in his mouse tumors. Two of his patients with epithelioma of the face have been cured to date. Five died while under treatment. Eighteen were improved, and in five no change was apparent. In all of his patients there was an amelioration in the progress of the disease. Enlarged glands rapidly decreased in size. He noticed the greatest improvement after starting with the injections of amylopsin.

F. H. Wiggin, of New York (11), reports a case of fibrosarcoma of the tongue held in check while under treatment, and at one time almost cured when the patient refused further injections. There was a diversity of opinion among pathologists as to the exact nature of the growth, though clinically its action was malignant. After the treatment was stopped the growth increased in size. Campbell, of Chicago (12), reports a case of malignant disease involving the left tonsil, base of the tongue and epi-

glottis markedly improved. Again, it is unfortunate that no sections were made for microscopical examination until the patient had been under treatment for some time, when the microscope cast some doubt upon the diagnosis of carcinoma.

Thus it will be seen that of the reported patients five have been pronounced cured, though in not one of them has the microscope corroborated the clinical diagnosis. Time alone, of course, will tell whether or not these cures are permanent.

It is the consensus of opinion of all those who have applied the treatment, and in this I concur, that whatever else the treatment may do it certainly does in most cases cause: 1. An arrest or shrinkage of the growth. 2. Improvement in the general nutrition in which the appetite picks up and the weight is maintained or increased. 3. Diminution or cessation of pain. 4. Diminution in the discharge with a decrease of fœtor, except in those cases where sloughing occurs.

In conclusion I wish only to commend Zanoni's observation that large doses are required as it stands to-day. Should this treatment be perfected it will be by the finding of methods of obtaining purer and more concentrated solutions of the ferments, so that they can be administered in reasonable amounts.

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THE DIFFERENTIAL DIAGNOSIS OF DILATATIONS AND DEEP DIVERTICULA OF THE ŒSOPHAGUS.

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The treatment of dilatations of the œsophagus was formerly one of the most unsatisfactory tasks of the therapeutics of œsophageal diseases. They were considered rare curiosities, and one did not ascribe much value to the differential diagnosis of the different forms of dilatations and diverticula. But after the extension of researches and of our therapeutic possibilities, the interest in those diseases increased more and more, and even surgery has ventured to undertake the operative treatment of dilatations and diverticula. Consequently, the diagnosis and especially the differential diagnosis of these conditions has become a question of practical significance; and we must consider it fortunate that by means of the recent methods a reliable differential diagnosis is rendered relatively simple.

The difference between a dilatation and a diverticulum consists, as is known, in the former being a diffuse and the latter a circumscribed ectasia of the œsophageal wall. According to their origin the diffuse dilatations can be divided into those based upon an anatomical stenosis and those springing from spasmogenic causes. The latter, formerly also called "idiopathic" diffuse dilatations, are usually ectasiæ, involving a relatively large part of the œsophagus and are more or less spindle shaped. The ectasia caused by a mechanical impediment involves usually a smaller portion of the œsophagus, and has most frequently also a large extension in its latitude. Diverticula are invaginations of the wall, but not of its whole circumference, and are caused either by a pressure from within or by an external traction at a circumscribed place. Already in 1877 von Ziemssen and Zenker divided them into pressure and traction diverticula.

For the differential diagnosis only the cardiospastic dilatation and the deeply located diverticulum will be discussed. The anatomical location of this diverticulum may evidently lead to a confusion with a diffuse dilatation, and numerous experiments and the various modifications of the methods of research prove that we meet with great difficulties in solving this question.

The subjective complaints are almost similar in all these diseases. Fulness after eating, pains and pressure in the œsophagus, regurgitation of undigested food, are symptoms occurring in an ectasia as well as in a diverticulum. We are therefore exclusively limited to the objective examination, the first object of which will be to discover the presence or absence of any dilatation, our first task consisting in the detection of any dilatation of the lumen at all.

If we meet with an obstacle after the introduction of a stomach probe at a distance of about 35 to 40 cm., and obtain substances by siphoning which have not come into contact with the gastric juice, we shall be allowed to assume a stagnation of the ingesta above the cardiac orifice.

An exact determination of a dilatation is made possible by a method of measuring the volume described by Strauss. For this purpose Strauss em-

ploys an œsophagus tube at the lower end of which a thin rubber bag is attached. The latter incloses the opening of the sound and extends about 20 cm. from the lower end upwards. The upper end of the sound is combined with a double cock. One opening in the latter leads to balloon bellows, whilst the other leads to a pipe, being in connection with a U-shaped glass tube. The end of the sound with the compressed and well flattened airless bladder is introduced into the œsophagus up to a mark 35 cm. distant from the lower end. After having pumped air into the rubber bag by means of the bellows, until the patient indicates a sensation of pressure by lifting his hand, the bellows are closed with the cork. For determining the quantity of the pumped air, viz., the capacity of the dilatation, a glass cylinder serves, containing 1,000 c.c. of water, combined with the U-shaped tube and filled, as is shown in Fig. 1.

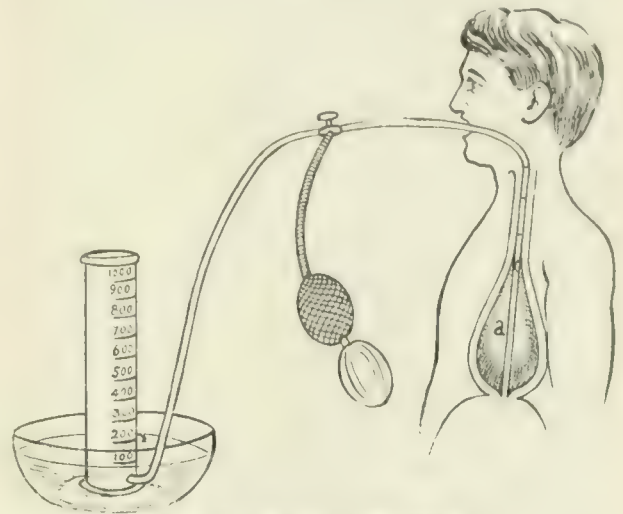


FIG. 1.—a, balloon in œsophagus

As soon as the cock is turned to the direction of this *eudiometer*, the air in the œsophagus is emptied. This may be accelerated by a profound inspiration of the patient, whereafter the quantity of the air can be read at the endiometer. With this method Strauss was able to obtain figures of 500 to 600 c.c. in dilatations (Fig. 1). This *volume measurer* offers the following advantages: On the first hand, its use is not at all disagreeable to the patient. In addition the volume measurer furnishes more exact results than the determination of the infused and siphoned quantity of fluids, since in the latter method a part of the infused fluids is liable to flow into the stomach. For the cardiac orifice is in such cases not at all completely impenetrable. With the described method, however, one is independent from an eventual penetrability of the cardiac orifice. Even the determination of the volume of the œsophagus by means of an inflation of air is not absolutely certain, since hereby likewise the passage of air into the stomach is not entirely impossible.

A further important factor in favor of Strauss's method is, as will be shown, its use for the differential diagnosis between a dilatation and a diverticulum.

Of the former methods of differentiating a diverticulum from a cardiospastic dilatation may first be mentioned a differential sign first stated by Mintz. One may recognize from the quality of the siphoned

result of food whether the latter originates from a diverticulum or from a diffuse dilatation. For, if the contents do not originate from the last meal, but from the day before, a diverticulum is said to be present. One may assume that if a diverticulum is filled, the following food can easily pass. With a diffuse dilatation, however, the food last eaten would always participate in the stagnation.

Of all the other differential diagnostic means, the manifold fenestrated sound has up to date been the instrument most frequently employed. All sound experiments are based upon the idea that the liquid contained in a dilatation flows off as soon as the passage through the cardiac opening is made free by such a sound. A diverticulum, however, always remains filled, no matter which position the sound assumes. Rumpel's *double sound experiment* has been fundamental in this regard, after already Böckelmann had noticed that, after the introduction of a sound into the stomach of his patients and filling the œsophagus with liquid, he obtained upon retraction only a small quantity of the infused liquid. In Rumpel's experiment a multiple fenestrated sound is so introduced that one window opens into the stomach, whilst the fenestrated portion is lying in the œsophagus above the cardiac opening. Now a definite quantity of water is infused by a common stomach tube. If a dilatation is present one cannot siphon water out of the œsophagus, since the liquid has flown off into the stomach through the supracardial openings of the sound. If, however, a diverticulum is present, the total amount of liquid can be siphoned, since the latter is accumulated in the diverticulum.

This experiment has undergone various modifications. Richartz allows the patient to drink milk some time before the experiment, and then irrigates the œsophagus. Thereupon a fenestrated sound is introduced down to the impediment. Now a color solution is infused, which remains in the œsophagus. After pushing the fenestrated sound into the stomach one tries to siphon the milk. Then one retracts the sound out of the stomach and washes with clear water. If we have to deal with a dilatation, the water ought to come back uncolored, since meanwhile the color solution has flowed into the stomach. In the other case there appears colored water. Starck describes the following modification: After the infusion of a greater quantity of water into the stomach, one quarter of a litre of water intensely colored with methylene blue is introduced into the œsophagus apart from the first tube. In lowering the funnel after some minutes, clear water is emptied originating from the stomach. After then carefully retracting the tube out of the stomach into the œsophagus, the total quantity of methylene blue can be siphoned if a diverticulum is present. In Oppler's modification a fenestrated sound is introduced, in which a metal spiral tube is lying. Water colored blue with litmus, infused into the œsophagus, remains blue after siphoning. Now the internal tube is retracted and the external sound pushed into the stomach. With a diffuse dilatation red litmus water must be obtained by siphoning, since meanwhile the infused litmus water had entered the stomach. Likewise Zweig has described a quite practical modification of Rumpel's experiment. Zweig first introduces into the stomach a sound, the presence of which in the stomach he

proves by the test of typical stomach contents. Thereupon methylene blue solution is infused through a second sound, only reaching down to the œsophagus. After the retraction of the stomach probe, one must be able to prove the color solution in the latter if a dilatation is existing. In Rumpel's experiment it always is necessary to prove that the fenestrated sound extends into the stomach. In addition it has the disadvantage of two probes being introduced, which procedure is not easily endured by every patient. Moreover one does not always succeed in introducing the sound.

Strauss recommends for the same purpose another procedure. He puts a mark on the fenestrated sound at a distance of about 45 cm. from the highest window and introduces this sound up to the mark. If the sound is in the stomach, not only an inflation noise is heard with the ear lying on the gastric region, but also the increasing filling of the bag with air is to be observed by inspection and percussion. Since the sound happens not rarely to bend within the œsophagus, Strauss has described a method, consisting in the inflation of air during the introduction of the fenestrated sound. The inflated air dilates the wall of the œsophagus, evens the folds, and contributes to the opening of the cardiac opening by the increase of the intracœsophageal pressure. By this means the passage of a sound through the cardiac opening is rendered considerably easier.

A diverticulum will sometimes be recognized with a diverticulum probe, as described by Leube and later modified by Strauss; and Kraus regards the examination with the diverticulum probe even the most trustworthy differential method. For in a dilatation the sound will enter the stomach in all directions. If an impediment is existing, one may try, according to Richartz, whether the stomach can be entered after some time. This is indeed frequently possible, since the spasm, as a rule, gives way after waiting some time. If it is possible to pass the cardiac opening without a change of direction, we have to deal with a dilatation. The positive result of the experiment proves also here more than the negative. In addition Kelling has described some special procedures with diverticulum probes enabling the differential diagnosis to be made.

Another, it is true not always certain, method of differential diagnosis we possess in radiographs taken in the so called oblique diameter (fencer position) after a previous introduction of bismuth. Strauss formerly introduced a soft rubber pipe filled with small shot into the œsophagus. In radioscopy the tortuous course of the pipe could be observed. In addition, Strauss employed a metal spiral sound, described by him as a diverticulum sound, which could be bent and directed as desired.

From the relation between the position of the small shot sound and that of a simultaneously introduced diverticulum probe certain conclusions may be drawn concerning the kind of the cavity. Kraus says in his book, written in 1902, that the Röntgen method only in rare cases furnishes a positive result. In the mean time the methods of x ray examination have certainly made much progress. For the differential diagnosis, however, the results of this method are to be applied with a certain precaution.

The examination by means of œsophagoscopy, recommended by several authors, is likewise not al-

ways successful. According to Strauss and Starek technical difficulties (mucous contents of the sac) are especially here obvious to œsophagoscopy and sometimes render its performance rather difficult. In the œsophagoscopy of such cases Strauss now always aspirates previously the mucus by means of a stomach aspirator and does not allow the patient to eat anything for twelve hours, after having previously washed the œsophagus. Besides, œsophagoscopy is hardly practicable in numerous people.

From observing a swallowed piece of bismuth certain conclusions may sometimes be drawn. The bismuth bolus entering a diverticulum will, for instance, assume a different position from that of the bolus in a cardiospastic dilatation, where it is retained for some time above the diaphragm and then passes into the stomach.

By a far simpler method than previously mentioned results are obtained for the differential diagnosis between a dilatation and a diverticulum by the use of the before mentioned volume measurer of Strauss. For if it is possible, after opening the cock,

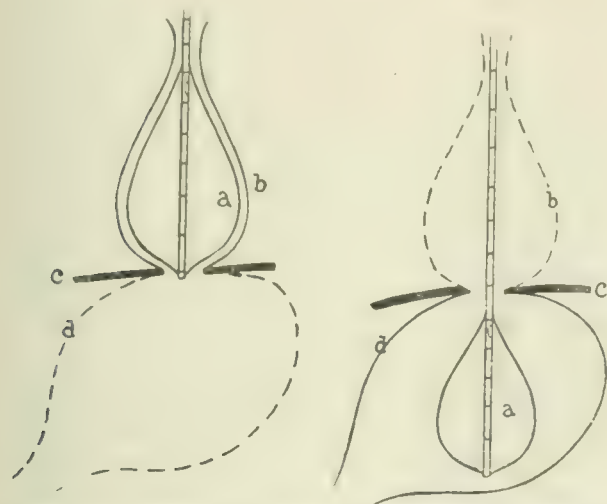


FIG. 2. a, balloon; b, distended œsophagus; c, diaphragm.

in the direction of the eudiometer, to push the rubber bag by a soft pressure into the stomach and to inflate it again, one determines at once that the cavity, in which the balloon has been inflated, has an opening below, communicating with the stomach. For the differential diagnostic use of the method described by Strauss, it is true, only the positive result is decisive, and it must be especially determined whether the balloon has indeed been pushed into the stomach. For this purpose it is by no means sufficient to ascertain that the balloon has been pushed forward for 20 cm., since one must also consider the possibility of the sound having become twisted in the œsophagus. Moreover, as Strauss emphasizes, it is necessary to prove the presence of the inflated rubber bag in the stomach by a repeated inflation of the balloon or by inspection, palpation, and auscultation (See Fig. 2).

This is very easily done, as Strauss already has shown in a certain case. According to this new application of the volume measurer of Strauss, the original procedure has undergone an alteration in so far as the balloon after its inflation in the œsophagus

is no more directly extracted from the œsophagus, but slowly pushed into the stomach, after previously opening the cock leading to the eudiometer. In this procedure, not at all annoying the patient, the air in the balloon is pressed out by pushing the balloon through the cardiac opening. For this modified use of the volume measurer it has been proved practical to transfer the opening of the bag communicating with the lumen from the lower to the upper end of the bag. If one considers the form of the balloon inflated in the œsophagus and the relations of the lower end of the sound to the cardiac opening, one will doubtlessly understand that the peculiar position and the relations of shape attribute to an easy dilatation of the cardiac opening, since the convex lower end of the balloon extends the cardiac region and thus permits of the entrance of the lower end of the sound into the cardiac opening.

At all events I believe that the differential diagnostic method recommended by Strauss, allowing at the same time a determination of the œsophageal dilatation, is at present the quickest and most comfortable of all methods in question, and may therefore be recommended for a further use. We hope that on account of the simplification of the methods the diagnosis of the diseases in question will furnish an increase of observations, and that therefore further important material for the solution of this problem will be secured. For, according to Kraus, the clinical diagnosis has up to date only rarely been made accurately.

Except in one case, discussed in connection with the report of the method, Strauss has up to now been able to make the differential diagnosis between a diverticulum and a cardiospastic dilatation in three cases with the described method. Of these three cases two were observed in the private practice and one in the polyclinic of Professor Strauss, which I attended during the last two winters. This last case is as follows:

CASE.—The patient was a woman of thirty years of age, having suffered for three years from difficulties in swallowing (remaining of food above the stomach). Liquids were said to pass the œsophagus easier than solid food. Almost daily vomiting was said to have occurred, together with a sensation of pressure behind the sternum. According to the patient the vomited material always corresponded to the previous meals, and solid ingesta taken with a mixture never failed in the vomitus. The body weight was said to have considerably decreased; but after a treatment carried out in the meantime the complaints ceased for six months and an increase in weight of fifty-eight pounds occurred. In the last months the difficulties in swallowing and the emaciation as well as the pressure behind the sternum were increased. The bowels were constipated, the appetite only moderate.

The objective examination showed a pale, lean, and considerably emaciated patient with *factor ex ore*. Heart and lungs showed nothing particular. Pulse was regular, not remarkably frequent. The abdomen showed besides a gastroptosis nothing noteworthy, it was soft and empty. On the examination of the œsophagus, we found a resistance for soft and hard sounds the distance of 41 cm. from the teeth. This resistance gave way after waiting some time even to the thickest probe. By the inflation with the volume measurer a capacity of 450 c.c. was achieved. The balloon of the volume measurer could be pushed into the stomach and inflated again without any difficulty. The pressure of the bal-

loon in the stomach was determined by auscultating the inflation noise and by percussion. By means of the Mickulicz pressure determination after the infusion of lukewarm water a pressure of more than 30 mm. Hg. was endured. In œsophagoscopy the mucous membrane of the œsophagus appeared pale gray, very opaque, and relaxed. At the cardiac opening two red lip shaped formations are to be recognized, projecting in the manner of vocal cords.

Diagnosis: Cardiospastic dilatation of the œsophagus.

The treatment was first carried out with irrigations and a sparing diet, later on with dilations of the cardiac opening by means of Strauss's tampon sound, or an especially thick œsophagus tube, resulting in considerable improvement.

I do not intend to enter here further into clinical details of this case, since it has fully shown the known peculiarities of the diseases concerned in its clinical course. As noteworthy I wish to emphasize the fact that the present case has likewise shown a gastropsis, which, according to Strauss, has frequently been observed in these diseases and which is not without interest, according to Strauss's explanations, as regarding the question of pathogenesis.

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GONORRHOËAL EPIDIDYMITIS. A STUDY OF 264 CASES.*

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A study of 264 cases of epididymitis, observed in 241 dispensary patients, shows that this complication occurred in 16 per cent. of patients suffering with gonorrhœa.

Epididymitis is conceded to be the most frequent complication of gonorrhœa. In 11,972 cases of gonorrhœa observed by Rollet, Tarnosky, Julien, and

Finger, epididymitis occurred in 2,244 cases, or 18.7 per cent. It is usually unilateral, either side being affected with about equal frequency. Of the 241 patients, 123 had a right sided epididymitis, 118 a left sided and in 23 both sides were involved. In double epididymitis, one side is usually involved some time after the first, in three patients both sides were involved on the same day.

The high percentage of epididymitis observed in dispensary practice is due to the fact that many of the patients seek relief only for this condition. A previous attack of gonorrhœal epididymitis predisposes to subsequent attacks. Nineteen of the cases were recurrences, eleven recurring on the same side. In the patients who previously had a double epididymitis, a recurrence was noted on both sides in six, and on one side in two. It was found to occur most frequently in the second and third week of a gonorrhœa. It may occur earlier, as in the first week, through agencies which provoke the early onset of a posterior urethritis. It may also follow months or years after infection. The time of onset is shown in the following table:

42 cases occurred in the first week; 37 in the second week; 44 in the third; 19 in the fourth; 23 in the fifth; 14 in the sixth; 12 in the seventh; 10 in the eighth; 63 after the eighth week.

Carelessness of observation on the part of the patient, exacerbations of a previous epididymitis, and unfavorable agencies, such as drink and intercourse, are responsible for so many of the cases developing in the first week. The late onset is generally to be explained by the fact that many patients believing themselves well, with the subsidence of the acute symptoms, indulge in vices which provoke an exacerbation of the gonorrhœa. Instrumentation at this time also acts as an exciting cause.

Epididymitis is due to a direct extension of the gonorrhœal inflammatory process from the posterior urethra, by way of the ejaculatory ducts and vas deferens to the epididymis. It is no longer believed to be due to lymphatic or blood metastasis. Gonococci have been frequently demonstrated in suppurating epididymitis by Routier, Columbini, Gross, Hartung, Witt, Pizini, Raskii, Bearman, and others. They have also been demonstrated in the fluid withdrawn by puncture, from the infiltration of the recently inflamed epididymis and the coexisting hydrocele.

The gonococcus may lie dormant in the epididymis for many years after an apparent cure. This accounts for the development of a gonorrhœal epididymitis months or years after a cure, from traumatism and other causes. In some of these cases the gonorrhœal nature of the infection is proved by the secondary infection of the urethra, as shown by the discharge in which gonococci may be demonstrated, and both portions of the urine appearing cloudy in the two glass test.

Through the growth of the gonococci upon the surface of the vas deferens, a cloudy swelling of the epithelium is produced, followed by necrosis and desquamation. By extension into the deeper layers, œdema, thickening, and round cell infiltration results. The inflammatory process reaches the tail of the epididymis, and involves the whole structure in a very short time. The channel becomes dilated and filled with pus, semen, and necrotic epithelium. The

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tunica vaginalis is soon involved by a direct action of the gonococcus, and hydrocele results. In this exudation Bearmann demonstrated the gonococcus. In addition to the progressive growth of the gonococcus, Oppenheim asserts that the inflammatory process extends because of a reversed peristalsis of the vas deferens. The changes thus described also take place in the vas, but only when the serous coat is involved is an enlargement of the same perceptible. The funicular process of the cord being patulous, a hydrocele of the cord follows.

Very rarely does the process go on to suppuration. At times one or more small pus pockets are formed in the tail of the epididymis. In these resorption follows the subsidence of the acute symptoms, the cavity is filled with connective tissue, which remains for years as a small nodule. By contraction of the connective tissue many of the canals are obliterated, resulting in a cystic dilatation of the part cut off, due to a stasis of spermatozoa, and the fatty degeneration of leucocytes and epithelial cells.

Contrary to the statement found in many textbooks, the testicle is only exceptionally involved. Post mortem findings in the greater number of cases collected by Finger showed the noninvolvement of the testicle. He reviewed the literature since 1804, when the first report was made by Monteggia. Microscopical examinations were made in each case.

It is usually stated that poor treatment, particularly injections and irrigations, is responsible for the development of epididymitis. Of the 264 cases studied 81 developed while under our observation. An analysis of the treatment shows that 27 developed after the administration of the balsams alone, 19 after injections (9 of which were astringents and 10 antiseptics), 6 after balsams and injections combined, 4 after urinary antiseptics, 8 after irrigation, and 6 after deep injections. The remaining 12 patients, believing themselves cured, did not report for treatment, took no medicine, and only returned when the epididymis became involved.

The relation of epididymitis to previous treatment in 576 cases reported by LeFort is as follows: No treatment 264, balsams alone 73, injections 82, balsams and injections combined 60, treatment unknown 97.

Excesses in drink, intercourse, athletics, and the passage of instruments into the urethra, were some of the causes in patients presenting themselves with epididymitis, a history of their previous medical treatment being unsatisfactory. Of the 183 cases 10 developed after drink, 3 after intercourse, 11 after drink and intercourse, 3 after athletic exercises and 10 after instrumentation. In one case epididymitis followed the mumps, the patient also having gonorrhœa, and in a second it developed immediately following an operation for appendicitis. In the remainder no direct cause could be assigned.

Epididymitis usually begins with a sharp pain in the scrotum, radiating to the inguinal region and the back. At times there is severe pain in the thigh. Enlargement rapidly follows to about the size of a lemon. The skin overlying is red, warm, and tense. The gait is modified to relieve the pressure and pain, the legs being widely separated. There may be fever and constitutional symptoms, but vomiting mentioned in most textbooks has never been observed. An exacerbation of the urinary symptoms, mani-

fested by frequent imperative urination, occurs. Fainting is prone to follow even gentle handling. A distinct line of demarcation can usually be felt between the large hard epididymis, lying behind and the soft small testicle in front. The tail generally shows the most involvement. The acute symptoms reach their height in from four to five days.

Coexistent with the involvement of the epididymis there is usually some inflammation of the seminal vesicle of the same side and the vas deferens. The corresponding lobe of the prostate is frequently enlarged and tender. The seminal vesicle can be usually palpated just above it, as a tender nodule, the size of the tip of the little finger. When the vas is perceptibly involved it usually follows the epididymitis. Cases, however, are observed in which a funiculitis precedes, and in some cases it is alone the seat of infection. Many patients are obliged to go to bed, and then lie with their knees flexed, to prevent dragging on the cord and to remove the pressure of the bed linen. In some cases the swelling is intense, but pain is little complained of.

The tunica vaginalis becoming involved, and acute exudation takes place between its two layers, resulting in hydrocele, which further increases the size of the scrotum and obscures the line of demarcation between testicle and epididymis. Its presence may be readily demonstrated by the transmission of light test.

The acute symptoms subside in from four to six days, the swelling slowly disappearing in the next few weeks. A hard nodule may remain for months or years, either at the head or tail of the epididymis. This general symptomology allows of many variations. Abdominal pain with high fever and collapse have occurred. Hunter was the first to call attention to peritonitis complicating epididymitis and seminal vesiculitis.

Usually with the onset of the acute symptoms, the discharge ceases, and with the subsidence the discharge returns. In 55 of the 81 cases the discharge ceased, in 14 it was diminished, and in 12 no records were made. In 12 the discharge returned after the acute symptoms had subsided.

In what manner the development of epididymitis influences the discharge is unknown. The presence of fever is regarded by some to have an inhibiting influence, but fever is not a constant symptom and can only explain a small proportion of the cases.

The following local phenomena were observed: 31.6 per cent. had ardor urinæ; 24.7 per cent. priapism; 16.8 per cent. chordee; 40.0 per cent. urinary frequency; 34.7 per cent. imperative urination; 0.2 per cent. terminal hæmaturia.

A two glass test of the urine showed 189 with both cloudy, 24 with first cloudy and second clear, and 10 with both urines perfectly clear. During the acute stage it is natural to expect both urines to be cloudy. In the 20 in which the second urine was clear the patients complained of very frequent imperative urination. The second urine appears clear in these cases because the pus has not time to cloud the urine in the bladder, all of the pus being washed out in the first portion of the urine voided. We have frequently observed in patients suffering with acute posterior urethritis a clear second urine, while some time after, both glasses would appear cloudy. Where the urine was perfectly clear the patients presented themselves

some time after the onset of epididymitis. In 12 cases funiculitis was marked. No case was seen in which funiculitis existed alone.

Some degree of seminal vesiculitis is a frequent accompaniment of acute epididymitis. In the greater number of cases the seminal vesicles are palpable and tender. We have examined the last 50 patients, with a view of determining this point, and in 42 found some degree of enlargement and tenderness of the seminal vesicle of the corresponding side, together with enlargement of the prostate.

Peterson found that four per cent. of gonorrhœa was accompanied with spermatocystitis. Naturally the percentage is enormously increased when the vas deferens and epididymis are involved.

Four cases were followed by persistent hydrocele. Two of these patients were subsequently operated upon and two were tapped, the fluid from one appearing discolored, due to the administration of methylene blue. Three patients, with recurrent attacks of epididymitis, developed tuberculosis of the epididymis. Suppuration occurred in one case, and in another a pyocele developed.

We have not made any studies relative to sterility following epididymitis. Benzler, who has studied this condition, reports these statistics: Simple gonorrhœa is followed by sterility in 10.5 per cent. of cases; gonorrhœal unilateral epididymitis by 23.4 per cent., and gonorrhœal bilateral epididymitis by 42.7 per cent.

It may be well to call attention to abnormalities in the relation of epididymis to the testicle. In three patients the epididymis was in front of the testicle.

In the treatment of this affection various applications of wet dressings and ointments have been employed. The best results were obtained in ambulatory cases by the local application of a 20.0 per cent. guaiacol ointment, held in place by a well fitting suspensory bandage. All local treatment of the urethra should be discontinued and due attention given to the thorough evacuation of the bowels and the general hygiene of the patient. Under this application the pain is relieved in from two to seven days. The tenderness subsides a few days later.

After the acute symptoms are relieved an ointment composed of equal parts of the ointments of belladonna and mercury, together with the same quantity of ichthyol ointment 10.0 per cent., and lanolin, should be employed to hasten the absorption of the exudate. We have found this method much superior to strapping the testicle.

In many of the cases the symptoms were so severe that the patients were sent to the hospital and confined to bed. In their treatment the best results were obtained by the application of a saturated solution of magnesium sulphate, in conjunction with elevation of the scrotum, as recommended by Dr. Henry Tucker. By this means the pain subsides in from four to forty-eight hours, after which the ointment is applied.

PROFESSIONAL BUILDING.

After removal of the appendix symptoms of appendicitis sometimes persist, leading the patient to believe that the organ had not been extirpated. These are generally due to a colitis, which must be treated by high irrigations, diet, etc.—*International Journal of Surgery*.

CONCERNING THE MORE COMMON DISABILITIES OF THE FOOT.*

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An enumeration of the painful conditions of the foot would make a somewhat lengthy list. At present we will consider the various painful conditions and disabilities, which occur sufficiently often to be of interest to the general practitioner. Some of these painful conditions are infections, as gonorrhœal and tuberculous foci. Others are secondary to wasting diseases, such as the true rheumatic flatfoot, or the



FIG. 1. Imprint of normal foot (after Ellis).

condition may be due to occupation, as where one stands for long periods or lifts great weights. Then we have conditions distinctly static in character, such as dropping of the arch, with eversion of the feet, which we call pes planus dolens, painful flatfeet. Some of these painful conditions are neuropathic in character, as occur in tabes. Then we must remember that a varicose condition of ankles and legs may cause rather severe pain about ankles and feet. Then there are the painful conditions following the use of improper shoes, and the often obstinate condition of flattening of the anterior arch, Morton's disease. Also painful conditions due to trauma, sprain, or exertion, as heel trauma, tenosynovitis, and bursitis. Under the latter we have Albert's disease or achilodynia. Again the trouble may be due to callosities, or ingrowing toenail. Also we have a group of neurologic conditions, many of them obscure and painful

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conditions due to poor circulation, exposure to cold, etc.

Though it is impossible to take up all these conditions seriatim to-night, we will consider certain diagnostic points which are of value, and we will briefly consider the principles of treatment. When a patient presents himself complaining of pain in the foot, the

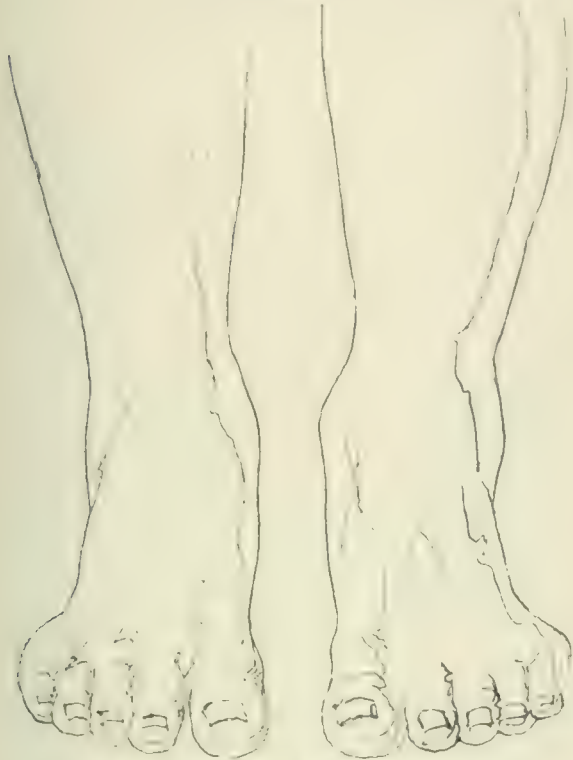


FIG. 2.—The position of strength, feet parallel.

last thing to think of is rheumatism, and the first thing to do is to examine his feet. A proper examination of the feet consists in noticing the general contour, presence or absence of swelling, existence of any deformity or thickening, exact location of any painful areas, condition of both greater and anterior arches, amount of dorsal and plantar flexion, degree of adduction or inversion and of abduction or pronation, noting the condition of the various tendons, and specially of the achillis bursa. The position of feet and ankles should be noted while patient is standing. His gait in walking should be observed and his tread by inspecting the soles of his shoes. Both feet should always be examined and compared. The degrees of flexion have been variously placed by different writers, and they vary much in different individuals. Normal plantar flexion is usually between 30° to 40° , while normal dorsal flexion varies from 15° to 30° . Absence or diminution of dorsal flexion is indicative of impaired function and is often the forerunner of the weak or flatfoot. Absence of dorsal flexion always indicates a condition of equinus. In testing for adduction or inversion, we should obtain a marked elevation of inner side of foot, often amounting to 20° to 30° , as contrasted with abduction, which, though present in the normal foot, is slight. Any limitation of motion indicates weakness. In making our examination we must bear in mind the functions of the foot. First, the weight bearing function, dependent on the integrity

of bones and ligaments combined with proper muscular activity, and secondly, the walking function, consisting of the elevation of the body, its propulsion forward, combined with a proper amount of elasticity, this latter being dependent on an absence of muscular rigidity, and normal freedom of motion. The position of the weight bearing line, normally extending through patella, along the tibial crest and through the second toe should be noted. In the weak and pronated foot this line drops to the inner side of the second toe. Having obtained a history of the patient, followed by a proper examination, we make our diagnosis.

Let us briefly consider some of these conditions, and such diagnostic features as have proved of value.

Achillodynia or *Albert's disease* is an inflammation of the bursa situated between the lower end of tendo achillis and the os calcis. It may be acute or chronic, frequently subacute. In this condition we have a history of standing for long periods, if it is a simple bursitis, or it may be gonorrhoeal with its usual antecedent history. Usually, there is diminished dorsal flexion, a certain care or awkwardness in placing foot on the ground, as well as the localized pain and thickening. In some of these cases the condition is evident, in others a careful examination is necessary to locate it. This condition, if untreated, will very likely go on to a truly weak foot, either a pes planus or pes valgus. The treatment consists in the application of the cautery, strapping, massage, or excision may be required. Rubber heels are of value. This condition is by no means uncommon.

The *Everted Foot* is one which has gradually been thrown or displaced outward. The greater arch in this condition is often fair and may be practically intact. This condition is practically one of simple valgus. This is truly a weak foot, and in most cases is due to improper walking and standing, combined



FIG. 3.—"Pes planus doloris."

with improper shoes, specially the high heeled shoe. This trouble is met with quite frequently in young girls. A certain number of cases follow a sprained ankle, where the physician has neglected to treat such a condition in position of inversion. The everted foot is characterized by diminished dorsal flexion, though in mild and early cases we are able to throw the foot in the position of inversion. The pa-

patient complains of a weak foot, an improper tread, and usually some pain. Where the eversion is quite marked pain may be present just below the external malleolus, due to pressure at this point. In some of these cases pain is absent. There may be some muscular spasm or rigidity. The treatment consists in manipulating the foot, so as to place the foot in position of extreme inversion. Proper orthopædic shoes must be worn. The sole of this shoe should be raised a little along the inner border to maintain the

position of inversion. The heels should be low and broad. The foot should be manipulated daily, so as to restore a full range of motion. The patient must be taught to walk and stand properly. Exercises must be instituted to strengthen weakened muscles.

True Flatfoot—Pes planus dolens.—These cases have to be considered in classes, as they vary in regard to severity of symptoms, degree of deformity, as well as the kind of treatment indicated.

Mild Cases.—In these cases there is some pain, generally at astragaloscaphoid junction, or pain may be referred

to plantar region. A slight sinking of the arch is noticed on standing, usually accompanied by a mild degree of eversion. Dorsal flexion is diminished or absent, and sharp pain is elicited by making pressure over head of astragalus. A slight depression of head of astragalus resting on and stretching the calcaneoscaphoid ligament is apt to produce rather severe pain. The shoes should be examined, they showing the characteristic tread, with pressure signs and wearing away of inner side of sole, while frequently the outer third of sole shows little sign of wear. The treatment requires that the shoes of the patient be built up on the inner side at once, so as to support the foot in position of inversion. Passive motions are carried out daily, the foot being carried to the limit of adduction, dorsal and plantar flexion. Exercises are instituted to strengthen muscles and elevate the arch. The patient is instructed to walk and stand with feet parallel. Turning the toes outward is forbidden.

Severe Cases.—In these cases the deformity is more marked, the foot more rigid, and the pain often severe. Disability is frequently marked. Dorsal flexion is absent and adduction or inversion diminished. The weight bearing line falls within the great toe. The first indication is the complete reduction of the deformity, the replacement of the arch and correction of the eversion, the overcoming of all muscular rigidity, and throwing the foot into the position of extreme inversion. Wrenching and manipulation accomplish this often at the first sitting.

The corrected position may be maintained by long inversion straps extending to knee, a small well fitted triangular pad of felt placed under the greater arch, combined with the built up shoe, after the manner of Thomas. In some of these cases we employ the orange peel plate of hard rubber, or a specially constructed shoe, or both. Here also we instruct the patient to avoid toeing out. In standing and in walking he must keep the feet parallel or else toe in. As soon as the deformity is under control the patient is put on exercises.

Intractable or Advanced Cases.—In these cases the deformity is marked and the foot quite rigid. There may be considerable pain and marked disability, or the patient may have passed through the painful stage, his gait being awkward, though he is still able to get about. Here again the first indication is to reduce the deformity, break up all adhesion and overcome muscular rigidity. This is accomplished by thorough wrenching under anæsthesia. The adhesions are broken up and complete passive motions made in all directions, adduction, dorsal and plantar flexion. The arch is replaced and the foot held in position of extreme inversion. A plaster of Paris cast is applied from toes to knee, the foot being maintained in the over corrected position. This form of dressing must be kept up for at least three weeks and often for six weeks. In a few cases it has been necessary to do tenotomy of the tendo Achillis in order to obtain a fully corrected position and complete mobility. Later the patient wears an orthopædic shoe, specially constructed to support the inner side and arch of foot. It may be necessary to employ a flatfoot plate. Such a plate must be made over a plaster of Paris cast of the foot held in inversion. At this time we also institute massage, hot and cold douches, and exercises. Forcible manipulations must be kept up daily, the foot being moved to the limit in adduction, dorsal and plantar flexion. Dry hot air at 35° is of the greatest value.

We will not consider the severe types requiring

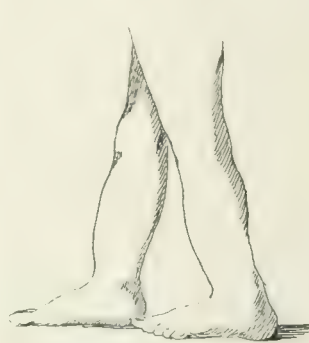


FIG. 5.—Flat foot in a case of rickets (after Tubby).

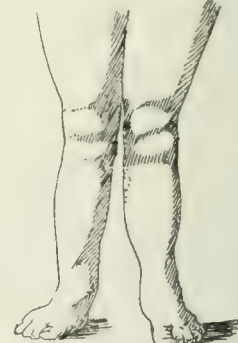


FIG. 6.—Knock knee following flat foot in the young.

some one of the open operations to effect a cure. Mention must be made of the pronated foot in the child (see Fig. 6). Cases of flatfoot or the markedly pronated foot may be accompanied by knockknee, specially in the growing child, but this condition is usually secondary. All cases of knockknee occurring during early childhood should be investigated most carefully. In many of these cases the primary determining cause is a flatfoot, a condition easily overlooked.

The Pronated Foot Following Potts' Fracture.—

All Potts' fractures should be treated with foot in inverted position. This rule is so often not observed that we frequently meet with this condition of weak, painful, pronated foot following a Potts' fracture. Not only is the tread imperfect, due to displacement of the proper weight bearing line, but the disability is often considerable. Pain is usually present, being most marked below the external malleolus, where it often presses on the os calcis. Here we attempt to throw the foot in by manipulation, maintaining the position by the use of the orthopædic shoe, so constructed as to support the inner side of foot. Strapping the foot and ankle while in the inverted position is often of value. The use of the hot air oven up to 350° is of value in these cases. The type of deformity is shown in Fig. 3.

Fracture of the Base of Fifth Metatarsal Bone.—This condition was brought to the attention of the medical world by Robert Jones of Liverpool, and his article must be considered a notable contribution to the subject under consideration. (*Annals of Surgery*, January, 1902.) This fracture occurring through indirect violence and without displacement, has been mistaken for sprain. It has been known to occur while running or jumping, or while making a sudden violent move, or in dancing. There are no displacements, as the fragments are held firmly by ligaments, but with this history of indirect violence, we have this localized, well marked pain over the site of fracture. This condition requires fixation, either plaster of Paris, or firm strapping, with mole skin and the starch bandage.

Hallux Valgus, an outward displacement of the greater toe, is almost always the result of wearing narrow or pointed shoes. It may follow where the shoes worn are short. In long standing cases the deformity may be extreme, the toe will be displaced outwards, accompanied by the formation of an exostasis on inner aspect of the first metatarsal, usually surmounted by a bunion. The severe cases require operative interference, a cuneiform osteotomy removing the exostasis. The milder cases are treated with proper shoes, permitting free play to the great toe, and stockings which do not constrict. Passive motion to induce a normal range of motion is of value.

Hammer Toe, the result of short shoes, usually affecting the second toe, consists essentially in dorsiflexion of proximal phalanx and plantar flexion of second phalanx. In time the lower zone of lateral ligaments becomes contracted as well as the plantar plate. Section of these ligaments with manipulation will suffice in many cases to effect a cure. In some cases a more radical measure, resection of the elevated joint should be done.

Painful Heel.—Heel trauma is especially common in those who walk our city streets. Sometimes it follows a slight jar or misstep, as in alighting suddenly from a trolley car. Painful heel may be due to a bursa, deep seated, or to a periostitis at plantar aspect of os calcis. Rubber heels should be worn. If the painful heel is secondary to achillodynia or a weakened arch, the shoe should be supported on the inner side to hold the arch and correct the tread.

Metatarsalgia or Morton's Disease.—This condition, a sinking of the anterior or transverse arch, is often the result of weakness. We have frequently enough the history of standing with improper

shoes. In some cases the shoes worn have been proper, and yet this condition has developed. The disability is often considerable and the pain severe. The pain is located at the proximity of the fourth metatarsal phalangeal joint. The pain is due to pressure and displacement of the arch. This condition requires support and strapping, later employing a shoe so constructed as to support the anterior arch.

The various neuralgias and forms of osteoarthritis are due in many cases to exposure to cold, wet feet, poor circulation, and often gouty conditions. In these cases attention to circulation, proper clothing, combined with the administration of rhubarb and soda with sodium salicylate, are of value.

The principles of treatment are based on a study of the physiological functions of the foot and its anatomy. Where possible, deformity must be corrected. Other steps are introduced later, but first of all we must undertake an early and complete rectification of any existing deformity, provided such reduction can be accomplished. We also attempt to restore a full range of motion, by making systematic manipulations. Then we place our patient on proper foot wear, and instruct the patient how to stand and how to walk. We employ exercises which develop weakened muscles, and elevate and strengthen the



FIG. 7. a, position of foot with high-heeled shoe; b, low-heeled shoe.

arch. Raising the body up and then down on the toes, the feet slightly turned in, is a valuable exercise. Brisk walking with the feet parallel must also be carried out. An important factor in the treatment is the kind of shoe to be worn. We are all interested in just what is a proper shoe. There are some people so constructed that they can not or will not wear proper shoes. Making allowances for mental weakness, feminine vanity, and ignorance, we still have with us a major portion of the community, who will wear proper shoes if we emphasize their importance, and they are easily procured. A proper walking shoe is preferably a lace shoe, built straight on its inner edge, slight extension sole, fitting well about instep and ankle, and so built forward as to give free play to all the toes, and sufficiently broad as to permit the forward part of foot to expand in walking. The heel must be of good width, and low, the sole quite flat. A high-heeled shoe is necessarily a dangerous shoe. Elevating as it does the posterior end of the os calcis, it favors the tilting downward of the head of the astragalus. It also prevents the heel from dropping in walking, a most necessary part of every step. It increases the strain on the anterior foot (Fig. 7).

In a consideration of painful and weak conditions of the foot we must consider not only proper foot wear, and the cure by exercise, but we must also call attention to the proper way to walk, and the proper position to assume in standing. Standing with toes pointing outward is a position of weakness, while with toes pointing slightly inward is the position of strength. With the toes outward, the arch is lowered and the forward part of foot tends to assume the position of a splay foot. With the toes turned in, the arch is elevated, and all the structures are more securely held. This of course is easy of demonstration by anyone who will assume these positions with bare feet. So in standing we should not keep a position with toes turned outward for long, but at times stand with the feet parallel, or with toes turned inward. Assuming the latter position of strength not only rests the foot, but elevates and strengthens the arch.

In walking the feet should be kept parallel and at times it is well to walk with toes slightly turned in. Walking in this way, the foot is held in position of strength, the leverage is more perfect, and the weight bearing line is true. The weight bearing line should fall through the centre of the foot. Standing with the feet turned outwards the weight bearing line descends through the inner side of the foot, favoring the condition of weakness, the pronated foot. Anyone who's occupation requires long continued standing should take steps to prevent the development of the weak feet by wearing proper shoes, and by walking and standing as described. For example, a proper shoe should be just as much a part of the pupil nurse's uniform as the cap and gown.

76 WEST EIGHTY-SIXTH STREET.

THE FALLACY AND INUTILITY OF THE SO CALLED "RAPID DIAGNOSIS OF RABIES."

By N. G. KEIRLE, M. D.,

Baltimore,
Director the Pasteur Institute.

There are two methods, both expeditious, both untrustworthy; in both the diagnosis is defective in the abstract, and also as applied to the determination of the question "to be or not to be" treated. As regards the first the morbid histology of the nerve ganglia (elaborated, not originated, by von Gehuchten and Nelis), it is untrustworthy, because its absence is no proof that rabies is absent; and if it is present, the same histology is also present in other diseases, markedly in tetanus, but likewise in many infectious diseases. Even conditions of decomposition, in which state the animal is most frequently received, produce like appearances; from this cause also sections of normal ganglia, in spots, often exhibit these changes.

"In my memoirs on the pathology of the spinal ganglia, I (Babes) have described similar lesions in many diseases;" he also notes that the number of cells bordering the elements (nerve cells) "multiply themselves with facility as a result of different irritations." This last sentence indicates the essential morbid morphology, and refutes its specificity.

As regards the second, the Negri bodies, so named from their discoverer, are found especially in the hippocampus major and are alleged to be surely diagnostic of rabies, and to be found in no other

disease; but their absence is not alleged to exclude rabies. These bodies are of two varieties, one taking an eosin stain, the other a methylene blue. The former are ovoidal, clublike, or crescentic, not unlike malarial crescents. Some are large, some are small; in some the entire surface is beset with minute round masses, somewhat projecting; some are opaque white, some translucent, a few are arranged in circlets; sometimes the body contains only a few larger ones or a single one larger still; they sometimes strongly resemble cell vacuoles, so misnamed. Most of these bodies stain vividly; but some, numerous and grouped together, stain of a dull brownish red color, and their contour is irregular, as if shrunken; in shape they tend to oval or quadrilateral. There are also blue staining bodies exactly like those described; in size both are medium, between the large and small ones. Some blue cells are of large size, globular, with unstained protoplasm divided up into roundish corpuscles by a process which may be likened to segmentation. Sometimes they are traversed by irregular radial lines, like fissures.

It is not the object of this article to describe, with accurate detail, the morphology or technique of the Negri bodies; these may be found in Dr. A. Negri's essay in the *Beitrag zum Studium der Aetiologie der Tollwuth in Zeitschrift für Hygiene und Infektionskrankheiten*, xliii, 3.

It is contended that the bodies in question are protozoa, or, if not, that they are specific degenerations produced by rabies and by no other disease. This latter qualification may have had its suggestion in the fact that some in search of these organisms have erred from the truth and found only pseudoprotozoa. Why may not these bodies be the result of cloudy swelling and vacuolation, or changes of morphology taking place in decomposition, under conditions of inhibition, producing enlargement, distortion, and disfiguration of normal cell structure? These degenerations are common to many diseases and causes. The foregoing are merely hypothetical suggestions. What these bodies (Negri) may be (see Addenda) is immaterial to the fact that I have frequently found them in rabbits dead of ordinary infection, often from wounds received in fighting, which become infected from the pens in which these animals are kept. These bodies were found in a dog accidentally killed, run over by an automobile, also in another dog which died of rupture of its stomach. Rabbits subdurally inoculated from the medulla oblongata of both these dogs failed to show rabies, although the experiments were repeated in each case, on each occasion using two rabbits. The preponderance of probability is in the direction of negation of the presence of rabies.

The inhibitory condition above referred to, used in these experiments, is simply that of placing the dead body on ice for twenty-four hours, then removing the brain and keeping it on ice for twenty-four hours more, then keeping the excised hippocampus on ice for twenty-four hours.

As bearing upon treatment, these preliminary examinations fail to settle the question of "to be or not to be" treated. If the foregoing appearances are found, treatment would be advised, notwithstanding that they may be present when rabies is absent. Since they may be absent when rabies is present,

surely no one on this account would advise against treatment. In point of fact, persons bitten are going to be treated anyhow, and any delay is worse than useless.

The trend of events is about as follows: The circumstances in the case arouse suspicion of rabies, and those concerned desire to have such suspicion dispelled, in order that persons bitten may not be required to undergo treatment, or that lower animals may not become sources of danger and apprehension, making their destruction advisable. The usual phraseology is: "Doctor, we want to know whether this dog was mad or not." They really earnestly desire to know that the dog was not mad. The public erroneously think that this can and ought to be easily proved, not only "beyond a reasonable doubt," but with absolutely certain demonstration. These statements refer, of course, to the negative proposition, i. e., the proving by animal inoculation that the animal under investigation was not mad, for the reason that the inoculated animals did not acquire rabies. Sometimes an animal may not be susceptible, which is rare and can easily be corrected by using a number of animals; there may be an error of technique, which also can be avoided. The most common cause and source of most serious mistake reside in the fact that the rabietic virus has been present, but has been destroyed. A carcass lying in the intense heat and light of a summer sun may become inert; an exposure of rabietic virus to sunlight for forty hours destroys it, though the temperature may be only 86° F. The virus is very sensitive to heat and easily attenuated, weakened, even when not destroyed. Decidedly opposite is the effect of cold, I have had a cat frozen stiff, and the virus remain unaffected. "Sheltered from the air, 11° F. has no effect." Jobert preserved the body of a rabbit at 14° F. "and at — 13° F., and the bulb, nevertheless, remained virulent." Temperature of — 35° and — 60° C. attenuate, but do not destroy the virus. Decomposition does not necessarily destroy it; Galtier produced rabies from the nerve centres of a dog that had been buried forty-four days. Placing the rotten material in neutral glycerin, and renewing it until the odor has disappeared, will eliminate the organisms of putrefaction and render the specific virus fit for inoculation. The rabietic virus can be preserved in glycerin, but the glycerin must be neutral and remain so. A medulla oblongata of a rabid rabbit, immersed in glycerin in a glass stoppered phial, was brought from the Institut Pasteur, Paris. From this medulla four rabbits were, subdurally, inoculated upon the brain without effect; they simply "waxed fat and kicked." Why? Because, in making the sea voyage the glass stopper became loose and the glycerin acid. Acid or alkaline glycerin should not be used. Suppose the above mentioned medulla had been that of a dog that had bitten a number of persons severely on the head, face, and neck. If as a result of this fallacious experiment they had been assured that the dog was not mad, they might have been aroused from a false sense of security by the realization of a terrific calamity. Even though a dog or other animal should remain alive after a sickness, it is not absolutely certain that it was not rabies. An animal may die, and at the post mortem examination sufficient cause for death may be found, and yet rabies may have co-

existed. I have the heart of a dog which is packed full of the worm known as *Filaria immitis*. This dog bit a policeman, who was treated without delay. Rabbits subdurally inoculated from this dog had rabies; the policeman did not.

Negative evidence must be skeptically considered and very carefully weighed; proving a negative is often a "doubtful balance of rights and wrongs;" at its best it is a preponderance of probabilities. The only absolute certainty is the demonstrated affirmative proof afforded when inoculated animals have rabies, and another series inoculated from these also have rabies.

In institutions prophylactically treating hydrophobia (Pasteur method), two rabbits are inoculated daily, in series, which the Institut Pasteur, Paris, has been doing for about twenty-one years. During this period rabies has been given serially to about 15,330 rabbits; the Pasteur Institute, of Baltimore, has been doing the same for more than nine years, giving rabies serially to about 6,570 rabbits. Thus this disease has been propagated serially in about 21,900 rabbits. The data from all the anti-rabietic institutions are not available, but it is safe to assert that they would enormously increase the numbers given. That the disease of the nervous system termed hydrophobia (rabies) is produced by the contagion of a specific virus is supererogatively overproved by these figures.

The human animal never recovers from an attack of hydrophobia (rabies); this the lower animals sometimes, but seldom, do. Cases are recorded in which it is alleged that persons have recovered, but these cases do not bear critical scrutiny, and have not received scientific acceptance.

The treatment is by hypodermic injection, and does no harm under any circumstances, but almost without exception the general health improves.

CONCLUSIONS.

1. The presence of the ganglionic changes, described by von Gehuchten and Nelis, or the presence of the structure termed Negri bodies, is not pathognomonic of rabies (hydrophobia), since these are often found when rabies does not exist.
2. The absence of one or both of these appearances does not prove that rabies is absent, since they may be present when rabies is absent and absent when rabies is present; therefore they are not infallible indications of rabies (hydrophobia).
3. In the exigency of treatment, the results of preliminary examinations should not be waited for. When the circumstances are suspicious, when the animal has been killed or has escaped, when a person has reason to think that he has been in contact with the virus of rabies (hydrophobia), he should, as soon as he can, consult his physician, and, preferably through him, should at once communicate with some reputable institution treating this disease preventively, and abide by the advice given.

APPENDIX.

The experiments made by the writer were done throughout the month of June, 1906. On November 14, 1906, the October number of the *Annales de l'Institut Pasteur* was received. On page 859 is an article by Y. Manouélian (Travail du laboratoire de M. Metchnikoff). The title is *Récherches sur le mécanisme de la destruction des cellules nerveuses*.

This writer asserts that the destruction and disappearance of the nerve cells (cerebrospinal ganglia) in rabies are effected by phagocytosis, and that the macrophages, described by M. Metchnikoff, are the agents in breaking up and removing the nerve structure which has become useless or harmful, so rendered in this instance by the virus of rabies. These macrophages, figured in Plate XXXII by M. Manouélian, morphologically are identical with those figured by Dr. Negri, and designated as protozoa, causative of rabies (Figs. 1, 4; except 6, "parasitäre Gebilde"). M. Manouélian in his article nowhere mentions Dr. Negri or his work. So far as appears, the work of the former was done without any knowledge of the work of the latter. Both these investigators were working with rabietic material. The writer of this present article was working with nonrabietic material; yet all these investigations reveal the same morphology. Evidently these forms have no causal relation to rabies, and M. Manouélian does not so allege; on the contrary, he notes that these bodies, these cells, are the large phagocytes, macrophages, described by M. Metchnikoff as active in removing the worn out nerve tissue of the aged; the tissue which the unknown virus of rabies has vitiated these known cells remove. The bodies of Dr. Negri, mistaken for specific protozoa, are the macrophages of M. Metchnikoff, which are common carriers, and in no other sense specific morbid agents.

CITY HOSPITAL.

USE OF LIVE STEAM IN THE LOCAL TREATMENT OF INFECTION.

BY FREDRIC GRIFFITH, M. D.,
New York.

If a choice had to be made the writer stands willing to dispense with every chemical pus germ destroyer in use as local application in infected wounds, save heat. The action of coagulating albumin which hydrogen dioxide when brought in contact with a suppurating area so graphically performs before our eyes, while heat in the form of hot water of a temperature ranging from 110°F. to 140°F. brings the same about just as certainly.

Heat is rarely applied to secure the best result in cases of local infection. Take a case of felon for example, an infection which may be made to run a trifling course when seen early but if badly handled all too readily courses up the arm leaving a train of phalangeal necrosis, cellulitis of the hand, palmar abscess, suppurating axillary adenitis; loss of finger, hand, arm, general sepsis, death of the patient. That this latter outline of possible results frequently occurs a study of hospital books anywhere will bear out. Poulticing for felon as carried out under household direction is condemned by surgeons as harmful, and the rapid pus burrowing which goes on in the majority of cases so treated points to the correctness of the professional view. The writer will endeavor to show that in the main the surgeon who applies a so called "antiseptic" poultice commits similar error. Only in degree in the cleanliness of his gauze and oiled silk or rubber tissue dressing is he less at fault than the layman in the "drawing" process.

Body heat, moisture, presence of pus germs are

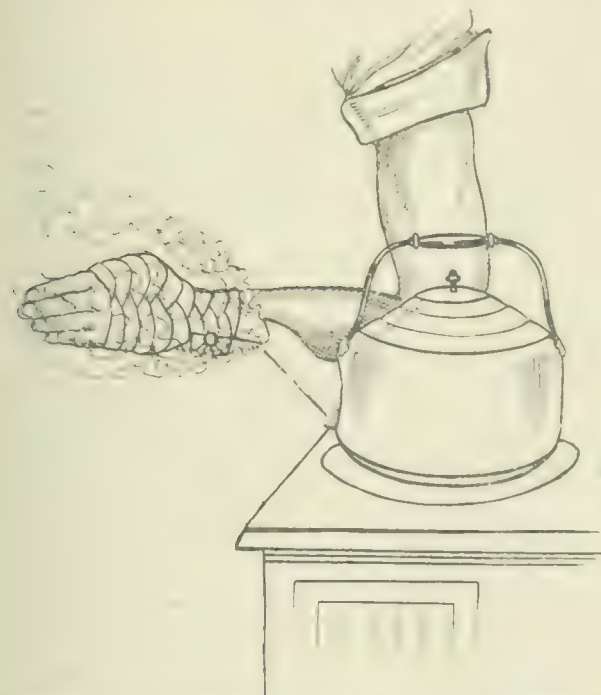
the three causative factors in the production or extension of infective processes after wound or abrasion. The germ factor being practically constant if the surgeon is to be of any use in a given case effort must be directed toward modifying the first two. As regularly applied in New York hospitals an antiseptic poultice consists of a swath of moistened sterile or antiseptic drug impregnated gauze covered by some impervious material. Some visiting surgeons will advise their house staffs and dressers to apply few layers of gauze in the makeup of the poultice, some many, all demand the outer impermeable covering to "keep the heat in." Listerism came in with a layer of macintosh in its outer garment, and verily such was needed if only to protect affected parts from the surgeon himself after the water dressing era of civil war times.

Moist heat is certainly more penetrating than dry, whether the body treated be a human finger or a bale of rags, but the moist heat supplied ordinarily by the surgeon for the combat of germ life is body temperature heat. A very short time after a gauze poultice has been applied the temperature drops to that of the part and from that moment onward until its change or removal that dressing is a menace, for it presently supplies perfectly the other two factors already spoken of as being necessary for the activity of microbic life. To be effective in these cases heat, locally applied, must be stimulant and not sedative in action. Only by the application of higher temperatures—"as hot as can be borne" is the writer's verbal direction to the patient—will one be enabled to secure the best effect. The writer's plan of action is to apply a light, fluffed gauze dressing held to the part by use of as few as possible turns of a roller bandage. If drainage openings are to be preserved a loose twist of rubber tissue is employed. Elevation of the part affected by slinging or otherwise is always insisted upon as being of as much importance as anything which can be done for the case. Frequent applications of heat by immersion of the bandaged part into the hot water as often as ten or twenty times a day in serious cases, and allowing to remain submerged for from a half to five minutes at a time. The patient always reports that he is able to gradually increase the temperature and the time of the immersions. Rapid evaporation takes place after each dip, so that if examined five or ten minutes after one of the treatments the parts will be found quite dry. In this connection the quantity of dressing used is to be carefully considered. As a rule the less the amount of covering the better for the part. Therefore all the manifold extra wrappings which the patient himself is only too prone to apply and the physician to allow in the effort to "keep the cold out" are needless, if not harmful. To every patient coming under treatment—and the writer is especially considering infection about the hands in this connection—it may be necessary to explain that cold in itself will do no special harm to an injured part but that it is simply to insure against foreign matter getting into the wound cleft, to afford some protection against injury from the outside, and to absorb discharge that a dressing is applied. The rest of the treatment includes mild and continuous or active purgation using salts or calomel, stimulation or tonic administration of the

combined elixirs of iron, quinine, and strychnine, with correction of any hygienic defect. The difference between a part treated by the soothing poultice manner and one, by the heat stimulating method is manifest even after but a few hours' trial. Observation reveals as marked a dissimilarity in the parts engaged in the germ fight as may be noted between the physical well being of a corpse and that of a glowing athlete. After the antiseptic poulticing process see the tissues involved relaxed and swollen, skin softened, soaked, wrinkled, colorless. After hot water treatment observe the parts presenting a scene of intense action, tissues red with the flush of capillary activity; inflammation demarked; skin tense, dry, and undissolved, holding its resident bacterial cataract in check up to the very margins of the wound.

It has seemed necessary to present the foregoing as preliminary to a description of the value which the writer places upon steam as a curative agent in infected wounds.

It was a resourceful artist patient suffering with



Showing live steam method applied to infected hand wound.

an infected wound after having experienced a cat bite upon the back of his brush hand who evolved the method. Desisting from institution of through and through drainage which had to be considered early in his case, the writer relied upon a plan of energetic hot water treatment such as has already been set forth. Entering the apartment upon one occasion the steaming method was found in active operation. A new, tin tea kettle, half full of bubbling water, was observed to be driving a cloud of steam from its spout under the compelling influence of a gas flame. The patient was to be seen bathing his bandaged hand in the vapor. Rapid drying, which the writer considers so essential in the treatment, occurred promptly within a few moments of time after the application. Recognizing the value of the method it was made a permanent measure in

the treatment of the case and has since proved so effective in overcoming local infecting processes that it is deemed worthy of consideration by physicians, the appliance for the manufacture of steam being in every household.

A jet of steam directed into the uterine cavity has been used as curative in certain disorders of that organ, and it seems clearly practical to the writer to employ live steam projected into the general abdominal cavity through open median incision and repeated, as a means of battling general septic peritonitis, indication of shock as well as sepsis being met by this means.

TO BE SENT TO THE EDITOR.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LIX.—How do you treat phlegmasia dolens? (Closed February 15, 1907.)

LX.—For what purposes and in what doses do you use opium in preference to any of its constituents or derivatives? (Answers due not later than March 15, 1907.)

LXI.—How do you treat Pott's fracture? (Answers due not later than April 15, 1907.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED) that the answers be short; if practicable, no one answer to contain more than six hundred words.

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of \$25 for the best essay submitted in answer to question LVIII has been awarded to Dr. George H. Palmerlee, of Detroit, whose article appears below.

PRIZE QUESTION NO. LVIII.

THE TREATMENT OF ACUTE SYNOVITIS.

By GEORGE H. PALMERLEE, M. D.,
Detroit.

In the treatment of acute synovitis, it is very important to put the affected joint at rest as carefully as possible, and keep it so; and always keep in mind the possibility of ankylosis, and that ankylosis is not the result of long continued inactivity, but of inflammation.

As a primary affection, acute synovitis is caused by traumatism, and it is often secondary to rheumatism, gout, gonorrhœa, pyæmia, and the exanthema.

A correctly applied splint which insures the most perfect immobilization is indicated; it should be well padded, either a plaster cast, laterally, or a posterior wire splint may be used. In cases of simple synovitis, all that may be required is immobilization, a well applied splint, and an ice bag for a few days. When the extreme pain and swelling has subsided, then passive motion should be practised each day,

but the use of the joint should not be attempted until its function has been restored by passive exercise.

If the swelling does not subside at the end of a week, then aspirate under strict aseptic precautions. The earlier the joint is put at rest, the shorter will be the duration of the trouble; the object of immobilizing of the joint and placing the patient as completely at rest as possible, is to lessen hyperæmia and subsequent inflammation, thereby guarding against ankylosis.

The application of pressure is of great value in reducing the swelling, by favoring the absorption of the exudate as though a roller bandage evenly applied, or by strapping with adhesive plaster; another common form of applying pressure is by the rubber bandage, and by stretching it a little as much pressure as desired can be made.

Hot local applications are sometimes more agreeable to the patient than cold, and give equally as good results. Under this head may be mentioned hot lead and opium stupes; hot water bags and poultices are very useful. Should the condition tend to become chronic, then counter irritation with iodine, blisters, and liniments are indicated.

The constitutional treatment of acute synovitis requires but little attention; keep the bowels open with fractional doses of calomel and saline cathartics, and if the temperature is high, administer diaphoretics. In rheumatic cases, give sodium salicylate in full doses, besides the local measures already spoken of.

The treatment of synovitis with dry heat is also very valuable; wrap the limb in flannel and expose it in an oven to the temperature of 300° F. to 400° F. for half an hour once a day.

The acute suppurative form is the most serious. The formation of pus in the joint is accompanied by a rise in temperature, increased pain, and swelling. As soon as the septic condition is recognized, the treatment should be prompt and vigorous; the joint should be opened and free drainage established by making at least four openings, one on each side of the patella and one above and below; irrigate thoroughly with a weak solution of bichloride, 1 to 5,000, and then with a physiological salt solution or sterile water; after flushing, apply a moist dressing. Repeat this every day until the temperature drops to 99° F. or normal. Should the temperature rise again, it indicates that there are pus pockets which are not being drained and must be opened at once. If the temperature still continues high, the joint should be freely opened and packed with gauze; Mayo recommends sawing across the patella and wiring it again when the temperature becomes normal. Ankylosis is always to be feared in severe suppurative cases, but it is of a secondary consideration, and it must be remembered that the danger of ankylosis is not in the long inactivity of the joint, but from inflammation.

Passive motion must not be instituted until the temperature becomes normal and suppuration has ceased; if begun too early, it will break up the new tissue and promote the entrance of pathogenic germs which we wish to avoid. However, if ankylosis occurs in spite of all treatment; it is well to put the limb at such an angle that will make it the most serviceable.

In treating a penetrating wound of a joint be sure that all dirt is removed; wash thoroughly about the wound with soap and water. If made by a clean cutting, sharp instrument, it is not necessary to examine the interior of the joint, but if a wound is badly lacerated it must be thoroughly cleaned with soap and water and flushed with a 1 to 4,000 bichloride solution, sutured, and a splint applied. If the temperature goes up to 101° F. or 102° F. and is accompanied by chills, the dressing must be removed, stitches taken out, and the joint drained as in cases of acute suppurative synovitis.

In the very severe cases a prompt vigorous treatment is required in order to save the patient, if not the limb; the surgical axiom, "free incision and drainage," is applicable in suppurating joints as it is to suppuration in any other part of the body, and by keeping in mind the principles of surgery involved, many serviceable joints will be saved, which might be sacrificed by a less prompt and radical treatment.

410 WASHINGTON ARCADE.

Dr. Edward Adams, of New York, writes:

The treatment of acute synovitis may be summarized in the following manner: (1) Absolute rest; (2) immobilization; (3) compression; and (4) local and constitutional treatment.

1. *Absolute Rest* should be insisted upon and the patient placed in bed and remain there until the acute symptoms have subsided. The affected joint must be put in the best possible position so as to prevent ankylosis, especially if it is the knee joint it should be slightly flexed. In order to accomplish this if necessary administer an anæsthetic to relieve pain.

2. *Immobilization* should be by splints, and it is a matter of choice whether wood, pasteboard, or plaster of Paris is to be used. Personally, I believe the Volkmann tin splint, which includes both ankle and knee joints, is to be preferred, and should be well padded with cotton before applied.

3. *Compression* should be used in the form of a firm bandage, beginning at the ankle joint and extending above the knee, for this purpose either gauze, muslin, flannel, or rubber can be used. Methodical compression is successful in allaying the inflammation and removing its products. In addition it acts as the most powerful promoter of absorption; furthermore, smooth circular compression ensures repose by preventing muscular spasm with its consequent sequelæ. I am convinced that the best compression can be obtained with a flannel bandage, and in addition directly over the affected joint a rubber bandage should be applied.

The immobilization and compression should be applied as soon as the patient is seen, for then there will be very little subsequent swelling.

4. *Local Treatment*.—Directly over the affected part an ice bag should be applied, remaining there until the acute symptoms have subsided; but if the patient cannot tolerate cold, hot applications should be used instead. Massage is indicated as soon as heat and tenderness have disappeared. The massaging of the limb will also prevent muscular atrophy. If there is a marked increase in the serous effusion or if resorption is delayed aspiration

with a trocar is indicated and the fluid withdrawn. When a seropurulent effusion is manifest by a rise of temperature with swelling and pain aspiration should also be performed and the part irrigated with a two per cent. solution of carbolic acid, followed by a flushing with a normal salt solution. If suppuration occurs free incisions should be made and drainage tubes inserted.

Constitutional Treatment.—The bowels should be kept open by a saline purge, and small doses of codeine be given for the pain. If necessary morphine should be administered hypodermically. The diet should be of a light character and easily assimilated; fluids should be restricted. If there is a rheumatic history salicylic acid or one of its derivatives are indicated.

Dr. G. J. Ellis, of Covington, Ky., remarks:

Acute synovitis may be a manifestation of constitutional disease, may be secondary to disease of contiguous structures, or may be of traumatic origin. With the first two varieties we have not to deal, as the treatment will be that of the constitutional or local conditions giving rise to them. The injury causing synovitis may vary from a slight contusion without lesion of the overlying skin to a penetrating wound of the joint.

The treatment of noninfected synovitis may be summed up in three words; rest, heat, and pressure. Rest is secured by a splint or sling in the upper extremity and by confinement to bed and splints in the lower extremity. Elevation is also of benefit in synovitis of the lower extremity. Some attention must be paid to the position in which the joint is fixed by the splint. For example, the elbow should be fixed at a little less than a right angle, the knee slightly flexed, while the ankle should be fixed with the foot at a right angle to the leg.

Heat is best applied by the dry hot air apparatus, which should be used once or twice a day, depending on the severity of the case. The affected joint, well wrapped in Turkish toweling, is placed in the hot air cylinder and as high a temperature as the patient can bear is maintained for half an hour, after which the limb is rubbed dry, bandaged, and the splint replaced. The effect of the hot air bath will be immediate relief of the pain; and in a great majority of cases a diminution of the swelling.

An even, elastic pressure should be maintained in the intervals between hot air treatments. This is best secured by completely surrounding the joint with a thick layer of cotton batting, over which a roller bandage is snugly applied. If after three days of this treatment, the swelling remains stationary or increases; the joint should be aspirated, asepsis being carefully observed. No great amount of fluid need be withdrawn, as the removal of a few drachms is often followed by rapid absorption of the remainder. After aspiration the treatment should be continued. Passive movement and massage should be employed as soon as the joint regains its normal size, and an elastic bandage should be worn for several weeks after the patient is allowed full use of the joint. Infection is not liable to occur unless there is a penetrating wound of the joint. A wound near a joint should not be probed or irrigated. It should be cleaned by sponging, foreign bodies removed if present, and sutured, leav-

ing a free opening for drainage. Antiseptic dressings should then be applied and the treatment employed as described before. Should infection occur, as evidenced by increased inflammation, œdema of the tissues surrounding the joint, flowing of seropurulent matter from a wound, should there be one, and grave constitutional symptoms, the joint should be incised and drainage secured by one or more rubber tubes passed through it. Light pressure should be applied and the limb immobilized in the best position with reference to its future utility as the condition is now a suppurative arthritis, and ankylosis is almost certain to occur. Irrigation is unnecessary and, I believe, harmful unless the last drop of irrigating fluid can be drained from the joint cavity. Internal medication is required only in the infected cases in which tonics and stimulants should be used as in other septic infections.

Dr. Henry W. Frauenthal, of New York, states:

When given as a cause for acute synovitis the history of an accident should always be taken with some reserve. It is very tempting to regard many conditions as the result of some injury, and too often patients are only too willing to refer the commencement of their symptoms to some injury, imaginary or otherwise. Before treating our acute synovitis we must determine accurately whether it is: (1) Traumatic, (2) rheumatic or gouty, or (3) infectious; (1) the traumatic may be due to direct injury or sprain of the joint; (2) the rheumatic or gouty are due to disturbance of metabolism; and (3) the infection due to a microorganism or the toxins of a microorganism; under this head comes acute synovitis of gonorrhœa, syphilis; pneumococcus, streptococcus, staphylococcus, typhoid, influenza, scarlet fever, measles, etc.

Our treatment is local and constitutional.

By local treatment we aim at: (1) The relief of pain; (2) the removal of the products of the inflammation; (3) the prevention of deformity; (4) the restoration of the joint to its natural function.

In all forms of acute synovitis we should apply a splint to give rest and fixation to the articulation. This is best accomplished by a removable plaster splint. The splint should be made long enough to hold the joint fixed and only the posterior half covered. Iodine, a fly blister, or the actual cautery, should be used immediately over the surface of the joint for counter irritant; the posterior splint should then be applied, and the joint covered with ice bags. The bandage and splint are to be removed daily for the use of the galvanic and high frequency electricity; those who are familiar with the high frequency and galvanic electricity realize how far superior it is to other means in aiding the absorption of the exudate. Later massage and passive movements are added to restore the joint to its normal contour and function.

Internally, if the pain is severe morphine should be used.

If rheumatic or gouty the alkalies, colchicum, oil of wintergreen, acetylsalicylic acid (aspirin), acetylparaamidosalol (salophen), and sodium salicylate, etc., must be added to the treatment, also careful regulation of the patient's diet.

In syphilitic synovitis the mercurial and iodides

should be used internally, and locally mercurial inunctions.

In gonorrhoeal synovitis the primary source of infection must be cured with Bier's hyperæmia applied to the joint added to the electrical treatment.

In other infectious cases the following prescription, which increases the leucocytes and the serum resistance, I have found to be of great service in many cases:

R Quinine bisulphate, gr. i;
Guaiacol carbonate, gr. ii;
Phenyl salicylate (salol), gr. i.
S. One every 3 hours.

Making the joint at 250° F. to 350° F. followed by Crede's inunctions over the surface of the joint covered with oil silk and the fixation splint applied. If the x ray shows the involvement of the joint structures then arthrectomy and washing out of the joint with antiseptic solutions should be promptly done, thus preventing ankylosis and loss of functions.

Dr. Edward A. Tracy, of Boston, observes:

The first indication in the treatment of acute synovitis is rest. "For heaven's sake, gentlemen," the elder Gross would exclaim when lecturing to his classes in surgery, "give a diseased joint rest!" To-day there is need of his emphatic advice being heeded, for treatments are advised for injured joints, which ignore the importance of rest, physicians do not advise rest, and in consequence acute cases become chronic and incurable.

I have treated many cases of chronic synovitis, which were chronic because of the lack of rest for the joint in the early acute stage of the disease. In cases of acute synovitis of joints of the lower limb, rest is easily attained by insisting upon the patient reclining for a period of from a week to a month, the time being gauged by the evidences of acute synovitis, joint tenderness, and abnormal fluid in the joint disappearing. Reclining gives the joint complete rest, because no weight is borne on the joint, and it is not in use. If the patient is one not careful in obeying orders, it is well to immobilize the joint by a splint. When a joint of the upper extremity is affected, rest for the joint is easily obtained by immobilizing with a splint. Generally ten days of complete rest is sufficient for a cure in acute synovitis of upper limb joints.

Besides rest for the joint, the essential of treatment, the patient must receive constitutional treatment. A good saline laxative is beneficial; repeated every second or third day, it hastens absorption of the extra fluid in the joint. An elastic bandage over the joint appears to hasten absorption also.

Pain in the joint is relieved by the application of a kaolin compound paste. If pain prevents sleep, an acetanilid compound of appropriate dosage will control the pain. I never find morphine needful.

In brief, a practical treatment for acute synovitis may be summed up thus: Rest for the joint till inflammation subsides; kaolin compound application for pain and congestion; an elastic bandage to hasten abnormal fluid absorption; appropriate treatment for the patient irrespective of the joint's condition; careful attention to bowels and diet being advisable.

Correspondence.

LETTER FROM LONDON.

A Royal Commission on Vivisection.—Proposed Courts of Inquiry on Deaths After Operations.

LONDON, January 19, 1907.

The royal commission which was appointed in the summer to inquire into the manner in which vivisection is carried out in this country is now at work, and has held some six or seven sittings. Both sides are fairly well represented on it, though the representation of scientific medicine might have been stronger. The antivivisectionists have been making a fuss, one faction because the commission decided to hold its sittings in private, the other because it did not include any "expert antivivisectionist" among its members. For these reasons the various factions agreed to abstain from taking any part in the proceedings. When it became clear that the commissioners intended to go on their way, undeterred by this threat, Mr. Stephen Coleridge, who is the moving spirit of the National Antivivisection Society, was fain to content himself with an offer that the evidence should be published once a month. This action has led to a fresh split between his society and the Abolitionists, and a fierce battle between them is raging in the press. For spiteful invective and malicious insinuation, the ordinary theological controversialist is nothing to the antivivisectionist, in whom the love of animals seems to destroy all charity for his fellow men. The danger of the situation lies in the constitution of the present House of Commons. The Liberal party, which is now in the ascendant, by its very nature represents all the ignorance and folly of the sovereign people. It is, moreover, afraid of its too aggressive ally, the Labor party, and has already more than once yielded to the bluster of that small but active and noisy faction. In this country Demos has no love for doctors; in matters medical it insists on exercising the national privilege, as a famous physician once put it, of "going to the devil in its own way." With a people of this temper and a government whose primary aim is to secure votes, medical science, which has no political influence, is to a large extent at the mercy of fanatics and stump orators. The "antis," foreseeing a report that will not be satisfactory to them, are doing their utmost to discount the findings of the commission. If we had a government with a solid backbone this would matter little, but during its short period of life the present administration has already shown that it is moved by its tail rather than by its head. It is not unlikely, therefore, that further restrictions may be imposed on research, which, as things are, is so hampered that, as Arthur Balfour pointed out some years ago, Great Britain has now fallen behind most other civilized nations in medical science.

A provincial physician lately tried to make a sensation by raising a cry of alarm in a popular magazine about what he calls the surgeon's power of life and death. This terrible power, he says, is placed in the hands of an inexperienced youth practically without any safeguard whatever. He operates and if the patient dies he merely fills in a form of certificate supplied by the state in which are stated the disease for which the operation was performed,

the nature of the operation "more or less explicitly expressed," and the fact of the fatal result. No inquiry, says the writer, is instituted as to whether the diagnosis on which the operation was founded was correct, which it frequently is not; as to whether the patient was in a fit state to undergo the operation with an expectation of a favorable result; as to whether the operation was skilfully performed by an experienced operator; as to whether every precaution was taken to give the patient every possible chance of a successful result; and as to whether the patient as a result of the operation had a reasonable chance of being better fitted to carry on the functions of life in consequence of the operation having been performed. The writer complains that there has arisen a class of surgeons, mostly young, often inexperienced in other safer and more rational methods of treatment, and "above all quite callous and indifferent to the true welfare of their patients, whom they look upon merely in the light of subjects to be experimented and operated upon." This is a serious charge, but fortunately it is unsupported by any solid evidence. Burke's saying that an indictment cannot be drawn against a nation is as applicable to a profession. Callous surgeons there are, no doubt, just as there are careless and ignorant physicians, but there are not enough of them to form a class, nor are they mostly to be found among the young. Doubtless here and there a surgeon may be carried by the love of art for art's sake to make the operation an end in itself rather than a means of cure. But in this country at least they are the exceptions. While insisting that the operator must be experienced, the critic fails to explain how he is to gain experience; apparently he would have the young surgeon make a self denying ordinance for himself like that of the man who vowed he would never go into the water until he could swim. The physician calls for the establishment of an authorized court of inquiry to sit in judgment on the surgeon in every case of death following an operation. He does not, however, tell us how this court is to be constituted or of what manner of men it is to be composed. Apparently he contemplates a lay tribunal, as he suggests that some modification of the existing coroner's court might serve the purpose. It is obvious that such a tribunal would be absolutely incompetent to form a judgment in cases necessarily requiring expert knowledge for the proper appreciation of the points to be decided. Nor would a court composed of grave and reverend seigniors of the profession be much more trustworthy. They would simply obstruct the progress of surgery. One of the pioneers of ovariectomy in this country was threatened by a colleague with a judicial inquiry if he lost another patient. A past president of the Royal College of Surgeons has recently stated that hundreds of operations are performed every year which are not necessary; but on the other hand, hundreds of patients are allowed to die when an operation would have saved their lives. In surgery, as in everything else, temperament plays a large part when the question of active intervention in a given case has to be decided. As the poet says, "Fools rush in where angels fear to tread," and a sanguine surgeon will invoke the *ultima ratio* of the knife where one of more cautious temper will leave things to Nature—or to the physician. On the

whole, it would not be for the good of patients that surgeons should operate, so to speak, with a rope round their necks. A happy rashness has saved many whom a Fabian policy would have allowed to die. It is matter of common knowledge that when the question of operating on King Edward was mooted, it was opposed by the oracles of surgery of whom counsel was sought, and if the King had had a less resolute surgeon than Treves, in all human probability he would not have lived to be crowned.

Therapeutical Notes.

Local Treatment of Syphilitic Ulcers of the Mouth and Throat.—The following antisyphilitic gargle is recommended (*Bulletin général de thérapeutique*, November 15, 1906):

R Hydrarg. bichlorid.	0.10 to 0.20 grammes.
Alcoholis,	2 grammes;
Tinctura myrrhæ,	100 grammes;
Decocti cinchonæ,	150 grammes;
Mel. rosæ,	45 grammes.

This is to be used as a gargle (suitably diluted), two or three times a day, in syphilitic ulceration of the mouth and pharynx.

Goître Affecting the Tongue.—Goris (*Bulletin de l'Académie de médecine de Belgique*, 1906, Nos. 9 and 10, *Le Bulletin médical*, January 19, 1907) reports a rare and interesting case of a woman, fifty years of age, who presented herself with a tumor of the tip of the tongue, the result of traumatism of the teeth during a fall in which she struck her chin. The growth was the size of a walnut, and was excised without much hæmorrhage. It had the appearance, on section, of thyroid tissue, and was recognized as an aberrant parathyreoid gland. It showed beginning cystic degeneration.

The Treatment of Some Diseases by X Rays.—Dr. J. Belot, in the *Journal de physiothérapie*, July, 1906, points out that those who believe x rays are the panacea for all and every complaint are as far from the truth as those who assert that they are entirely useless. The fact is that properly applied x rays often produce results which ordinary therapeutics pronounce impossible.

Without bringing forward anything very new, several very interesting cases of cure by x rays are related in full; and in nearly all treatment of various descriptions had been going on for some years without effect before the x rays were tried. In one case of deep epithelioma of the face of some seven years' duration all the usual remedies had failed to arrest the disease, including injections of anticancerous serum by Dr. Doyen himself. Eighty-five H. units of x rays, given from May, 1904, to December, 1905, brought about complete cure.—*Archives of the Röntgen Ray*.

Pathological Sleep.—Gudden, in *Archiv für Psychiatric und Nervenkrankheiten*, discusses the question of pathological sleep on the basis of many carefully formulated cases. He concludes that the most conspicuous sign of pathological sleep is a shifting in the return of consciousness and the capacity for action; that the development of the disturbance is often favored by the weak-

ness or the failure of definite impressions before going to sleep, which are of significance for the quick return of consciousness on awakening; that in a similar way long persistence of states of anxiety before sleeping favors its development; that the feeling of discomfort normally associated with early awakening plays a part in the thoughts and actions of those overcome with sleepiness, and that pathological sleep is often continued over a long period of time with certain complications.—Through *The Journal of Nervous and Mental Disease*.

Remarks on the Value of Radiographs as Zoological Illustrations.—In the tenth annual report of the New York Zoological Society is a paper on the above subject by the director of the aquarium, C. H. Townsend, illustrated by some very beautiful radiographs by Dr. H. G. Piffard. It is remarked that the general importance of radiography for natural history purposes has been neglected. And it is pointed out that by means of radiographs the relations of the skeletal framework to the exterior outline, and to some of the soft parts, is well shown; that the advantage of seeing bones in their natural relations and without art effect is apparent. The radiograph has the advantage of being life size and permitting exact measurement. As it can easily be reproduced, the labor and cost of making such a picture is much less than by the usual methods of skeletonizing and drawing.—*Archives of the Röntgen Ray*.

Diagnosis, with the Help of Opsonins.—That the estimation of the opsonic index might be a help in diagnosis is evident, and certain claims have been made for it. The opsonin in various fluids of the body varies to a certain extent. In tuberculous peritonitis we find that the blood serum contains more opsonin than the ascitic fluid, and the same is true in regard to the chest serum in cases of tuberculous pleurisy. It has less opsonin than the blood serum of that patient. The conclusion is, that the bacteria growing in a certain focus use up the opsonin in this fluid. Hence the fact that operation so often cures tuberculous peritonitis, owing to the fact that the old serum or ascitic fluid low in opsonic power is drawn off and a new fluid richer in opsonin is poured out. By these means some rather remarkable diagnoses have been made. We therefore have an aid to diagnosis in the estimation of the opsonic index.—*The Physician and Surgeon*, December, 1906.

Persistence of Bacilli in the Throats of Convalescent Diphtheria Patients.—Meikle, in the *Edinburgh Medical Journal* for December, 1906, states that for the morphological diagnosis of diphtheria, Neisser's stain gives the best results. The polar stained or beaded rod is the rod nearly always found in blood serum after eighteen hours' growth. As bacilli disappear from the throat, the long form C is usually replaced by the short D form. Hofmann's bacillus is found in all variety of cases and at different times, but is more frequent during convalescence. In cases with staphylococci present, the diphtheria bacilli persisted longest. When streptococci appears early, diphtheria bacilli usually disappears quickly.

Streptococci are found in nearly every case after diphtheria bacilli have disappeared. Thorough and continued local antiseptic treatment diminishes the virulence of the bacilli.

Snake Venoms and Antivenines.—Madsen and Noguchi, of the Statens Serum Institute of Copenhagen, have made experiments with venoms of the cobra (*Naja tripudians*), of *Crotalus adamanteus*, and of *Ancistrodon piscivorus*. They state that a specific antivenine against crotalus venom can be prepared by the immunization of goats. A specific antivenine against water moccasin venom can be produced by the immunization of goats with this venom, modified by hydrochloric acid. Immunization with the unmodified venom is very difficult. The toxicity of crotalus venom is diminished more than fifty per cent. by passage through a Chamberland filter. There is a simple relation between the toxicity and the body weight for guinea pigs weighing from 250 to 500 grammes. Smaller guinea pigs (125 grammes) are comparatively less resistant. The toxicity is smaller by subcutaneous than by intraperitoneal injection (guinea pigs), or by intravenous injection (rabbits). White rats are very resistant. The toxicity of cobra venom is not measurably diminished by filtration through a Chamberland filter. The relation between the amount of venom and the corresponding time of death is very regular. Lecithin does not increase the toxicity.—*The Journal of Experimental Medicine*.

Acne of the Chin.—In treatment of acne of the lower portion of the face, it is taught by Pautrier (*Le Bulletin médical*, and *Bulletin général de thérapeutique*, November 16, 1906) that general and local measures are required. The attention should first be directed to relieving disorders of the uterus or its annexa if present, as a cure cannot be obtained until the predisposing genital cause has disappeared. Local treatment should be rather energetic. Large pustules should be opened and evacuated if there should be much induration; they may be opened with the galvanocautery point. He prescribes:

R Precipitated sulphur, 2 grammes;
Salicylic acid, 0.50 grammes;
Resorcin, 1 gramme;
Pure petrolatum, 30 grammes.

Apply at night and remove in the morning.

The following ointment is also used for short periods:

R Camphor, 5 grammes;
Resorcin, 3 grammes;
Precipitated sulphur, 15 grammes;
Green soap, 7.50 grammes;
Prepared chalk, 2.50 grammes;
Pure petrolatum, 20 grammes;

At first this ointment is only allowed to remain for five or ten minutes; the time of application is gradually extended to 20, 25, or 30 minutes, if it be well borne.

To allay the inflammation caused by this, we may order:

R Wood fat,
Petrolatum,
Starch,
Zinc oxide,
..... of each 10 grammes.

Finally, radiotherapy may be utilized. The results obtained from this method are declared to be more lasting than those brought about by ointments.

Calcium Chloride as a Hæmostatic is best administered, according to Rosol (*Therapeutische Monatsschrift*, No. 12, 1906), in the following combination:

R Calcii chloridi, 5 to 10 grammes;
Aque destillatæ, 100 grammes;
Syrupi menthæ, 20 grammes.
Tablespoonful doses are given during 24 hours.

In some cases a clyster containing 5 grammes of calcium chloride with a few drops of tincture of opium is given.

Mouth Wash in Pyorrhœa Alveolaris.—The following prescriptions are given in the *Practitioner*:

R Potassii chloratis, 3ij;
Glycerini boracis, 3v;
Aq. rosæ, ad 3x.
M. Ft. Lotio.

If the patient has spongy gums, which are liable to bleed readily, the following mouth wash is recommended:

R Tinct. myrrhæ, 3ss;
Tinct. kramerizæ, 3ss;
Tinct. cinchonæ, 3ss;
Tinct. catechu, 3ss;
Eau de Cologne, 5i.

M. A large teaspoonful in a wineglass of water, to be used as a mouth wash frequently.

Burney Yeo recommends the following as an antiseptic and soothing mouth wash for adults:

R Potassii chloratis, gr. lxxx;
Extracti opii liquidi, 3ij;
Aque laurocerasii, 3i;
Decoct. hordei, ad 3viij.
M. Ft. Lotio.

Or the following:

R Acidi salicylici, gr. xxxij;
Spiriti vini rectif., 3iij;
Aq. camphoræ, ad 3viij.
M. Ft. Lotio.

Dissolve the acid in the spirit and then add the water.

Ætiology of Endemic Goitre.—R. Stefani, from a study of the disease in goitrous localities and from physiological experiments upon dogs, has come to the conclusion that this disease is produced by impurities in the drinking water, originally due to drainage coming from stables. The disease therefore is the result of a slow chronic intoxication by products of putrefaction. The favoring conditions are bad drainage and the slight thickness of the soil through which the water filters, and the impermeability of the deeper layers. Overcrowding of population, and meteorological, geological, and economic conditions also favor the action of the exciting cause of goitre. The toxic agent is found in the infected water, and acts either by neutralizing, through chemical action, certain salts contained in the water which are necessary to nutrition, or by exerting a toxic effect directly upon the thyroid gland, which leads to hypertrophy and hyperactivity. Certain facts of heredity and idiosyncrasy may explain the occurrence in the individual goitrous patients of myx-

œdema, cretinism, deafmutism, deafness, etc. (*Bulletin de l'Association des médecins, otite chronique du naso; Revue hebdomadaire de laryngologie, d'otologie et de rhinologie*, January 12th).

Treatment of Painful Crises During Mucomembranous Enterocolitis.—Albert Robin, in a clinical lecture (*Bulletin général de thérapeutique*, January 15, 1907) upon the treatment of membranous enterocolitis, formulated the following treatment for the painful crises, which occur from time to time: The sick person should be provided with certain "saturation" powders, and should always take them with him. At the first symptom of pain he should take one, and in this way may frequently be able to avert the attack. In order to neutralize the excessive acidity of the gastric juice, which is always present in the early stage of the disease, and to promote the intestinal secretions and overcome constipation, he orders:

R Sodium bicarbonate, 10 grammes;
Sodium sulphate, 3 grammes;
Sodium phosphate, 3 grammes.

This may be dissolved in two pints of boiling water and taken in wineglassful doses (100 grammes) before breakfast; between 10 and 11 o'clock in the morning; between 5 and 6 o'clock in the evening; and again between 9.30 and 10.30 p. m. A similar alkaline combination may be made in powders of corresponding dosage, with one sixth of a grain of codeine added if there is much pain. If the alkaline powders are unsuccessful in preventing the crises, he advises refusal to give either morphine or bromides on account of the dangers of their abuse, and substitutes the following potion:

R Menthol, 0.10 gramme;
Alcohol, a. s. ad solut.;
Ext. cannabis ind., 0.03 to 0.05 gramme;
Ext. hyoscyami, 0.03 to 0.05 gramme;
Ext. belladonnæ foliorum, 0.03 to 0.05 gramme;
Syrupis acacie, 150 c.c.

M.

A tablespoonful is to be taken every hour until the pains cease, or until four doses are used. A hot compress may be applied to the abdomen, consisting of a square of flannel moistened with the following:

R Ol. hyoscyami comp. (*Baume tranquille*), 40 grammes;
Ext. opii,
Ext. belladonnæ fol., 3ā 2 grammes;
Ext. hyoscyami,
Chloroformi, 10 grammes;
M. F. Liniment.

Great attention must be given to hygiene and diet, and the patient may be nourished exclusively with milk with great advantage. Where there are associated pathological conditions, such as a floating kidney or visceroptosis of any kind, a suitable abdominal bandage should be worn. The underlying neurasthenic factor may be treated by a daily hypodermic injection of sodium glycerophosphate (gr. v) in neutral solution for a period of twenty to twenty-five days. A change of climate, and especially a resort to mineral springs, according to the conditions present in the case, are often beneficial. The patient should finish the cure by a visit to higher altitudes after a course of the waters, because they establish and make permanent the results obtained by the former treatment.

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THE PRELIMINARY COMMUNICATION.

Credit for priority in the propounding of a theory or in making any other advance is perhaps not a thing to be striven for at all hazards, but, as men and women are now constituted, it is something that most of us would prize highly. It is often forfeited, or at least obscured, by tardiness in publication. Much fruitless wrangling might be avoided by an early announcement. Of course we do not advise that a man should rush into print on the first conception of an idea; rather he should wait until he has something substantial or at least plausible to tell. To proclaim a thing prematurely often leads to ultimate humiliation, but it is wise to avoid the other extreme. O'Dwyer with his intubation and Murphy with his button are shining examples of those who have managed the matter in just the right way; the reader will readily call to mind others who have mismanaged it.

There are some highly scientific persons who must needs spend months in working out the details of a course of investigation, and then disdain to publish the account in anything less ponderous and more generally accessible than a quarterly, a government report, or a volume of transactions. To be sure, such publications are the proper vehicle of the full ultimate statement, and its purport is generally spread before the profession at some time or another. In the mean time the idea may have occurred to somebody else, and he may have obtained the chief credit by priority of publication. It seems to us that investigators might often suit their own

purposes, and at the same time not hamper the progress of science, by publishing an outline of a research in the form of a preliminary communication, announcing it as such, in a journal frequently issued.

It is not, indeed, the author's own interests alone that would thus be promoted, for, the attention of others having been directed to the subject, many would immediately go to work on it, and the attainment of truth would be accelerated. If the original idea was erroneous, its fallaciousness would the sooner be proved, to the great saving of time. If, on the other hand, it was supported by the work of independent observers, its correlations would the earlier be arrived at. Either of these results would surely be welcomed by any sincere thinker. Of course we cannot commend him who announces a thing in vague terms and proclaims as an excuse his fear that an indiscriminate resort to some therapeutical measure hinted at may serve only to bring it into discredit. We do not say that every man who does this is to be blamed, but our decided impression is that such a procedure is almost always to be avoided.

THE TREATMENT OF CHRONIC HEART DISEASE.

The majority of American physicians are more or less acquainted with the method of treating chronic diseases of the heart with baths and resisted exercises as elaborated by the brothers Schott, of Bad Nauheim, Germany, but some of the details are not generally known. Dr. Theodor Schott described his methods in a lecture at the College of Physicians of Philadelphia on the evening of February 6th. He began by reference to the drugs employed. He gave first place to digitalis, but spoke highly of the advantages of strophanthus as an adjuvant to digitalis or as a substitute for it when its action failed. Strychnine, the nitrites, and the salts of mercury, particularly calomel, were referred to as being valuable remedies for well known conditions. Morphine, he said, should always be used with caution in heart disease.

After mentioning the Swedish method of treatment and Oertel's by mountain climbing and dry diet, he described the method known as the Schott treatment. The baths act through the sensory nerves on the heart muscle and on the peripheral vessels, serving to stimulate the former and thereby, together with the dilatation of the latter, divert the blood from the internal organs to the muscles and the skin. Furthermore, the increased amount of blood sent to the heart muscle and the increased amount of oxygen carried by it are promotive of the improvement that follows the treatment. One most important element in the success of the treat-

ment is the constant watch kept on the individual by the physician in charge. The great difficulty in using artificial Nauheim baths is that it is not easy to obtain the proper graduation of all the ingredients of the baths. If this requirement can be fulfilled, artificial baths are capable of doing great good.

The resistance exercises act on the circulation through the motor nerves. The patient first performs the motions against a slight amount of resistance applied by the attendant; gradually he is able to dispense with the attendant and furnish his own resistance; and finally, when he is well on the road to recovery, he may indulge in mountain climbing. During the continuance of the treatment the patient should take a mixed diet which is easily digested. He should take no stimulants and little fluid, because large quantities of fluid would tend to produce a dilated stomach, which would be a source of further obstruction to an already impeded cardiac action. The use of tobacco should be discarded or restricted.

THE ELMIRA REFORMATORY.

Many of our readers may recall the fuss that was made by certain newspapers in New York about fifteen years ago over what they designated Mr. Brockway's "brutal, unjust, inhuman, and cruel treatment" of the male reformatory classes sent to Elmira for reformation, should that result be possible. The State Board of Charities investigated the charges against Mr. Brockway and made a report that was not in his favor. Governor Flower seems to have had faith in Mr. Brockway from the beginning, for he appointed an unbiased commission of which a man no less eminent than Dr. Austin Flint was chairman. This committee spent months in making a careful inquiry into the alleged abuses at Elmira. Its report was in Mr. Brockway's favor. That the investigation of Dr. Flint's commission was thorough there is no doubt. After leaving the reformatory, some years ago, Mr. Brockway began the preparation of a book destined to stand as a monument to the originator of the "indeterminate sentence" in the United States. He has since been honored by the citizens of Elmira by being elected mayor, a position he holds at the present time.

The January 26th issue of *Charities and the Commons* has an article by Mr. Eugene Smith, president of the Prison Association of New York, on The Indeterminate Sentence for Crime; its Use and Abuse. In the course of this article, Mr. Smith has this to say concerning Mr. Brockway.

The essential complement of the indeterminate sentence is a prison sentence which shall yield two results: First, the reformation of the prisoners; and, second, a test or means of determining when reformation has

been attained. To do this with a system was the task assumed by Z. R. Brockway when he became superintendent of the Elmira Reformatory at its opening thirty years ago, for the prisoners sent to the reformatory were committed under the indeterminate sentence. Mr. Brockway was himself, in a large measure, the originator of both the indeterminate sentence and the reformatory; and to him was committed the responsibility of trying the most momentous experiment ever attempted in scientific penology. It is probably safe to say there was no person living so well qualified to assume this undertaking as was Mr. Brockway, by reason of his long experience and his varied natural gifts. He was a keen judge of character, he exerted a magnetic influence upon the men under his charge, he possessed executive ability of the highest order, and he had broad philosophic views regarding the treatment of crime and of criminals.

Mr. Smith adds that the methods in vogue at Elmira were "so satisfactory in their main features that they became models upon which were framed the systems of other reformatories established in several of the northern States of the Union."

Mr. Samuel Fallows, president of the board of managers of the Illinois State Reformatory, writes in the February issue of *The World To-day* an article in which he speaks of Mr. Brockway as follows: "But the Nestor of this system (referring to the indeterminate system) was Mr. Z. R. Brockway, who began the superintendency of the New York Elmira Reformatory in 1876 and continued in that responsible position for more than a quarter of a century. His thorough mastery of the principles of the new criminology, his great constructive genius, and his profound knowledge of human nature gave the opportunity of a lifetime in the conduct of that model institution."

All this is well. It shows that in the end the truth will prevail. It also brings forcibly home to us the old but true saying that "he who waits and works wins." And who in this country or in any other has worked harder to establish a really valuable new system of correction of criminals than Mr. Z. R. Brockway, of Elmira? We rejoice to see that he is coming into his own.

A DEFINITION OF THE PRACTICE OF MEDICINE.

It is impossible to read the opinion just delivered by Mr. Justice Clark, of the Appellate Division of the Supreme Court, in the case of *People against Allcutt*, without a sense of approval of the common sense view of the situation taken by the court. This was a criminal action against the defendant for a violation of Section 153 of the Public Health Law, which provides that "any person who, not being then lawfully authorized to practise medicine within this State and so registered according to law, shall

practise medicine within this State without lawful registration . . . shall be guilty of a misdemeanor."

The defendant exhibited a sign at his residence bearing the words "Dr. E. Burton Allcutt, Mechano-Neural Therapy"; he also used the term "Dr." on his stationery, on the directory of the building in which he had his office, and on his bell plates; and in conversation he said that he was "Dr. Allcutt." He received "patients" at his office and at his house and attended them at their residences; he examined them and made diagnoses; and he charged fees for his services. In all this there appears to have been very little if anything, legally speaking, to distinguish his practice from that of the regular physician. In the "treatment" of his "patients," however, he simply prescribed warm water and salt, with a modification of diet, and gave "treatments of the nerves" with his finger tips over the back, spine, neck, breast, heart, etc.

The defendant contended that because he gave no medicine he came within the rule in the case of *Smith vs. Lane*, 24 Hun. 632. This was an action brought to recover for services rendered to a patient by rubbing, kneading, and pressure. The defendant interposed the defense that the plaintiff, in rendering the services for which he sought to recover, was practising medicine without a license and therefore could not recover. Mr. Justice Daniels, in considering whether these acts constituted practising medicine, said:—

The practice of medicine is a pursuit very generally known and understood, and so also is surgery. The former includes the application and use of medicines and drugs for the purpose of curing, mitigating, or alleviating bodily disease, while the functions of the latter are limited to manual operations, usually performed by surgical instruments or appliances. . . . What he did in no just sense either constituted the practice of medicine or surgery. He neither gave nor applied drugs or medicines or used surgical instruments.

Mr. Justice Clark shows the inadequacy of this definition when he says: "To confine the definition of the words 'practise medicine' to the mere administration of drugs or the use of surgical instruments would be to eliminate the very corner stone of successful medical practice, namely, the diagnoses. It would rule out of the profession those great physicians whose work is confined to consultation, the diagnosticians, who leave to others the details of practice."

After reviewing other decisions of this State and of the sister States, Mr. Justice Clark concludes that there is ample authority for holding that the conduct of the defendant was such as to bring him within the purview of the statute prohibiting the practice of medicine without being lawfully author-

ized. The importance of this decision is manifest. Were the courts to have accepted the definition laid down in the case of *Smith vs. Lane* as ruling in this case, the gates would have been opened wide to quacks and charlatans without medical training and education to masquerade in all the habiliments of legitimate practitioners, so long as they refrained from prescribing or using drugs. It is true that the harm which an ignorant pretender can do, if permitted to practise at all, is probably reduced to the minimum when he is obliged to refrain from the use of drugs. He is still a menace, however, in that his pretended diagnosis and his negative "treatment" will be relied upon, and, being relied upon, will often beguile a patient to his death, while correct and efficient treatment timely administered would have saved him; moreover, he is a cheat and should be suppressed and now doubtless will be.

THE TERM OF THE NURSE'S INSTRUCTION.

The graduate nurses pursuing their calling in New York recently held a meeting for the purpose of considering the meditated return, on the part of the leading hospitals, from the three years' to the two years' course of training. The assembled nurses were graduates of various great hospitals, and they appointed a committee to set forth their views to the governing bodies of the hospitals. The committee includes representatives of the graduates of the Roosevelt, Mount Sinai, New York, and Bellevue hospitals, of New York, and the Johns Hopkins Hospital, of Baltimore.

The ladies of the committee have favored us with a copy of a resolution adopted at the meeting by an overwhelming majority. The resolution endorses an application to the hospital governing boards for a continuance of the present three years' course, and these, somewhat abbreviated, are the arguments presented: The nurse pupil gives her strength and intelligence to the work of the hospital, and feels it to be her just right that she shall receive there an education which will adequately and thoroughly fit her for her life work, as she is virtually promised by the hospital; either the theoretical or the practical instruction must be "scamped" in a two years' course; the service is more equally divided in a three years' course; "a general return to the two years' course would tend to the destruction of that process of affiliation between special and small hospitals for the improvement of their nursing services, which under the three years' course has been developing with the most satisfactory and beneficial results;" the greater requirements of graduate nurses at the present time call for a proportionate advance in their training; and "the three years' course benefits the hospital by its greater stability and the longer continued presence of a senior staff of nurses."

All these arguments seem to us well founded, and we wish that the governing boards of the hospitals might find it practicable to conform to them. We realize, however, that the proposed restriction of the nurses' course would not reduce it to less than the maximum of the course now accorded to the medical officers of the house staff. In each instance, we presume, the idea is that, for the greatest good of the community, it is better to provide a moderately efficient course for a large number than to perfect a few. Possibly there may be devised some means of carrying out the two purposes, both in the case of the house staff and in that of the nurses.

LEGAL RESPONSIBILITY IN THE USE OF THE X RAYS.

A decision rendered in a case in the Supreme Court of the State of New York last week is of interest as showing the tendency of the courts to acquit physicians from charges of negligence where, as is notably the case in the treatment with x rays, unforeseen untoward results occasionally occur, even if all reasonable precautions are exercised. Suit was brought against a physician to recover damages for a burn inflicted on the patient's neck and cheek in the course of treatment for tuberculous glands of the neck. The evidence showed that the defendant had exercised all the precautions known to science in the therapeutical application of the x rays. Unfortunately for the value of the case as a legal precedent, there was a conflict of evidence over the question of whether or not the patient was undergoing treatment simultaneously by two different physicians, and the charge to the jury, by Justice Brady, and the short time given by the jury to a consideration of the case indicate that the decision was probably reached because of distrust in the veracity of the plaintiff. The fact that such a suit was brought, however, shows the necessity for exercising great care in the use of x ray treatment. The fact was brought out in the evidence that, in at least one hospital, patients were required to sign a waiver of claim for damages before being subjected to x ray treatment, a proceeding which would commend itself to every careful physician.

Obituary.

SIR WILLIAM HALES HINGSTON, M. D.,
LL.D., D. C. L.,
OF MONTREAL.

Dr. Hingston, one of the best known surgeons and philanthropists in Canada, died suddenly on February 19th, in the seventy-eighth year of his age. He was educated in Montreal, where he took his medical degree at McGill University in 1851, and subsequently in Edinburgh, Paris, and Berlin.

He received the honorary degree of LL.D. and D. C. L., and was made a fellow of the Royal College of Surgeons. Dr. Hingston was successively mayor of Montreal, president of the Provincial Board of Health, and senator. He was a man of remarkable geniality, well known to the American profession.

News Items

NEW YORK CITY AND STATE.

Change of Address.—Dr. John M. Spethardt, to 7-1 East 64th Street, New York City.

The Society of Physicians of the Village of Canandaigua, N. Y.—The next meeting of this society, held on Thursday, February 14th, Dr. S. R. Wheeler read a paper entitled: *The Relation Between Physicians and Patients*.

The Syracuse Academy of Medicine.—The programme for a meeting of this academy, held on Tuesday evening, February 19th, included the following title: *Medicine and Surgery in Classic Art*, by Dr. Roswell Park, Buffalo, N. Y., illustrated with one hundred lantern slides.

Gifts to the German Hospital.—Mr. Jacob Ruppert has donated the sum of \$10,000 to this hospital, for the erection of a building for contagious diseases, and Mr. George Ehret has given \$5,000 for the purchase of a site for an additional ward to the hospital.

The Woman's Hospital Society of New York City.—A meeting of this society will be held at the residence of Dr. James A. Weeks, 71 West Forty-ninth Street, on Tuesday evening, February 26th, at 8.30. The paper of the evening will be read by Dr. Edward W. Pinkham, subject: *Backward Displacements of the Uterus*.

The Rochester Academy of Medicine.—At a meeting of the *Section in Obstetrics, Gynecology, and Pædiatrics*, of this academy, held on Wednesday, February 20th, the following programme was presented: *Acute Pancreatitis*, and *Recent Advances in Pathology of the Pancreas*, by Dr. Herbert U. Williams, Professor of Pathology in the University of Buffalo.

Generous Gift to the Fund of Beth Israel Hospital.—At a dinner given on February 6th, at the Tuxedo, by the directors and the medical staff of Beth Israel Hospital, in honor of its president, Joseph H. Cohen, \$21,000 was contributed by guests toward the hospital fund. The donors were Mrs. Joseph H. Cohen, \$5,000; Mrs. Meyer Vessell, \$5,000; Mrs. Joseph S. Marcus, \$5,000; Harris Cohen, \$2,000; Simon Weinstein, \$1,000; Louis Rosenberg, \$1,000; Mrs. I. Saperstein, \$500; Dr. and Mrs. A. E. Isaacs, \$500; and the directors and medical staff, \$1,000. At least \$20,000 more, it is expected, will be raised for the hospital by the Purim Ball in Madison Square Garden on March 15th.

Public Lectures on Problems of Insanity.—Dr. Allan McLane Hamilton will deliver the fourth of the series of lectures on the above named topic, arranged for by the Psychiatric Society, at the Academy of Medicine, 17 West Forty-third Street, on Saturday, March 2nd at 8.30 p. m. The subject will be: *The Development of the Legal Regulations Concerning the Insane, With Suggestions for Reforms*. The aim of these lectures is to place before the profession and leaders of sociological work the facts with regard to insanity, which point to the possibility and duty of initiating some broad movement, with a view to preventive measures.

The New York Academy of Medicine.—The following programme was arranged for a meeting of this academy, held on Thursday evening, February 21st, under the auspices of the *Section in Medicine: Symposium on Typhoid Fever: Metabolism in Typhoid Fever*, by Dr. James Ewing; discussion; *The Management of the Intestinal Tract in Typhoid Fever*, by Dr. Walter B. James; discussion by Dr. G. L. Peabody, Dr. W. G. Thompson, and Dr. S. W. Lambert; *The Treatment of the Typhoid Spine*, by Dr. Virgil P. Gibney; discussion by Dr. Newton M. Shaffer, Dr. T. Halsted Myers, and Dr. Leonard W. Ely.

The following order was presented at a meeting of the *Section in Orthopaedic Surgery*, held on Friday evening, February 15th: *Congenital Torticollis, with Supernumerary Ribs; Torticollis Following Operations on Mastoid; Torticollis From Tuberculosis of the Second Cervical Vertebra; Cervical Spondylitis with Marked Bone Destruction Oc-*

curring in an Adult, by Dr. Reginald H. Sayre; Partial Subluxation of the Axis, from Rheumatic Arthritis; Case of Fracture of the Cervical Vertebra by Dr. T. Halsted Myers; Case of Irritable Spine, by Dr. Dexter D. Ashley; Congenital Torticollis with Enlarged Thyreoid, by Dr. Charles H. Jaeger; discussion of cases; Paper: Torticollis, Its Different Varieties and Causes, By Dr. Reginald H. Sayre; general discussion.

The Section in *Ophthalmology* had the following order at a meeting held on Monday evening, February 18th: Presentation of Cases: A Case of Paralysis of the Sphincter of the Iris from Contre-coup, by Dr. E. B. Coburn; Symposium on Cataract Extraction. Papers (a) The Preparation of the Patient; (b) Aseptic Precautions, by Dr. E. S. Thomson; discussion.

The Section in *Genitourinary Diseases* presented the following programme at a meeting held on Wednesday evening, February 20th: Report of Cases: (a) Two Cases of Large Rough Mulberry Calculi Associated with Few or No Subjective Symptoms, by Dr. Eugene Fuller; (b) Calculus Anuria Following Five Years After Nephrectomy, by Dr. Joseph Wiener; (c) Acute Hemorrhagic Cystitis in a Child, by Dr. James Pedersen; Papers: (a) Hypernephroma, Its Clinical Course, Diagnosis, and Treatment (Specimens), by Dr. A. A. Berg; (b) A Study of Shreds in the Urine in Their Relation to Diagnosis and Prognosis, With Stereopticon Views, by Dr. De Santos Saxe.

The Section in *Laryngology and Rhinology* will hold a meeting on Wednesday evening, February 27th, with the following order: Presentation of Cases: (a) A Case of Nasal Syphilis. Rhinoplastic Operation, by Dr. L. M. Hurd; (b) A Case of Fibroid Tumor of the Laryngopharynx; Removed by Subhyoid Pharyngotomy, by Dr. W. F. Chappell; Papers: (a) Congenital Occlusion of the Choanæ, with Report of Two Cases, by Dr. John E. MacKenty; discussion; (b) The Relation of the Dental Arches to Pathological Affections of the Nasopharynx and Adjacent Parts, by Dr. E. A. Bogue; discussion by Dr. H. L. Swain, New Haven; Dr. George H. Wright and Dr. H. P. Mosher, of Boston; Dr. R. C. Newton, Montclair; Dr. C. G. Kerley, Dr. J. L. Young, and others; Exhibitions of Specimens and New Instruments; Executive Session. (Owing to the length of the papers the meeting will be called promptly at 8.15).

The Section in *Obstetrics and Gynecology* will hold a meeting on Thursday evening, February 28th, with the following programme: Presentation of Specimens Illustrating the Relations of Pregnancy to Fibroids; (a) Rapid Growth; Abortion; Hysterectomy, by Dr. W. E. Studdiford; (b) Myomectomy; Continuation of Pregnancy, by Dr. F. A. Dorman; Papers: (a) Some Causes of Failure in Plastic Operations, by Dr. S. M. Brickner; discussion by Dr. Wells, Dr. Vineberg, Dr. Brettauer, Dr. Broun, Dr. Child, and others; (b) The Diagnosis of Early Pregnancy, by Dr. L. J. Ledinski; general discussion.

The Section in *Surgery* will hold a meeting on Friday evening, March 1st, with order as follows: Paper: The Adequacy of Local Anæsthesia in Inguinal Hernia Operations, by Dr. John A. Bodine; Fractures of the Upper End of the Radius—Some Personal Experiences, Together With Radiographs and Plates, by Dr. Carter S. Cole.

Society Meetings for the Coming Week:

MONDAY, February 25th.—Medical Society of the County of New York.

TUESDAY, February 26th.—New York Dermatological Society; Buffalo Academy of Medicine (Section in Obstetrics and Gynecology).

WEDNESDAY, February 27th.—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society.

THURSDAY, February 28th.—New York Academy of Medicine (Section in Obstetrics and Gynecology); Hospital Graduates' Club, New York; Brooklyn Society for Neurology.

FRIDAY, March 1st.—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynecological Society, Brooklyn.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending February 16,

	February 16.		February 9.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	42	12	61	7
Smallpox.....	2	..	2	..
Varicella.....	91	..	92	..
Measles.....	248	6	195	5
Scarlet fever.....	263	21	261	12
Whooping cough.....	52	6	65	5
Diphtheria.....	282	52	314	57
Tuberculosis pulmonalis.....	356	191	350	208
Cerebrospinal meningitis.....	13	13	10	16
Totals.....	1,349	301	1,350	310

PHILADELPHIA AND THE MIDDLE STATES.

The Clinical Society of the Elizabeth, N. J., General Hospital.—The programme for a meeting of this society, held at the hospital on Tuesday evening, February 19th, included a paper by Dr. F. P. Gilpin, entitled Points of Interest in the Diagnosis and Treatment of Special Fractures.

Annual Convention of the Phi Rho Sigma Fraternity.—The annual convention of the Phi Rho Sigma Medical Fraternity was held at the Bellevue-Stratford Hotel, Philadelphia, on February 7th, 8th, and 9th. Twenty chapters were represented at the convention, of which Dr. Joseph McFarland was the president. On the evening of the 9th the annual banquet was held.

The Berks County (Pa.) Medical Society.—At the February meeting of this society, Dr. H. Lefever read a paper on the Etiology, Pathology, and Treatment of Puerperal Eclampsia. The society passed resolutions in favor of the One Board medical bill and against any change in the laws regulating vaccination. It was also voted to favor the bill asking for an appropriation for the purchase of a site for and the erecting of a State Hospital for inebriates.

The Death of Mr. William Lentz, of the surgical instrument house of Charles Lentz & Sons, Philadelphia, occurred suddenly on February 18th, in the fiftieth year of his age. Mr. Lentz was president of the American Surgical Trade Association at its June, 1906, meeting at Philadelphia. He was also vice-president and treasurer of the Arthur H. Thomas Laboratory Supply Company.

Charitable Bequests.—By the will of Barbara Ubmeier the Mary J. Drexel Home, the Society for the Prevention of Cruelty to Children, the German Lutheran Orphans' Home, the Jefferson Medical College Hospital, and the Hospital of the University of Pennsylvania will receive \$300 each. The State Hospital for the Insane at Norristown and the Samaritan Home will receive \$200 each. By the will of Hugh D. McLean the Masonic Home and the Presbyterian Home for the Aged, at Bala, Pa., receive \$5,000 each.

Scientific Society Meetings in Philadelphia for the Week Ending March 1, 1907.—Monday, February 25th, Mineralogical and Geological Section, Academy of Natural Sciences; Society of Normal and Pathological Physiology, University of Pennsylvania; Wills Hospital Ophthalmic Society. Tuesday, February 26th, Philadelphia Neurological Society. Wednesday, February 27th, Philadelphia County Medical Society. Thursday, February 28th, Pathological Society. Entomological Section, Academy of Natural Sciences; Section Meeting, Franklin Institute. Friday, March 1st, American Philosophical Society; Philadelphia County Medical Society.

Philadelphia Pathological Society.—At the regular semi-monthly meeting of this society, held on Thursday, February 14th, Dr. John Speese exhibited card specimens of primary carcinoma of the thyroid gland; Dr. W. W. Cadbury, of hydatiform mole; Dr. R. N. Willson, of aortic aneurysm in early life; Dr. B. M. Anspatch and Dr. H. R. Alburger, of chorioepithelioma of the uterus; Dr. M. P. Ravenel, coccidiosis in rabbits; and Dr. L. N. Boston, filaria, family Mermithidae, recovered from apples. Dr. E. G. Conklin, professor of biology in the University of Pennsylvania, spoke, by invitation, on The Cellular Basis of Inheritance. The discussion of his address, which was illustrated by lantern slides, was opened by Dr. E. A. Spitzka. Dr. W. G. Spiller read a paper on Gliomatosis of the Pia.

The Philadelphia Branch of the American Pharmaceutical Association.—The next meeting of this society will be held on the evening of Tuesday, March 5, 1907, in the lower hall of the College of Physicians, and will be devoted to a discussion of the indiscriminate renewal of physicians' prescriptions. The discussion will be opened by Dr. A. O. J. Kelly, The Repeating of the Prescriptions from a

Physician's Point of View; Dr. E. H. Siter, Some Objections to the Repeating of Prescriptions for Genitourinary Diseases; Franklin Apple, Ph. G., An Efficient Method for Preventing the Renewal of Prescriptions. This subject is one that involves ethical as well as commercial considerations, so that a free and full discussion should be of advantage to the public at large, as well as to the physicians and pharmacists.

Philadelphia Pædiatric Society.—At the regular monthly meeting of this society, held on Tuesday evening, February 12th, Dr. F. C. Knowles showed several cases illustrating skin diseases in children. Dr. Eleanor C. Jones showed a child with spina bifida of the syringomyelocele variety. Dr. J. H. McKee showed several cases of Mongolian idiocy. Dr. C. A. E. Codman and Dr. J. H. Jopson reported a case of imperforate anus in which the rectum terminated in the bladder. Dr. A. H. Davisson read a clinical note on Temporary Aphasia in Typhoid Fever. Dr. C. A. Fife read a paper entitled Buttermilk Feeding, with report of cases. Dr. H. C. Carpenter reported on Some Infants Fed Upon Buttermilk. Dr. C. F. Judson reported the results of cases fed upon buttermilk.

Philadelphia Personals.—Dr. Josiah C. McCracken left Philadelphia on the evening of February 8th, en route for Canton, China, where he will take charge, in conjunction with Dr. Andrew Woods, of the medical work of the University of Pennsylvania in that city.

Dr. Howard Ivins, of Trenton, N. J.; Dr. William E. Wright, of Harrisburg, Pa.; Dr. Herbert F. Gross, of Harrisburg; and Dr. Oliver H. Fretz, of Quakertown, Pa., are registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

Dr. J. William White returned from Europe on Monday, February 11th, after a prolonged vacation, following his operation for stricture of the bowel. He was warmly received by the students of the Medical Department of the University of Pennsylvania, who gave a reception in his honor in the gymnasium, on the evening of the 12th.

Section in General Medicine, College of Physicians.—At the regular monthly meeting of this section of the College of Physicians of Philadelphia, held on Monday evening, February 11th, Dr. S. Solis-Cohen exhibited a patient with *streptothricosis pulmonum* resembling phthisis and terminating in apparent recovery. Dr. James M. Anders exhibited a patient with a large aneurysm of the thoracic aorta treated by wiring. Dr. Augustus A. Eshner reported a case of multiple aneurysm of the thoracic aorta. Dr. William B. Stanton reported a case of pulsating empyema and three cases of pulsating pyopneumothorax. Dr. H. R. M. Landis read a paper entitled A Study of the Autopsy Findings in Twenty-nine Cases of Miliary Tuberculosis. Dr. G. Canby Robinson read a paper entitled A Study of the Findings in the Cerebrospinal Fluid in Tuberculous Meningitis. The following officers were elected at the January meeting for the ensuing year: Chairman, Dr. A. O. J. Kelly; clerk, Dr. George W. Norris.

Philadelphia Academy of Surgery.—At the regular meeting of the Philadelphia Academy of Surgery, held on Monday evening, February 4th, Dr. Charles F. Nassau exhibited a patient operated upon for interlobular abscess of the lung and reported on a case of rupture of the kidney and liver due to kick by a horse, with exhibition of a specimen. Dr. John B. Roberts exhibited a patient showing plastic reconstruction of the eyebrow and upper eyelid from the tissues of the scalp. Dr. W. W. Keen read a paper entitled A Case of Severe Burn at Seven Months of Age, Followed by Necrosis of the Entire Top of the Head; Recovery; At Fourteen Years of Age Detachment of the Entire Calvarium by Circular Craniotomy for Epilepsy and Defective Mental Development; Slight Improvement. Dr. John H. Gibbon exhibited a case of excision of endothelioma of the palate and a case of excision of the cæcum and portion of the ileum for tuberculosis, with two subsequent intestinal anastomoses.

The Health of Philadelphia.—During the week ending February 9, 1907, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Typhoid fever.....	332	41
Scarlet fever.....	39	1
Chickenpox.....	39	0
Diphtheria.....	26	17
Cerebrospinal meningitis.....	3	0
Measles.....	26	3

Whooping cough.....	16	4
Tuberculosis of the lungs.....	138	62
Pneumonia.....	56	67
Laryngitis.....	1	1
Puerperal fever.....	1	1
Septicæmia.....	1	1
Mumps.....	14	0
Cancer.....	20	29
Tetanus.....	2	1

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 14; diarrhoea and enteritis, under two years of age, 14; dysentery, 1. The total deaths numbered 595, in an estimated population of 1,500,595, corresponding to an annual death rate of 20.62 in a thousand population. The total infant mortality was 96; under one year of age, 80; between one and two years of age, 16. There were 38 still births, 20 males and 18 females. The weather was the coldest of the winter, the thermometer reaching +12 degrees on the 7th. There was a heavy fall of snow on several days during the week, the total precipitation amounting to 1.45 inches.

BALTIMORE AND THE SOUTH

The Church Hill Medical Society, Richmond, Va.—The programme for a meeting of this society, held on February 7th, included a paper entitled: How Best to Attain Nasal Cleanliness, by Dr. D. A. Kuyk, and papers on Pneumonia by Dr. E. H. Terrell and Dr. W. R. Jones.

The Morgan County, Alabama, Medical Society.—At a meeting of this society, held at Decatur, on February 9th, officers were elected as follows: President, Dr. A. R. Wilson, of Hartsells; vice-president, Dr. B. W. Watson, of New Decatur; secretary-treasurer, Dr. J. L. Gunter, of New Decatur; health officer, Dr. S. L. Rountree, of Hartsells.

CHICAGO AND THE WEST

The Cincinnati Academy of Medicine on Monday evening, February 18, 1907, entertained Dr. George W. Crile, of Cleveland, Professor of Surgery in the Western Reserve University and surgeon to the Lakeside Hospital. The doctor addressed the society on An Experimental and Clinical Research on Direct Transfusion of Blood. He gave some brilliant results of his experimentation in this line and reported cases in detail. The academy will hold its annual election of officers on March 4th and a banquet celebrating its semicentennial on March 5th at the new Hotel Sinton. The valedictory of the retiring officers and inaugural of the incoming will take place on March 11, 1907.

Statement of Mortality of Chicago for the Week Ending February 9, 1907, compared with the preceding week and with the corresponding week of 1906. Death rates computed on United States Census Bureau's midyear populations—2,107,620 for 1907 and 2,049,185 for 1906:

	Feb. 9, 1907.	Feb. 2, 1907.	Feb. 10, 1906.
Total deaths, all causes.....	782	711	566
Annual death rate in 1,000.....	19.38	18.33	14.34
Sexes			
Males.....	419	396	324
Females.....	364	315	242
Ages			
Under 1 year of age.....	193	146	122
Between 1 and 5 years of age.....	89	89	54
Between 5 and 20 years of age.....	52	52	36
Between 20 and 60 years of age.....	295	286	236
Over 60 years of age.....	154	168	118
Important causes of death			
Apoplexy.....	13	12	14
Bright's disease.....	52	43	39
Bronchitis.....	28	20	21
Consumption.....	70	83	60
Cancer.....	17	29	31
Convulsions.....	13	12	11
Diphtheria.....	15	15	11
Heart diseases.....	56	55	42
Influenza.....	8	12	3
Intestinal diseases, acute.....	28	23	27
Measles.....	11	4	1
Nervous diseases.....	30	29	19
Pneumonia.....	153	151	118
Scarlet fever.....	44	44	7
Suicide.....	8	5	7
Typhoid fever.....	7	7	7
Violence (other than suicide).....	28	40	4
Whooping cough.....	9	7	0
All other causes.....	191	153	122

GENERAL

The Tenth Congress of Polish Physicians and Scientists will be held at Lemberg, Austria-Poland, on July 22-25, 1907. Dr. Francis J. Fronczak, of Buffalo, is the American representative of the congress.

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

February 16, 1907.

1. Lichen Planus of the Oral Mucosa. With Report of Two Cases, By DAVID LIEBERTHAL.
2. Late Phlebitis Following Clean Abdominal Operations, By M. L. HEIDINGSFELD.
3. Late Phlebitis Following Clean Abdominal Operations, By W. W. GRANT.
4. A Series of Medical and Surgical Affections Treated by Artificial Autoinoculation, By A. P. OHLMACHER.
5. Accurate Modification of Milk, Simple and Practicable, By DANIEL R. BROWN.
6. Simplicity in Infant Feeding, By CHARLES W. TOWNSEND.
7. Certified Milk in Small Cities, By C. W. M. BROWN.
8. Why Percentage Feeding Fails. A Plea for Its More Frequent Adoption by the General Practitioner, By H. LOWENBURG.
9. The Alcohol Question in the Navy. With Suggestions as to Its Restriction, By P. A. LOVERING.
10. The Army Canteen as a Means of Reducing Intemperance, By CHARLES E. WOODRUFF.
11. Medical Care of Inebriates, By T. D. CROTHERS.
12. Some Professional Reminiscences, By GEORGE F. SHRADY.
13. The Ultimate Result of the Röntgen Treatment of Carcinoma of the Breast, By GEORGE C. JOHNSTON.
14. Mistakes in the Diagnosis of Pulmonary Tuberculosis, By HARRY LEE BARNES.

1. Lichen Planus of the Oral Mucosa.—Lieberthal describes the disease. Lichen planus affects most frequently the mouth, rarer the anus and urethra, rarest the larynx. It begins either contemporaneously with the lesions on the skin or it may precede or follow them. In a number of cases the mucous manifestations are the only symptoms of the disease, in which instance a mistake in the diagnosis may also be easily made. Of the differential diagnosis he says that some difficulties are encountered in the differentiation of lichen planus, leucoplakia proper, and syphilitic lesions. In leucoplakia is present dryness, stiffness, more or less pain at the ingestion of hot or very cold liquids or spicy substances, while in lichen planus the lesions of the cheeks are rarely noticed by the patient. Leucoplakia never heals without local interference, while lichen planus may heal spontaneously or disappear by the administration of arsenic. The differential points between syphilis and lichen planus of the mucosa are: Syphilitic lesions of the mouth are painful, lichen eruptions are painless. The syphilitic mucous plaques are situated within a highly reddened infiltrated area, lichen planus is surrounded by perfectly normal mucosa. The syphilitic manifestations show a tendency to progressive changes, viz., erosion, ulceration and proliferation; lichen planus, though also quite persistent, shows no such changes. In addition to these, the cutaneous lesions, if present and typical, and also the effect of specific treatment, will aid the practitioner to establish a diagnosis. As regards the treatment, it must be remembered, that lichen planus will at times heal spontaneously. Some cases yield promptly to the administration of arsenic, the mucous lesions healing as readily as those on the skin. In other cases the mucosa heals later, while some do not even yield to arsenic nor any other systemic treatment. Touton recommends highly the local application of a 1 per cent. solution of bichloride in alcohol. It is well to prevent all irritation from sharp substances, and to instruct the patient in the necessary hygienic care of the mouth.

3. Late Phlebitis Following Clean Abdominal Operations.—Grant comes to the conclusion that the cause of phlebitis of the epigastric, iliac, femoral, saphenous and tibial vessels, occurring late after a perfectly aseptic operation, with prompt healing of the wound, is probably not septic. We do not know the specific cause

or causes. The cases, with our present knowledge, are very difficult of satisfactory explanation. In the absence of convincing or pathological evidence, and in the face of profound surgical skepticism, it is not rational, in the best and cleanest days known to surgery, to assume an infection that is devoid of satisfactory evidence. The condition which causes the thrombus, before the inflammation, or of the phlebitis, preceding the thrombus, is the vital question. It is exceedingly difficult, in fact, quite impossible, to reconcile the facts with the recumbent position, the simple ligature or injury of small veins, in a distant field, often on the opposite side of the body, though admitting that infection need not come from the site of operation. The author believes that there is a general condition affecting the composition of the blood, that may, and often does, exist before operation, which is an essential factor in the cause of thrombophlebitis in these cases. A careful scrutiny of patients should be made before operation, and an examination of the blood should be made before and after operation. This on a fairly liberal scale, in his opinion, would reveal interesting and useful information, and shed some light on a puzzling subject. If the patient is chlorotic and anæmic, or if the conditions are not satisfactory, the health should be improved, if delay is permissible, by the administration of iron and acids, and metabolism improved by a suitable food supply, while specific or constitutional affections should, as usual, receive just consideration.

6. Simplicity in Infant Feeding.—Townsend states that in beginning to feed an infant, whether it be a newborn or an older one that has suffered from improper feeding, the safest rule is to begin with a mixture weak in all its ingredients, and by slow degrees gradually increase the strength. The mistake is often made of beginning too strong and in making frequent and purposeless changes. Thus a new born baby can be put on a mixture in which there are only three ounces of the upper eight ounces of top milk in twenty ounces, and the strength gradually increased by the addition every second day of half an ounce more top milk and the subtraction of half an ounce of water until eight ounces of top milk are given in a twenty ounce mixture. It is gratifying to find that many infants who have struggled unsuccessfully on much modified milk mixtures will often respond at once when these simple, but all important principles are borne in mind.

7. Certified Milk in Small Cities.—Brown remarks that there are forty-nine States and Territories which have laws applying to the production and care of milk and its products, while a large number of municipalities have ordinances governing its quality, transit, care, and sale. All these laws and ordinances, with possibly one exception, apply chiefly to the amount of butter fat and total solids the milk must contain and not to the quantity of extraneous matters or to the bacterial count. Interest in and knowledge of milk and foods is increasing both in the medical profession and among the laity, if the numerous articles of scientific and popular interest in the medical and lay journals can be adduced as evidence. But in spite of this interest and increase of knowledge, the fact remains that ordinary milk, while of almost universal use, is the most uncleanly article of food on our tables. The author mentions the dangers of sterilization and pasteurization, and says that the desideratum is fresh, clean milk, so fresh and clean that it can be safely used raw, either for the food of infants or sick adults. The best milk can be procured chiefly in large cities, but the author shows also that it can be had in small towns. Elmira is the one hundred and thirty-third city of the United States in the list of one hundred and thirty-six cities having over 30,000 inhabitants, and the author describes the methods adopted in Elmira to procure pure milk for the consumers.

10. The Army Canteen as a Means of Reducing Intemperance.—Woodruff reviews the canteen question and concludes that the sooner the canteen is restored the better. He hopes that the opponents who are engaged like the writer in the crusade for temperance, will join the sponsors of the canteen in reestablishing this practical instrument for good. It is a step toward temperance. Woodruff does not quote authorities or reports because they are practically all of one tenor, that the abolition of the beer feature of the canteen was a disaster. The opponents are the rare exceptions. The public should credit these experts with unbiased knowledge of the facts at first hand. It is a notorious fact that the establishment of the canteen was violently opposed by very many officers, but as soon as it proved its usefulness, the opposition disappeared. And such men should not be accused of ignorance of the matter, and least of all, of viciousness. The author says that he is quite sure that every one who investigates the matter impartially will advocate the old system which proved to be so efficient and which is now desired by practically all officers, by both the abstainers and those who use alcohol themselves.

MEDICAL RECORD

February 1907

1. Supernumerary Cervical Ribs and Their Effects on the Brachial Plexus and Subclavian Artery,
By COLIN K. RUSSEL.
2. The Approaching Conquest of Cancer,
By ROBERT BELL.
3. Intranasal Conditions as Bearing Upon the Etiology of Diseases of the Ear, . . . By G. HUDSON-MAKUEN.
4. Streptococcus Pneumonia, . . . By G. W. McCASKEY.
5. Report of Three Epidemics of Measles, with Particular Reference to Koplik's Symptom and Its Relation to the Rash and the Initial Fever,
By CHARLES J. DILLON.
6. The Radical Cure of Trigeminal Neuralgia by Means of Peripheral Operations,
By ALEXIS V. MOSCHCOWITZ.
7. Pneumonia in Children: Its Successful Management by Hydriatic Measures, With an Illustrative Case,
By W. PARKER WORSTER.

1. Supernumerary Cervical Ribs and Their Effects on the Brachial Plexus and Subclavian Artery.—Russel observes that cervical ribs are not particularly uncommon and have frequently been demonstrated at autopsy and in the dissecting room, but the clinical symptoms which may be caused by the pressure of supernumerary cervical ribs on the cervical plexus have been given little attention. The author could only find the reports of nine cases in a fairly thorough revision of the literature. More or less complete occlusion of the subclavian seems to be more common, nearly thirty such cases are reported. The author adds to this list four of his own patients, and remarks that cervical ribs are doubtless a species of atavism and are sometimes found in children of parents who show some stigmata of degeneration. Israel, in his discussion of Borchardt's paper, speaks of having operated upon a patient whose sister also had cervical ribs with symptoms, so that heredity seems to be a factor. Doubtless they are often present without causing any symptoms whatever. According to Riesman cervical ribs are more commonly present on the left side, but certainly the symptoms are most often seen in the right arm. They are more frequently met with in women than in men, and first make their appearance between the ages of nineteen and thirty.

2. The Approaching Conquest of Cancer.—Bell, in reviewing the progress we have made in cancer researches, says that we have now learned that cancer, as we recognize it, is the culminating point of a series of changes which have taken place, seriatim, in certain important organs, consequent in the first instance upon their being compelled to rely upon a vitiated blood

supply, this having been brought about to a great extent by gross negligence of hygienic laws and over-indulgence in articles of diet which are unsuitable to our life and habits.

3. Intranasal Conditions as Bearing Upon the Etiology of Diseases of the Ear.—Hudson-Makuen states that diseases of the ear, especially in their initial stages, are largely dependent upon intranasal conditions, is a fact well known to otologists, but it is not generally recognized by practitioners of medicine. In this connection the following points in the anatomical and physiological relationship of the ear and nasopharynx cannot be too often or too strongly emphasized. The tubotympanum is a *cul-de-sac* or sinus, occupying exactly the same relation to the nasal cavity that the sphenoid, ethmoid, maxillary and frontal sinuses occupy, and the lining membrane of the tubotympanum is merely a continuation of that which lines the nasal and accessory cavities. Moreover, the physiological relationship of the middle ear to the nasal cavity is also similar to that of the other sinuses. It has its drainage through the nasopharynx and it is aerated by means of nasopharyngeal respiration. There is a slight excursion of the drum membrane during each respiration, the motion being inward during inspiration and outward during expiration. The conditions in the nasal cavities giving rise to acute diseases of the ear are, first, those causing disturbances of nasal respiration; second, those attended by suppurative intranasal and sinus inflammation; and, third, any condition which by pressure or otherwise may give rise to reflex disturbances. The first class includes hypertrophic and atrophic rhinitis, intranasal growths, septal deflections and spurs, and nasopharyngeal hypertrophies and tumors; and the damage to the ear is chiefly mechanical in its origin. The second class includes all catarrhal conditions of the nasal and accessory cavities, and the damage to the ear is usually by continuity of structure. The third class includes those conditions which give rise to irritation of the terminal nerves in the nasal and accessory cavities and set up ear complications by so called reflex action.

5. Report of Three Epidemics of Measles, with Particular Reference to Koplik's Symptom and Its Relation to the Rash and the Initial Fever.—Dillon comes to the conclusion that Koplik's symptom is a constant, definite, early diagnostic sign of measles, of greater diagnostic value when present than even the rash. The constancy of the symptom is indicated by the fact that in 221 cases observed from the period of incubation well into convalescence it was definitely absent only twice. They sometimes disappear before there is any sign of a skin eruption, and frequently before the rash has fully bloomed. Cases seen in the earliest stages and presenting but few Koplik's spots as yet are known to have infected exposed children, and for this reason the early detection of the spots can hardly be expected to prove a prophylactic measure of any great value. Koplik's symptom is usually, if not always, preceded by a febrile movement, and the thermometer would seem to be the best aid to early diagnosis when dealing with an epidemic in an institution.

7. Pneumonia in Children: Its Successful Management by Hydriatic Measures.—Worster remarks that wherever, whenever, and by whom the doctrine is adopted that pneumonia is not an inflammatory process, that it is not a lung disease, any more than typhoid fever is a bowel disease, but that it is an infectious disease whose chief manifestation is in the lung, dependent upon a toxæmia evolved in an infection process, then the disease will cease to be treated, and the physician is prepared for the more effective management of the patient suffering from it, with the result of promoting rapid recovery and saving life. That effective management is by means of water judiciously and properly

applied. Hydrotherapy counteracts collapse of the vascular walls, consequently there is no such thing as heart failure; the pulse has always gained in tension after each treatment, and no patient is too weak to bear hydrotherapy properly administered, varying it according to his condition. Nature has provided its own simple and effective remedy for pneumonia—water. Water will promptly and effectively execute its functions whenever proper, just as reflex action will promptly respond to any proper call. The toxic agent circulating in the blood in pneumonia (the diplococcus) produces a toxæmia, and that toxæmia spends its full force upon the nerve centres which govern the functions, thus impairing the organs dependent upon them. The object of treatment is to bridge over the danger which would arise from the failure of these functions by enhancing the patient's vital powers until the life period of the diplococcus is terminated, which is about seven days. The cold bath comes to the rescue, because cold applied to the peripheral nerve terminals of the skin produces a shock to them, and a stimulus to the sensory fibres of the skin which is conveyed to the central nervous system, which in turn sends out a reflex stimulus to the nerve centres which govern respiration, circulation, digestion, tissue building, and excretion, the five life saving functions upon whose capacity the patient depends to withstand the toxic agents circulating in the blood. The mere lowering of the temperature is a secondary consideration, but the temperature is reduced, respiration deepened, cardiac action improved, and pulse slowed and rendered less dicrotic. The author describes the treatment of a patient by hydrotherapy, which, he says, illustrates exactly how a child can be successfully managed when affected with pneumonia.

BRITISH MEDICAL JOURNAL.

February 2, 1907.

1. Some Points in the Diagnosis and Treatment of Laryngeal Cancer, By Sir F. SEMON.
2. Duodenal Ulcer and Its Treatment (*The Hunterian Lecture*), By A. W. M. ROBSON.
3. A Case of Repeated Abdominal Section for Perforation of Gastric Ulcers, By A. CUFF.
4. Multiple Internal Diverticula (Invaginations?) of the Small Intestine, By A. A. S. SKIRVING.
5. Opsonins and Their Utility in Practical Medicine, By H. FRENCH.
6. Note on the Temperature of Japanese Hot Baths, By L. HILL.

1. **Cancer of the Larynx.**—Semon first calls attention to the great importance of early recognition of malignant growths of the larynx; the earlier the operation the greater the chance of cure. An extremely valuable laryngoscopic sign of beginning cancer is the following: If the vocal chord from which a suspected laryngeal growth springs shows at an early period of the disease a defect of mobility other than due to mechanical impaction of the growth in the glottis on phonation, this sign is almost pathognomonic for the malignant character of the tumor. If, however, this sign should yet be absent when the case comes under observation, such negative evidence does by no means exclude malignancy. The writer favors the preliminary microscopical examination of an intralaryngeally removed piece of the new growth; it may not only fully corroborate the clinical diagnosis, but also strengthen the surgeon in proposing immediate radical operation. It is highly improbable that the few days which must elapse between the intralaryngeal removal and the report of the microscopist are likely to bring about any important deterioration of the local conditions, whilst the fear of local autoinfection of previously healthy parts in the larynx or of metastasis elsewhere is equally little justified. So far none of the modes of treatment, other than surgical, such as Doyen's serum, trypsin injections, etc., have proved of any

value. In cases of intrinsic laryngeal cancer, the operation of choice in the author's opinion is thyrotomy. Of twenty-five patients operated upon by him, twenty, or 80 per cent., have remained lastingly cured. The vocal results were surprisingly good. One great advantage of the operation is that if recurrence takes place, more radical operations can still be done. Intralaryngeal operations are insufficient, and as a rule, damaging to the patient. Hemilaryngectomy or partial extirpation will probably ultimately be limited to those cases of intrinsic cancer which come under observation only at a period when the disease has already invaded the cartilaginous framework, and to a few exceptionally favorable cases of extrinsic cancer. Subhyoid pharyngotomy can be employed only in a very limited number of cases, namely, in those in which the disease is situated near the upper aperture of the larynx. As regards total extirpation of the larynx, the author's experience has been anything but encouraging. It is beyond the shadow of a doubt one of the most mutilating operations in surgery. It does away with speech in its ordinary sense, and in not a few cases to this loss of speech is added permanent difficulty in swallowing, which compels the patient to take his meals alone, or even to be fed artificially.

2. **Duodenal Ulcer.**—Robson states that perforated duodenal ulcer is to the surgeon almost the newest of the many possible causes of acute peritonitis. It is a curious and unexplained fact that duodenal ulcer is more frequently found in men than in women; just the reverse obtains in gastric ulcer. The two conditions are frequently confused; the duodenal ulcer, however, usually gives a much more indefinite clinical history than gastric peptic ulcer; it is much less amenable to medical treatment, and its complications are as a rule more severe, hemorrhage being often rapidly fatal, and perforation occurring more insidiously and more apt to end in death. It occurs mostly in middle aged persons, but may be found at any age, from the newly born infant to extreme old age. Pain is the most important symptom, usually starting from three to four hours after a meal, when the stomach is pouring its irritating acid contents into the duodenum. The pain is relieved by food, the acid being absorbed, and the pyloric orifice closing for a time. So that pain is most frequently complained of about 11 a. m., 5 p. m., and on going to bed or later after the patient has been asleep a short time. That pain is chiefly due to the acid is shown by the relief which follows the taking of anything to dilute or neutralize it, or the emptying of the stomach by vomiting or lavage. The pain usually starts a little above and to the right of the umbilicus; it may be paroxysmal or merely a dull ache. There is much less tendency for the pain to radiate than in gastric ulcer or in biliary colic. Duodenal ulcer is usually characterized by periods of comparatively good health intervening between the acute seizures; these intervals may extend from weeks to months. Tenderness can usually be elicited to the right of the middle line, just above and to the right of the umbilicus. It is more diffuse than in gallbladder trouble, and extends further downward. Rigidity of the right rectus is usually well marked during the exacerbation, and may be constant if the ulcer is on the anterior wall of the duodenum and if adhesions are present. Flatulence is an important symptom and is most marked when pain is present, which it seems to intensify. Spasm of the pylorus is generally present, leading eventually to dilatation of the stomach, and the gastric juice is usually excessively acid. When the rectus is not too rigid a distinct fullness may sometimes be felt, occasionally giving rise to the suspicion of a tumor. Vomiting is not a very prominent symptom, acid eructations being more frequent. The appetite is often good. Constipation is a very common

symptom. It is astonishing how little nutrition may be interfered with, and how little loss of weight there may be for many years. Biliary catarrh is quite common, the patients being slightly jaundiced, and indican present in the urine. Interstitial or suppurative pancreatitis may arise from an extension of the ulcer into the pancreas. In some cases duodenal ulcer may be present without symptoms, until hæmorrhage or perforation reveals its presence. In such cases there is usually absence of acidity, adhesions, pyloric spasm, etc. Other serious complications, besides hæmorrhage and perforation, are anæmia, cicatricial contraction with stenosis and dilatation of the stomach, pancreatitis, subphrenic or other abscess, and disabling adhesions. Hæmorrhage, in the form of hæmatemesis or melæna, may be the very first symptom. There are few ulcers which do not bleed at some time, but the bleeding may not attract notice, as if slight the blood usually passes downward. Perforation is the most serious and frequent complication, occurring in about one half the cases. Either acute or chronic ulcers may perforate. Fortunately, the gastric and duodenal contents are usually only slightly septic at the time of perforation, so that operation within twelve or even twenty-four hours of rupture offers a fair chance of success. The closure of the rupture at the time of operation is essential; simple drainage without repair is useless. The mortality is still far too high and should be brought down to from five to ten per cent. in cases operated on within twelve hours of rupture. Posterior gastro-enterostomy is the treatment of choice, diverting the food from the ulcerated region and relieving the other associated conditions. Cancer may supervene as the result of the irritation of duodenal ulcer. When chronic or subacute pancreatitis is also present, as evidenced by jaundice, glycosuria, fat in the stools, and rapid loss of weight, the need for operation is additionally urgent. Cholecystenterostomy may be necessary to relieve the jaundice and take the pressure off the pancreas.

LANCET

February 2, 1907.

1. Pain in the Groin, By Sir W. BENNETT.
2. Idiopathic Cyanosis Due to Sulphhæmoglobinæmia (Enterogenous Cyanosis), By S. WEST and T. W. CLARKE.
3. The Causation and Treatment of Some Headaches, By W. HARRIS.
4. On Opsonins and the Opsonic Index and Their Practical Value in the Treatment of Disease, Especially with Regard to Pulmonary Tuberculosis in Sanatorium Patients, By G. A. CRACE-CALVERT.
5. A Review of the Present Means of Combating Sleeping Sickness, By A. KINGHORN and J. L. TODD.
6. Paratyphoid Fever in the Tropics: Cases of Mixed Infection: Paratyphoid Fever and Malaria; Paratyphoid Fever and Staphylococæmia; Paratyphoid Fever and Pneumococæmia; Paratyphoid Fever and Typhoid Fever, By A. CASTELLANI.
7. A Case of Transposition of the Viscera, By F. E. LARKINS.
8. The Visual Efficiency of the Uncorrected Myope, By J. H. PARSONS.
9. The Rôle of the Blood Plasma in Disease, By H. CAMPBELL.
10. German Methods of Meat Inspection as Carried Out in Berlin, By H. A. MACEWEN.

1. **Pain in the Groin.**—Bennett discusses a group of cases having the following points in common: Pain, continuous or intermittent, in the fold of the groin without swelling, tenderness, or any other sign of lesion near the seat of pain: An impression on the part of the patient that the cause of the pain was above or below the groin as the case may have been, without being able to locate it. From a study of the cases he makes the following deductions: 1. That pain in the groin as an isolated symptom may arise from causes

either so remote or unlikely that their existence would at first sight be hardly worth consideration. 2. That no examination in a case of pain in the groin can be effective unless it is made in the erect as well as in the horizontal position of the patient. 3. That distinctly localized pain in the presence of obvious organic disease of which the patient is aware may so assert itself as to lead to the gross condition being considered of little or no importance. 4. That the belief in a "functional" or "psychic" pain would be greatly diminished if in all cases of apparently unexplainable pain a more comprehensive search in a detective spirit were made for a cause than is sometimes done.

2. **Idiopathic Cyanosis.**—West and Clarke report the case of an unmarried woman, aged thirty-seven years, suffering from marked cyanosis and debility. The cyanosis was universal, the color being due to changes in the blood itself, and not to pigmentation. Physical examination was negative, and the blood count and the per cent. of hæmoglobin only slightly below normal. But spectroscopic examination of the blood showed the spectrum of methæmoglobin. Further investigation showed the case to be one of enterogenous cyanosis due to sulphhæmoglobinæmia, a condition first described by Stokvis in 1902. The urine contains a substance which gives a red color with hydrochloric and other acids and transforms oxyhæmoglobin into methæmoglobin. When ammonium sulphide is added to the blood the spectrum of methæmoglobin disappears, but not that of sulphhæmoglobin. The cause of the condition is not clear; a specific microbic infection of the blood is unlikely, and an increased formation of sulphuretted hydrogen in the intestines is not probably the sole cause, which may lie more in the intestinal walls than in their contents. It is possible that the defect is one which prevents the sulphuretted hydrogen from being excreted by the lungs and enables it to pass over from the venous blood, where it is more or less inert, to the arterial system where, carbon dioxide being absent, it can attack the oxyhæmoglobin with toxic force.

4. **Opsonins in Pulmonary Tuberculosis.**—Crace-Calvert has studied the opsonic reaction in the blood of sanatorium cases of pulmonary tuberculosis. The opsonic index in normal healthy people, apparently free from tuberculous infection, varies within definite limits—from 0.8 to 1.2. In ten early incipient cases of pulmonary tuberculosis the writer found a normal index in six and a subnormal index in four; but these latter cases did just as well under sanatorium treatment as the former. In acute pulmonary tuberculosis where there is a high temperature, and the patient is apparently going down hill rapidly, the index varies from day to day. This variability is due to autoinoculation. Such a fluctuating index is a sign of acute mischief; as the trouble lessens the index becomes steadier and tends to approach the normal line. The ordinary fluctuations of temperature have nothing to do with variations in the opsonic index. In ordinary sanatorium cases where there is a fair amount of disease in a subacute state the index is usually about normal, from absence of stimuli from autoinoculation, or from wearing out of the immunizing machinery. In the class of cases called "cures" or more properly "arrested cases" the index varies. If it is low it indicates that his resistance was not permanently affected by treatment and that he therefore runs a risk of further infection. In cases of tuberculous glands the index is invariably low.

5. **Sleeping Sickness.**—Kinghorn and Todd state that efforts to check sleeping sickness or human trypanosomiasis should be directed (1) against its transmitting agent, the tsetse flies (*Glossina palpalis*) (a) by destroying them or (b) by preventing their reaching and biting men; and (2) against the causative parasite, the trypanosome (a) by the treatment of persons

already infected and (b) by their isolation in order that they may not constitute foci of infection for other individuals.

6. Tropical Paratyphoid Fever.—Castellani has seen in Ceylon nine cases of simple paratyphoid fever, and four cases of mixed infection, malaria, pneumonia, typhoid fever, and staphylococcus infection, respectively. His conclusions are: 1. Ceylon must be included among the countries where paratyphoid fever is endemic; both types of the disease, paratyphoid A. (Brian and Kayser) and paratyphoid B. (Shotmüller), are met with. 2. The disease is clinically indistinguishable from typhoid fever, though generally it runs a milder course. 3. In the one case which ended fatally, intestinal ulcers were found identical with typhoid ulcerations. 4. Cases of mixed infection are apparently not rare.

LA RIFORMA MEDICA

January 17, 1907.

1. Medical Treatment and Prescriptions (To be continued). By AUGUSTO MURRI.
2. The Behavior of Latent Systole in Various Cardiac Lesions. By SPIRO LIVIERATO.
3. Investigations on the Quantity of Sodium and Potassium in the Urines in Some Morbid States. By GIOVANNI GENTILE.
4. The Antipyretic Action of Marenin. By ARMANDO D'OTTONE.

2. Latent Systole in Heart Disease.—Livierato points out that the latent systole is greater in persons with heart disease than in healthy persons. This latent systole is longer in persons during periods of insufficiency, as compared to periods of compensation. The more effective the cardiac systole is, the shorter the latent systole becomes. This is an important prognostic point.

ROUSSKY VRATCH

December 23, 1906.

1. Resections of the Liver. By V. A. OPPEL.
2. Inflammations of the Frontal Sinuses. By E. N. MALIUTINE.
3. Observations on the Treatment of Scarlet Fever with Moser's Serum (Concluded). By V. I. MOLTCHANOFF.
4. The Influence of Oxydose Upon the Products of Nitrogenous Metabolism in the Urine. By G. V. FLEISCHER.
5. Two Cases of Fatal Hæmorrhage in Peritonitis. By J. B. KAPLAN.
6. Abscess of the Spleen (To be concluded). By A. I. OKISCHEVITCH.
7. Projects for the Reform of Medical Attention for Factory Operatives and for Medical Insurance (Continued). By N. A. VIGDERSHTEIN.
8. Report of the St. Petersburg Municipal Lying-in Asylums for 1905 (To be continued). By L. A. KRIVSKI.

1. Resections of the Liver.—Oppel reports a case in which he removed a wedge-shaped portion of the liver, in order to resect the stones which had become lodged in this portion of tissue. The technique employed included a preliminary suturing of the liver tissue with chains or loops of suture material, so as to secure control of hæmorrhage. Each suture should be pulled taut as soon as it is introduced, until all vessels in the region to be resected are tied. The loops of suture material on either side of the cut are then united by transverse sutures, and thus the edges of the wound are brought together.

2. Inflammations of the Frontal Sinus.—Maliutine reports a case of anomaly of the frontal sinus with absence of about one half of the posterior wall thereof. The patient was operated upon for empyema of the frontal sinus, and a pulsating pus sac was revealed by the anterior opening in the bone. When the sac was removed the anomaly in the posterior wall was discovered. The opening revealed the sagittal sinus and the

dura mater. In this case the empyema had perforated anteriorly near the root of the nose, and the patient had applied for treatment on this account. The author reports also a second case in which a perforation anteriorly had taken place. Such cases are rare.

3. Moser's Serum in Scarlet Fever.—Moltchanoff found that this serum lowers the temperature and improves the general condition (pulse, respiration, nervous symptoms). It has not a marked influence, however, on the scarlatinal process and its complications. Its action on local lesions, e. g., in the throat, is very faint. The febrile period is not shortened by the serum. The action is antitoxic, but it is very slightly effective against the infectious process. The serum should be used especially in the cases in which there are more or less marked signs of intoxication. The injections should be given not later than the fourth day of the disease.

THE PRACTITIONER

January, 1907.

1. Introduction to a Symposium on Influenza. By T. C. ALBUTT.
2. A Note on Some Clinical Aspects of Influenza. By R. D. POWELL.
3. Note on the Therapeutics and Prophylaxis of Influenza by Quinine. By W. BROADBENT.
4. A Note on a Possible Source of Influenza. By D. DUCKWORTH.
5. Thoughts on Influenza. By J. MOORE.
6. Some General Considerations on Influenza. By S. WEST.
7. The Respiratory Complications of Influenza. By H. MACKENZIE.
8. Influenza As It Affects the Nose and Throat. By ST. CLAIR THOMSON.
9. Influenza in Relation to the Digestive Organs. By N. DALTON.
10. Influenza and Appendicitis. By D. ARMOUR.
11. Cardiac Complications of Influenza. By J. COWAN.
12. The Nervous System in Influenza. By W. HARRIS.
13. The Psychoses of Influenza. By T. C. SHAW.
14. Ocular Manifestations Accompanying Influenza. By H. W. LYLE.
15. Aural Complications of Influenza. By A. H. CHEATLE.
16. The Microorganisms of Influenza. By W. D. E. EMERY.
17. Influenza From a Public Health Standpoint. By A. NEWSHOLME.

2. Clinical Aspects of Influenza.—Powell observes that the catarrhal forms of influenza as affecting the lungs is attended with physical signs which are quite characteristic. He cites the explosive inspiratory crepitus, especially in the posterior lobes, with an absence of percussion dullness, also a straining paroxysmal cough, with very little expectoration at first, but with profuse, glutinous, and purulent discharge after a few days. The cough and fever are suggestive of œdema around miliary tubercles, though the latter may be entirely wanting. With pneumococcal infection superadded the pneumonia aspect of the case becomes marked, and especially the tendency to paralytic filling of the lungs and cardiac failure. Acute anginal seizures in such cases may be without actual cardiac lesions. The anginal phenomena with increased arterial tension were observed in connection with urine of high specific gravity and with such an excess of urea that the addition of nitric acid would cause the deposition of scaly nitrate crystals. Nerve phenomena which the author has observed, in addition to intense headache, depression, and insomnia, are paraplegia, paralysis, neuritis, and diaphragmatic neuralgia. Spasmodic asthma has been a sequel in many cases, which cases are successfully treated by balneotherapy.

3. Therapeutics and Prophylaxis.—Broadbent has found quinine the best remedy for influenza, since its first appearance as an epidemic. He gives one drachm of ammoniated quinine and two drachms of solution of

acetate of ammonia every hour for three hours and then every four hours. In fulminating attacks of the disease the patient being comatose, quinine hydrobromate hypodermically in large doses, has been effective. As a prophylactic he gives two grains of quinine every morning while the epidemic persists. Such treatment has been eminently satisfactory.

4. A Possible Source of Influenza.—Duckworth believes that many travelers on the continent of Europe and to the Mediterranean are infected in the sleeping apartments or sleeping berths of the trains. He therefore advises complete and thorough disinfection of all the furnishings of such cases.

5. Thoughts on Influenza.—Moore's conception of this disease is that it is an acute, specific, infective, febrile affection with a sudden onset, after an incubation of two or three days. It predisposes to other secondary affections, it has a disastrous effect upon the heart, and convalescence from it is often protracted. Catarrhal features are not essential. It is often followed by fatal heart exhaustion, bronchitis, or pneumonia, especially in the aged. In children there is usually a sharp febrile attack with or without an erythematous rash, but there are few complications. The poison of the disease when taken into the body quickly produces fever and rapid pulse. The most prominent types of the disease are: 1. The neurotic, neuralgic, or rheumatoid type. 2. The cardiopulmonary type, which is especially fatal in the aged. 3. The gastric or gastrointestinal type, with anorexia as a prominent symptom. 4. The febrile type, especially common among children. The fever is followed by subnormal temperature after two or three days. The prophylaxis calls for strict isolation of the patient, the condition of the mouth and fauces being particularly regarded. Ammoniated tincture of quinine is the most important remedy. Sodium salicylate is indicated for the rheumatoid and neuralgic pains, and strychnine for the cardiac weakness. Alcohol is usually unnecessary, and frequently it is quite harmful.

6. General Considerations.—West discusses the infectious nature of the disease. It is a germ disease, its infectiousness is most marked, and one attack, instead of immunizing the patient, seems to predispose him to another. The fever of the disease is of short duration and moderate intensity. Postfebrile depression may persist for two weeks. The most common sequel is pneumonia, either of the lobar or the disseminated form. Like diphtheria, it has a profound effect upon the cardiac muscle and nerves. The prominent cardiac symptoms are præcordial pain and cardiac syncope. The heart remains weak long after the acute disease has passed. Sweating is also a frequent symptom and may persist a long time. There is no antidote to the disease, the treatment must be symptomatic. Depression being so marked a feature, the remedies given should be stimulating and not depressant.

7. Respiratory Complications.—MacKenzie observes that the chief effect of the attack of the influenza bacillus is usually on the respiratory tract. Distressing cough with bronchitis, bronchopneumonia, pneumonia, pleurisy, are of frequent occurrence, and tuberculosis not infrequently terminates a case. The larynx and trachea are usually involved and hoarseness, pain, and scanty expectoration are common symptoms. The bronchi are often inflamed and yield a mucopurulent secretion. Bronchopneumonia is the most common of the pulmonary complications and is often of very serious import. The treatment must consist of rest in bed, the atmosphere of the bedroom being not more than 62° F. Expectorants will usually be required, but they should always be such as will stimulate and not depress the heart. The diet should be simple, fluid or semisolid, and alcohol and oxygen may be given

as occasion demands. Pure air is of the utmost importance as a means of treatment.

8. Influenza as it Affects the Nose and Throat.—Thomson finds that the influenzal virus shows itself in the upper air tract by inflammatory affections or neuroses. As to the former after an initial epistaxis there may be the symptoms of an acute catarrhal rhinitis with profuse mucopurulent discharge and pain in the region of the orbit. The nasopharynx may be the seat of diffuse inflammation, or there may be lacunar tonsillitis. The larynx may be the seat of acute catarrhal inflammation with hoarseness and dysphagia. Of the neuroses anosmia is a frequent sequel of influenza. Cacostmia will usually be due to suppuration in one of the accessory sinuses. The pharynx may be the seat of hyperæsthesia or anæsthesia with paralysis of the soft palate and dysphagia. The laryngitis of influenza may be followed by a more or less extensive paralysis of the vocal chords. Cough is paroxysmal, distressing, and persistent. The author believes that the symptoms in the upper air passages may be brought about by more than one variety of microorganism. The general treatment is of primary importance. As to local measures sprays and lotions are not recommended during the acute stage of the disease.

9. The Digestive Organs in Influenza.—Dalton finds it difficult to prove that any particular case of gastrointestinal disturbance is due to influenza, for symptoms may be absent and there may be a gastroenteric catarrh of influenzal origin without rise of temperature. Cases which are mentioned by the author as due to influenza are so considered (1) because occurring during an epidemic, (2) because not traceable to other causes, (3) because showing peculiarities which suggested influenza, (4) because manifestly due to some poison which produces eccentric effects, especially upon the nervous system. The cases in which the influenzal poison is supposed to act specifically on the alimentary canal are classified as follows: 1. Catarrh of the stomach, or intestines, or both. 2. Inflammation of a more severe type, affecting the same parts. 3. Cases which simulate typhoid fever. 4. Cases of a choleraic type. 5. Cases which simulate ulcerative colitis. 6. Cases of anomalous type. The treatment of this disease as it affects the gastrointestinal tract must be expectant. Intestinal antiseptics may be given, also strychnine, digitalis, and alcohol.

ARCHIVES OF THE ROENTGEN RAY.

February, 1907.

1. Illustrating the Penetrating Power of Radium.
By ROBERT ABBE.
2. Negative Illuminator.
By H. H. BORN.
3. On the Direction of Maximum Intensity for the Radiations of a Focus Tube.
By Professor H. BORDIER.
4. What Knowledge Have We of the Specific Action of Electricity in Medical and in Nervous Diseases?
By TOBY COHN.
5. Dietetic Treatment of Disease.
By THOMAS DUTTON.

3. On the Direction of Maximum Intensity for the Radiations of a Focus Tube.—Bordier concludes from experiments that the quantity of x rays emitted is not the same over the whole illuminated hemisphere of the x ray bulb, but that there is one direction in which their intensity is a maximum. There is one line passing through the centre of the anticathode along with the intensity of irradiation is greater than in any other direction; this he calls the optimum direction of irradiation for any particular tube. A knowledge of this optimum direction of irradiation for a given focus tube will help us to improve the adjustment of the various localizers and ray proof screen now in use. All localizers should be so placed that their axis coincides with the optimum direction of irradiation. Each focus tube should be carefully marked with the position of its optimum direction. This could easily be

done by etching a small cross on the glass with hydrofluoric acid. This should be done by the manufacturer, since the position varies with each tube, and depends on the angle between the plane of the anti-cathode and the principal axis.

4. **What Knowledge Have We of the Specific Action of Electricity in Medical and in Nervous Diseases?**—Toby Cohn remarks that there are two distinct modes of action of electric currents on the body which have long been recognized: (1) The action which is equally produced on inorganic bodies—the physical and the chemical action; and (2) the action which is peculiar to the living organism—the physiological action, using the word in its narrow sense. Two processes which take place in inanimate masses as well as in living bodies have received special attention of late years because of their practical importance. These are electrolysis and cataphoresis. Some medical electricians hold that these chemical and physical changes are all important in producing the therapeutic action of electricity; hence follows the logical conclusion that galvanic currents of great strength should be employed—for instance, 40 to 60 milliamperes applied to the head for a quarter to half an hour. To mitigate the pain and caustic action produced locally by these large currents special electrodes have been devised. It is clear, however, that electrotherapeutic curative action may be brought about by means other than by chemical action. Thus, far weaker currents, and also faradic currents which can have no chemical action, are frequently found to be of great practical utility. Of the physiological actions of the current, the most important are those on the bloodvessels and the circulation. The fact has long been known that most applications of electricity excite the vasomotor nerves, and Remak pointed out that the effect of the current was to stimulate the circulation and improve the nutrition. The chief physiological action of electricity is exerted upon the nervous system. Indirectly, this is the probable explanation of the action of electrical treatment in most cases. We possess far less knowledge of the physiological action of electric currents upon the special sensorial and secretorial functions. We do know that galvanic currents give rise to sensations of vision, hearing, taste, and smell when passed through the special sense organs, but we are not able to put this fact to any practical use. A more prolonged diminution of sensitiveness, amounting in some cases to partial anæsthesia, is produced by static brush discharges and by high frequency current. Of greater importance therapeutically is the indirect reflex influence on the central nervous system produced by electrical stimulation of the skin.

LA PRESSE MEDICALE.

January 26, 1907.

1. Stokes-Adams's Disease With Sclerogummatous Lesion of the Cardiac Wall Involving the Fibres of His, By VAQUEZ and ESMEIN.
2. Concerning the Use of Ferments With a View to Intestinal Disinfection, By ALBERT FOURNIER.
3. Alcoholism, A Social Disease, By R. ROMME.

1. **Stokes-Adams's Disease with Sclerogummatous Lesion Involving the Fibres of His.**—Vaquez and Esmein report a case which presented clinically the syndrome of Stokes-Adams's disease, and was found on autopsy to have an irregular plaque of sclerosis, measuring about three by two centimetres, which involved the entire thickness of the wall of the right auricle at the point which corresponded to the commencement of the bunch of fibres described by His. Interference with the action of this bunch of fibres was shown by the latter author to produce a retardation even to complete arrest of the ventricular contractions while the auricular rhythm was uninterrupted, a phenomenon named by him blocking of the heart (Herzblock), and one which was present in this case.

Letters to the Editors.

PAINLESS LABOR.

507 MAIN STREET,

BENNINGTON, VT., February 5, 1907.

To the Editors: With your editorial of February 2nd, on Painless Labor, before me, I wish to report one instance in my own practice. The woman had had one pregnancy, which terminated at the sixth month, cause unknown—the miscarriage was accompanied by considerable pain.

There was nothing worthy of record during the second pregnancy, except that Fehling's test showed one eighth to one quarter of one per cent. of sugar in the urine during the sixth and seventh months. At no other time in her life has sugar been found in the urine.

At 5 a. m., March 3, 1900, the woman awoke with a pain in her stomach. It lasted but a minute and she went to sleep. At 5:30 another pain awoke her, and her husband came for me. No other pain occurred until I arrived, at six, when she had what she called a "slight" pain, but my hand upon the abdomen showed the uterus contracting very strongly, the contraction lasting longer than the pain. While I was washing up in the next room the woman asked if she might arise to urinate. Upon getting my consent, she stepped on to the floor, but immediately summoned me, and I arrived just in time to save the baby from falling to the floor. The child was a 6½ pound boy, fully developed; the mother, a tall spare, "loose jointed" New Englander, twenty-nine years of age.

LUCRETIVS H. ROSS.

CEDAR RAPIDS, IOWA, February 7, 1907.

To the Editors: In reading your editorial in the last *New York Medical Journal*, on the rarity of painless labor, I thought your readers might be interested in one of my patients. I copy from my obstetrical notebook:

August 19, 1889.—Mrs. M., age twenty-seven. Third confinement, boy. Labor normal, but absolutely painless throughout.

February 6, 1892.—Same patient. Girl. Painless labor.

December 22, 1897.—Same patient. Boy. Normal labor. No pain.

Mrs. M. came to Iowa from Chicago, where her second child had been born painlessly. The first confinement, on a farm in Dakota, was "slightly painful," according to the patient's statement.

When engaging me for her third labor, she said: "Come as soon as you can, when called, for I cannot tell that I am in labor until baby is almost born." This time, however, the rupture of the membranes gave warning at the beginning of the second stage. On examination I found the cervix fully dilated and the head being forced down efficiently by painless contractions supplemented by voluntary effort, which continued for two hours, when a normal child was born without the slightest distress, even the distention of the vaginal outlet being entirely painless.

On asking her why she applied voluntary effort when unconscious of pain, she said: "There is a feeling that I must bear down just as one might experience at a bowel movement." The labor was normal in every respect. The natural exhaustion after labor was present, and the return of strength was not more rapid than in ordinary cases.

The two later labors did not differ from this one, except that the membranes ruptured when the second stage was well under way, and I was not called until forcing contractions had caused the head to descend well into the pelvis, this "impulse to bear down" being the only warning the patient had.

Mrs. M. is apparently a perfectly normal, healthy, well balanced woman of medium size and weight, and is now living and well, caring for her family. I have not been able to discover any peculiarity of any kind, excepting this strange phenomenon. The family has been in my charge all these years. Mrs. M. has been ill occasionally. I remember a follicular tonsillitis two or three times, attacks of indigestion, nervous exhaustion, and frequently neuralgia, which prove a capacity for pain. As an explanation it occurred to one of Mrs. M.'s church friends that "Mrs. M. had never sinned."

GERTRUDE BROCKSMITH.

BESSLER, ALA., February 7, 1907.

To the Editors: Your editorial on Painless Labor recalls a case occurring in my practice. On the morning of May 16, 1902, I was called to see Mrs. E., a Jewess, aged thirty-three, a multipara. On my arrival the nurse told me that the membranes had ruptured, but that the patient had had no pains at all. On examination I found the cervix fully dilated and the head on the perineum. Questioned closely in regard to pains, she denied having any. She said she was doing her household work when the membranes ruptured. I waited for contractions, but, as none occurred, I gave 15 grains of quinine sulphate. After an hour I asked her to bear down, when a pain came on, and she was delivered.

My confrère, Dr. G. D. Waller, had reported to me the following case: Mrs. A., a primigravida, aged twenty-four, on September 25, 1903, was free of nervous disease. On examination he found the membranes ruptured, the cervix dilated to about three fourths, and the head well down in the pelvis, but she had had no pains at all. Labor was completed in an hour without pain. The contractions were regular and strong.

Both patients were very slightly built.

J. S. WINTERS.

MARIE, DERCUM, AND METTLER ON APHASIA.

457 DOUGLAS BOULEVARD,

CHICAGO, January 19, 1907.

To the Editors: Marie's views upon aphasia (*Semaine médicale*, May 23, and October 17, 1906) are arousing much interest and discussion abroad. Déjerine has attacked them, but has been ably answered by Marie and others. Recently Dercum (*New York Medical Journal*, January 5, 1907) has presented Marie's views for American readers, and in the light of them has carefully reexamined fourteen of his cases of aphasia. In conclusion, he says: "It must be conceded that Marie's views are very attractive. It would, indeed, appear that aphasia is, in reality, a unity; that it consists not in a word deafness, not in a word blindness, not in an inability to utter words, but in a difficulty or impairment of the faculty of comprehending language, and that it is due to lesion of the zone of Wernicke." In the words of Dercum: "Briefly stated, he (Marie) holds that the chief characteristic of aphasia is an intellectual deficit; that aphasia is a unit; that it is not made up of sensory aphasia on the one hand, or motor aphasia on the other, but that by lesion of the zone of Wernicke there is established an intellectual defect for the comprehension of spoken language; that in so called sensory aphasia, or aphasia of Wernicke, the lesion involves the zone of Wernicke (i. e., the supramarginal gyrus, the *pli courbe*, and the posterior portions of the two first temporal convolutions); that in so called motor aphasia there is, in addition to a lesion of this zone of Wernicke, also an involvement of the region of the lenticular nucleus. Lesion of the lenticular nucleus gives rise to anarthria; therefore, in so called motor aphasia, or Broca's aphasia, we have merely ordinary Wernicke's aphasia plus anarthria. Marie de-

nies that the third left frontal convolution plays any rôle in aphasia whatever." Dercum, in a foot note, further indicates the slight basis upon which rests our belief in the rôle played by the left third frontal convolution in motor aphasia by referring to the work of Fraenkel and Onuf, of Déjerine, of Bernheim, of Ladame, and of Marie himself.

In connection with this rising discussion as to the unity of the language function and of the intellectual (psychic) origin of language, together with the growing doubt as to the great importance heretofore assigned to the so called "centres" of the cortex, it is interesting to note that Mettler (*Diseases of the Nervous System*, 1905), more than two years ago, stated that "many of the higher so called cortical centres subserve in some prominent yet unaccountable way, very complicated psychophysical processes. Such processes, for instance, are speech, writing, reading." He says: "It has always seemed to me to be a crude conception of psychological processes of all sorts to suppose that they were each individually under the absolute and sole control of certain small areas in the cortex. The sharp differentiation made by some physiologists between the cortical centres, the narrow way in which they limit them, and the distinct functions which they assign to them, as though there were hardly any commingling or interconnection between them, has long seemed to me to be puerile, grossly materialistic, and absolutely unwarranted by any scientific proof worthy of the name. . . . Speech, reading, and writing, as I have pointed out elsewhere, are not mere motor and sensory phenomena. They are the expression of a high order of psychosis. It follows, therefore, that they are not subserved alone by fixed small centres in the cortex, but by most complicated intracerebral mechanisms, of which the so called cortical centres are but the prominent outposts, as it were. All statements, therefore, such as . . . that Broca's centre regulates motor speech . . . must be taken only relatively. . . . Psychosis is a brain function, not a function of its mere constituents." (Pp. 716, 717.)

And again, after analyzing the origin and nature of language, Mettler says: "Only by clearly recognizing the above described nature of language and its relation to all of the cortical and perhaps subcortical functions can we explain some of the strange phenomena observed in focal lesions, which we had expected from our physiology to produce a definite set of linguistic symptoms. To account for some of these unexpected manifestations, those who ignore psychology entirely and believe that the evidences of physiology point to special cortical spots as the source of such complicated psychophysiological phenomena as speaking, reading, writing are, have to resort to some very queer and illogical reasoning," of which Mettler gives one or two illustrations (page 766). And still further, this author says: "Disturbances of language, then, are psychic symptoms. They are not more definite as localization symptoms than are some of the illusions and hallucinations previously referred to. Their definiteness occurs on account of the sphere in which they occur, namely, the symbolizing of ideas. . . . It is obvious that in this process, which after long years of practice has become subconscious in part, a fine, delicate coordinating mechanism is involved. The focus of this mechanism, or, rather, the foci of these mechanisms, constitute what are called the cortical speech centres. Disease of these centres causes a loss of language. This is known as aphasia." (Page 767.)

Thus it would seem that some credit for priority is due this American author for calling a halt upon the extreme localization conceptions anent the production of language and its disturbances which have prevailed so much up to the present time.

SETH WICKS.

Proceedings of Societies.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of January 9, 1907.

The President, Dr. CHARLES K. MILLS, in the Chair.
RÖNTGEN DIAGNOSIS AND THERAPY.

Roentgen Diagnosis in Gastric and Intestinal Disease.

Dr. HENRY HULST, of Grand Rapids, Mich., in this paper, which was illustrated by Röntgenograms, said that, while the tendency in Röntgen ray diagnosis had been away from the screen and toward the plate, both methods had their peculiar advantages, the screen for general orientation and motion, the plate for detail and permanent record. In the use of bismuth the aim should be to use no more than was necessary for the examination. In the conclusions drawn Dr. Hulst observed that, if respiration did not, position did exert a marked influence upon the location of the stomach and intestines. The greater the ptosis the more pronounced the effect. The diaphragm was said to be notably higher on the side on which the person examined was lying, and diaphragmatic breathing greatly in excess on the other side. The horizontal position permitted the heart, diaphragm, stomach, and colon to ascend. The horizontal dorsal position caused the stomach also to gravitate toward the fundus. This position tended to replace the prolapsed stomach. Examination for gastroptosis in the recumbent dorsal position was therefore regarded as misleading. To bring out the existing ptosis, it was necessary to put the patient in the erect (sitting or standing) position. Pressure against the hypogastrium was said to push the stomach upward; to a less extent, the diaphragm and heart also. Voluntary retraction of the lower part of the abdomen was said to produce a like result, and to be attended, moreover, by a reflex enlargement of the lower thoracic aperture. This was observed as the exact reverse of what took place in enteroptosis, in which the diaphragm descended together with the other organs and the lower thoracic aperture diminished in size, and suggested the existence of a definite relation between the shape of the body and the position of the internal organs. The Becker-Lenhoff index was mentioned as but one tentative expression of this relation. In proportion as people were well built, their stomach approached a certain type, good figures were rare, especially among women; and the more of a Venus a woman, the more of an Apollo a man, the more perfectly their stomach corresponded with the normal type.

Some Suggestions Concerning the Use of Roentgen Rays in Diagnosis.—Dr. E. W. CALDWELL, of New York, presented a paper with this title. The statement had been made that all Röntgen ray examinations were made by means of shadows obtained by interposing the object examined between a source of the rays and a fluorescent screen or a photographic plate. Dr. Hickey's definition of a skiagraph was quoted as "a record of density, produced by the Röntgen rays, and made in accord with the laws of projection." It was remarked that it was evident that no one could be safely trusted to interpret a skiagraph until he had learned to regard it not as a view, but as a projection, and to be constantly on his guard against erroneous impressions of perspective. This tendency to consider the skiagraph, or so called x ray photograph, as a photographic view had led to much of the dissatisfaction with the x ray, and sometimes caused its veracity to be called in question. The x ray, it was maintained, did not lie, but one who incorrectly interpreted its shadows might seem to be lying when he was only mistaken. Considering the skiagraph as a projection and not as a view, the absurdity of the requests for side views of shoulders and hip joints, familiar to every

Röntgen ray worker, was apparent. Transverse projections of these parts superimposed the shadows of both sides as well as everything between, and the rays must pass through the body in its long diameter. Such projections were therefore in most cases useless.

With all their imperfections, Dr. Caldwell regarded stereoscopic Röntgen projections as extremely valuable in many cases; and, in spite of the difficulty of technique, he felt that they must come into more general use. Since in Röntgen work nothing was gained by the print, he thought it better to use the glass plate and avoid the loss of detail incident to the transfer to printing paper. Whether plate or print was used, it must be remembered that the shadows of similar objects were similar in color. Reference was made to the skiagraph of a supposed vesical calculus, the shadow of which, however, was dark and due to gas trapped in the rectum. The great importance of having x ray work done only by those thoroughly skilled was strongly emphasized, and the paper closed with an exhibition of skiagraphs illustrating the value of x rays in diagnosis.

Dr. HENRY K. PANCOAST exhibited skiagraphs, with explanatory statements, included under the practical application of x ray examinations by the bismuth method in various conditions of the gastrointestinal tract and œsophagus, diseases of the accessory sinuses, and tumors of the brain and head.

Dr. CHARLES LESTER LEONARD said that the practitioner should demand the employment of the Röntgen method of diagnosis by a Röntgenologist whose ability and experience fitted him to make diagnoses by its aid which the practitioner himself could not make. He should demand not only a technique in handling apparatus and in making an accurate Röntgenogram, but also an experience and an education in this particular method of diagnosis above his own, that fitted the diagnostician to render a more valuable diagnosis than the practitioner could make with the same data. Anatomy, viewed from the Röntgenogram, was entirely different from its expression from any other view. Pathological anatomy was likewise very different, and its interpretation demanded an experience and study that could only be secured by those devoting time to it. Dr. Leonard had seen a sessamoid bone in the flexor longus pollicis described in the *British Medical Journal* by a prominent London surgeon as an exostosis, and the shadow of the patella called an ossifying osteitis by a member of the American Surgical Association. Such mistakes should now be impossible to a tyro in Röntgenology. Dr. Leonard quoted Sir William Bennett as saying that "the first essential in all cases of sprain is to determine whether fracture coexists, which can readily be done by the x rays when they are available; it should, indeed, be an accepted practice that, when possible, every sprain, especially those near joints, should be examined by the x rays. In the event of the x rays being unobtainable, it is wise to regard any case in which the symptoms of sprain near a joint are unduly exaggerated as being complicated by fracture, especially if the parts concerned be the phalanges of the fingers or the metacarpal region. . . . The frequent overlooking of bone lesions in so called sprains seems to be greatly due to the fixed idea on the part of many people that crepitus is a necessary symptom of fracture, and that absence of crepitus means absence of fracture, a sadly mistaken belief, inasmuch as, it need hardly be said, fracture often occurs in circumstances in which the detection of crepitus is impossible. On the other hand, crepitus after injury, especially if near a joint, may be elicited when no fracture is present. I have seen several cases of injury near joints in which fracture has been either diagnosed or strongly suspected on the strength of crepitus resulting from osteoarthritis in the adjacent articulation."

Dr. MIHRAN K. KASSABIAN exhibited a very large number of lantern slides. In the vast majority of these cases diagnosis by the x rays was the only means of distinguishing rare, obscure, and simulating conditions, such as fractures and epiphyseal separations and displacements, from dislocations. Other slides depicted osseous diseases (osteitis and periostitis), tumors of the bones, detachment of the ligaments and muscles, diseases of the joints, congenital dislocation of the hip joint, etc. A number of slides exhibited tumors of the trachea and of the vocal cords, while several more showed pulmonary tuberculosis and aneurysms of the heart and aorta. A slide was shown depicting aneurysm of the innominate artery, which was confirmed at autopsy.

Some Applications of the Roentgen Rays in Dermatology.—Dr. RUSSELL H. BOGGS, of Pittsburgh, made a plea for a more conservative use of the Röntgen rays in dermatology. Successful application of the rays was said to be dependent upon the ability of the operator to decide whether Röntgen treatment was the best available method, and then upon his ability to give the dosage necessary to produce the desired physiological action. The suggestion was made that if every operator would first learn the action of the rays by making radiographs of the more difficult portions of the body, results would be more uniform.

Since the rays were only indicated in certain lesions, and should not be employed in a routine manner, each case should be carefully studied and then the method of treatment decided upon.

In the treatment of chronic eczema, stubborn cases of acne, psoriasis, keloid, and lupus vulgaris, Dr. Boggs had found the Röntgen method efficient. As an epilatory agent the method was superior to any other in the treatment of parasitic diseases, such as favus, sycosis, and blepharitis. Considering the large amount of ringworm and favus among school children in the poorer districts, and the failure of prophylactic measures to prevent their spread, it seemed almost imperative that these cases should have x ray treatment by an experienced operator. The danger was pointed out of having the rays applied by resident physicians, nurses, or engineers.

Radiotherapy in the Treatment of Malignancy.—Dr. GEORGE C. JOHNSTON, of Pittsburgh, considered malignancy in the abstract as a condition of cell anarchy, expressed thereby the total disregard of the individual cells for physiological law. This disregard was shown by the invasion of new territory and by remarkable multiplication. These new cell formations possessed low resistance and poor reparative power, and, when exposed to a dose of x ray, underwent tissue death. It was shown that in the treatment of internal growths failure frequently occurred because, in spite of every device, an undesirable surface effect was produced before the deepest portions of the growth had received sufficient x rays. There was pointed out the constantly successful results in superficial malignant conditions in qualified hands, and here the greatest value of the x ray was shown in those conditions less favorable for successful surgical removal, such as epitheliomas in and about the alæ of the nose, on and about the eyelids, and about the eyes. The treatment of carcinoma in the hands of certain operators was said to have cast much discredit upon the method, hundreds of absolutely unsuitable cases having been submitted to the x ray by inexperienced physicians. While he maintained it as true that many primary circumscribed carcinomas had been successfully treated by x rays alone, yet he regarded the wisdom of such treatment as doubtful, believing it better to combine surgery and the x ray, submitting the patient to a series of anteoperative radiations followed by extirpation of all infected tis-

sue, and this again followed by a series of postoperative radiations. The objections that had been advanced to anteoperative radiations were theoretical only, and he believed that an experienced surgeon would find no difficulty in operating on a patient who had been exposed to the x ray.

Dr. G. E. PFAILER showed lantern slides of about forty-five cases, the most remarkable among which was one of very malignant sarcoma involving the soft tissues at the angle of the jaw in a young man of twenty years. The tumor developed to the size of an "apple" in three weeks, when it was removed surgically. In three weeks it had again developed to its original size and was again removed surgically. On the fifth day after the second operation a photograph was taken, when the tumor had recurred and had reached the size of a hen's egg. He was then placed under very active x ray treatment, and after twenty treatments and two months' time the tumor had entirely disappeared and he was still well a year later, as was shown by a second photograph. With Dr. Boggs, he believed that the x ray was a most powerful therapeutic agent, but that as much skill was needed in its application as in any other special field of medicine, good results depending upon good technique.

Dr. JAY F. SCHAMBERG said that the effect of the Röntgen rays upon tissues varied according to the intensity of the irradiations. The following effects were detailed: 1. The earliest effect was local stimulation or an enhancement of the vitality of the tissue. The rays doubtless altered cellular chemistry by the influence of electrified ions upon protoplasm. In the treatment of skin diseases, the cutaneous tissues were reinforced against bacterial invasion and strengthened against pathological influences from within. It was upon such grounds that the favorable action in eczema and certain other inflammatory diseases might be explained. 2. A further effect of the x rays was to produce atrophy of the more highly specialized elements of the skin. This action was utilized in the treatment of acne, sycosis, hypertrichosis, excessive sweating, etc. In acne the rays were the most important therapeutic measure. The best results, however, were obtained when no single method of treatment was exclusively relied upon. It was pointed out that some cases required dietetic and internal treatment as well as local measures. A most important part of the treatment in many cases was the systematic expression of the black heads, or sebaceous plugs, in the follicular ducts. 3. The x rays, if used sufficiently long or in sufficient strength, caused a degeneration of the cells, resulting in necrosis. 4. The x rays exerted an analgetic influence upon the skin and frequently relieved itching. 5. The x rays were also valuable in producing depilation and the extrusion of fungus, and thereby exerted a curative effect in such cases as ringworm and favus of the scalp.

In quite an extensive experience Dr. Schamberg had never observed toxemia to result from x ray treatment, despite the fact that a number of his patients had had gout and others damaged kidneys. It was to be remarked, however, that his treatment had been directed toward superficial conditions and had not as a rule been intended to produce tissue necrosis.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting, December 17, 1906.

The President, Dr. T. E. SALTERTHWAITE, in the Chair.

Modern Obstetric Technique.—In this paper, which was read by Dr. GEORGE L. BRODHEAD, the author passed in rapid review almost the entire field of obstet-

rics, including the more serious operations. In speaking of normal labor he considered the preparation of the patient, of the accoucheur, and of the lying-in chamber. The patient should be given a full bath, preferably of the shower variety, and the pubic hair should be clipped close or shaved off, after which the genital region should be thoroughly cleansed with an antiseptic. For the past few years he had employed Stewart's method of using warm water to which acetic acid and chlorinated lime have been added. The vaginal douche should not be used as a routine procedure, on account of the danger of introducing germs. The bladder should be emptied frequently during the course of the labor, and the bowels should be thoroughly evacuated by a cathartic, followed by an enema. In the second stage sterile stocking drawers should be worn, and the abdomen be covered with a sterile towel. The accoucheur, in preparing his hands and arms, made use of one of the well known methods for hand disinfection, and of these the use of chlorine was the most effective. For this, two teaspoonfuls of chlorinated lime and one teaspoonful of acetic acid were added to a quart of warm water. The hands and arms were first scrubbed for five minutes with warm water and green soap, the nails were cleaned with powdered pumice stone, and then the hands and arms were immersed for from one to two minutes in the chlorine solution. A sterile gown and rubber gloves should then be worn, and great care exercised to avoid contamination (of the gloves, especially), by touching the bed clothes, etc. The ideal room for confinement, with bare walls, woden floors, and a narrow iron bedstead, was rarely met with in a patient's home; so that in private practice we must try to eliminate, as far as possible, the detrimental features. A large, bright room, with good ventilation, should be selected, and after all unnecessary draperies, furniture, etc., had been removed, it should be thoroughly cleaned. Sheets, towels, and solutions should be sterile, and during the stage of expulsion the patient should preferably rest upon a large sterile pad—not a Kelly pad, which it was almost impossible to sterilize. The mattress should be firm, but if such was not available, the leaves of a table, placed crosswise on the bed, should be employed. In the management of forceps and breech cases delivery upon a table was preferable.

During labor vaginal examinations should be made as infrequently as possible, and then only with the greatest care. The membranes should be allowed to remain intact until full dilation had occurred. For delivery Dr. Broadhead preferred the dorsal position. During the stage of expulsion rapid advance should be checked by the use of chloroform and by pressure upon the head with one hand, while with the index finger and thumb of the other hand pressure was made against the upper portions of the labia majora. The head should be kept well up under the pelvic arch, but no pressure be made upon the perinæum. It should always be borne in mind that in vertex cases the danger of laceration was not over until the forehead slipped over the latter. If the cord was around the neck, it should be slipped over the head if possible, but if the effort to do this, or to slip it over the shoulders, failed, the cord should be clamped and cut. At the end of fifteen or twenty minutes after the birth of the child the patient was encouraged to expel the placenta voluntarily, but if her efforts were unsuccessful the Credé method was employed. If there was hæmorrhage, a douche was given, and unless there was some special reason for delay, such as exhaustion, lack of proper light or assistance, etc., laceration of the soft parts was repaired immediately. The speaker sutured the cervix only in the event of hæmorrhage. Episiotomy in properly selected cases, where there was need of haste or

when the head was large and the perinæum began to tear when there was but little distention of the vulva, was an operation which deserved a distinct place in obstetric technique. It was so easy of performance and attended with such good results that it would seem that it ought to be resorted to more frequently than was now the case.

In all forceps cases except the simplest ones the operation should be done with the patient upon a table. Preparatory to all forceps work the cervix should be fully dilated or dilatable, the membranes should be ruptured, the position of the head determined, and the bladder and rectum emptied. In using the high forceps, especially in the presence of deformed pelvis, the Walcher position was of distinct advantage. The axis traction forceps, particularly in the difficult cases, would afford better results than the ordinary varieties of the instruments, for the reason that with this the extraction could be effected more easily and with consequently less injury to the child. If the forceps blades should slip, the operator, appreciating the danger of intracranial hæmorrhage, should use a different style of instrument and seize the head in a different diameter, or else resort to podalic version. In the low forceps operation the best results were to be obtained by using an instrument with solid blades. The rest of the paper was devoted to a condensed consideration of version, craniotomy, the induction of premature labor, accouchment forcé, Cæsarean section, vaginal Cæsarean section, and symphysiotomy and hebotomy.

The Urine in Pregnancy.—This paper was by Dr. F. E. SONDERN. Recent advances in the chemical investigation of the urine in pregnancy, he said, had resulted in new data of value to the obstetrician, as an aid in his work and in the correction or, more properly speaking, modification of views previously held. As in general medicine, the presence of albumin, alone or associated with casts, was no longer the bugbear it formerly had been, as we now knew that it did not necessarily mean an inflammatory lesion of the kidney. In comparatively slight disturbances in the circulation or the innervation of the organ or in the quality of its blood supply, it might, in consequence of the derangement of its function resulting, pass larger or smaller amounts of albumin with or without casts. Recent investigations had shown that in approximately fifty per cent. of pregnant women albumin appeared in the urine at some time during pregnancy. The numerous possible causes of albuminuria made the diagnosis by no means an easy matter, and the apparently physiological retention of nitrogen toward the close of uterogestation added another difficulty. Laboratory research indicated a diagnosis only in the severe cases of true nephritis, but in those of a mild type, or when there was merely a disturbance of function, the analysis of the urine was simply an aid. It might, however, disclose evidence of a possible causative factor of such disturbance. While the periodical examination of the urine in pregnancy for specific gravity, albumin, sugar, and casts, no longer met the exacting demands of present day diagnostic methods, on the other hand, no specified change from the normal in any respect could be accepted as a prime indicator for drastic therapeutic measures or operative procedure, though oftentimes a material help in concluding the existing necessity for such.

The demonstration in general that what was known as intestinal autointoxication was a cause of a distinct train of symptoms, and often explained other obscure manifestations, was now a recognized fact. When it was recalled with what facility disturbances of the gastrointestinal tract were occasioned in pregnancy, and that the experience that intestinal autointoxication frequently seemed to be the forerunner of the toxæmia

of pregnancy, if not more closely allied in the etiology, the necessity for early diagnosis of this condition was evident. The laboratory aid in such diagnosis was important, and its main feature was the recognition of a relative excess of etheral sulphates in the urine. In the pyelitis of pregnancy the urine presented the same typical picture noted in pyelitis in general, with the almost invariable presence of a decided bacteriuria, which on investigation was usually found to be due to bacilli of the colon group. Transitory glycosuria was not worthy of special note, except that it frequently accompanied other faulty metabolism which might demand attention. In women suffering from regular diabetes approaching parturition called for the same attention as a contemplated surgical procedure, and this should be directed toward the avoidance of an acidosis, rather than solely to the reduction in the amount of glucose excreted.

The comparatively recently expounded belief that some of the minor as well as major disturbances in pregnancy were the result of toxæmia had necessitated a reclassification (still in a somewhat unsettled state) of these disorders by the clinician, and had likewise led to a diligent search for the actual causative factors, with no practical result as yet. The urine was looked to for the purpose of finding the causative toxine itself, or evidences which would indicate the existence of an accompanying faulty metabolism. While, as stated, the search for the actual causative element had as yet been ineffectual, the evidences of an accompanying faulty metabolism had been found. Having discussed this point more fully, Dr. Sondern went on to say that continued experience in the analytical work in connection with these cases seemed to point to the practical conclusion that the routine examination of pregnant women's urine should include a search for evidences of faulty intestinal metabolism, so that this apparently predisposing factor might receive early attention.

Book Notices.

Atlas and Textbook of Human Anatomy. By Dr. JOHANNES SOBOTTA, Professor of Anatomy in the University of Würzburg. Edited, with Additions, by J. PLAINFAIR McMURRICH, A. M., Ph. D., Professor of Anatomy in the University of Michigan. Volume I: Bones, Ligaments, Joints, and Muscles. With 320 Illustrations, Mostly in Colors. Pp. 258. Volume II: The Viscera, Including the Heart. With 214 Illustrations, Mostly in Colors. Pp. 194. Philadelphia: W. B. Saunders Company, 1906. (Price, \$6 a volume.)

The German edition of this work consisted of two separate parts, the first volume being an atlas and the second a textbook. Professor McMurrich has very advantageously changed this arrangement and combined the two parts in such a form that the illustrations are accompanied by the text. But the division of the circulatory system into two parts (the heart in Vol. II, the vessels in Vol. III) we cannot regard as judicious.

The translation from the German has been admirably done by Dr. W. Hersey Thomas. The nomenclature employed is essentially that proposed by the Basle Committee on Anatomical Nomenclature, the terms being, however, for the most part Anglicized, with the exception of those in the section on myology, where the Latin terms have been retained throughout. But where terms unfamiliar to the English speaking student of anatomy are used, the older or more familiar terms have been added parenthetically.

Of great advantage is the adoption of a number of

colors for different bones in topographical views, a particular bone always being represented by the same color, for example the palate bone in blue the ethmoid in orange, etc. Furthermore, a tint color has been employed for the bone in the pictures of the joint and muscles. The coloring is excellent—the reddish brown tint of the muscle, the grayish silver of the tendons, etc. Some of the illustrations are given twice, once in colors and again plain as a diagram with the onomatology, a very good method.

The Diagnosis of Nervous Diseases. By PERVE STEWART, M. A., M. D., F. R. C. P., Physician to Out-Patients at the Westminster Hospital; Joint-Lecturer on Medicine in the Medical School; Physician to the Royal National Orthopaedic Hospital, etc. London: Edwin Arnold, 1906. Pp. xi+380. (Price, \$4.20.)

This is an excellent manual; it has the great advantage that the clinical point of view is maintained throughout, and it constitutes not only a guide in diagnosis, but in reality a small and compact yet authoritative treatise on nervous diseases. The work is cast in the lecture form, which makes it a readable one.

Anatomical and physiological considerations are presented in the first three chapters. Only the more essential features are given. Then follow chapters on coma, fits and convulsive phenomena, involuntary movements, aphasia and disorders of articulation, cranial nerve lesions, pain and other abnormal subjective sensations, abnormalities of sensation, organic paralyses, transient paralyses, incoordination, postures, gaits, reflexes, sympathetic nervous affections, hysteria, electrodiagnosis and prognosis, and the cerebrospinal fluid.

The work is well illustrated and will undoubtedly serve as an extremely useful manual. It is practically the best work of its kind in English at the present time.

Handbuch der Urologie. Herausgegeben von Dr. ANTON V. FRISCH, und Dr. OTTO ZUCKERKANDL, unter Mitwirkung von Professor Dr. E. BURCKHARDT, Hofrat Professor Dr. S. EXNER, Professor Dr. E. FINGER, Professor Dr. A. V. FRISCH, Professor Dr. L. V. FRANK HOCHWART, Privatdozent Dr. H. KOEFTE, Privatdozent Dr. R. KRAUS, Professor Dr. J. MANNABERG, Professor Dr. J. MAUTHNER, Privatdozent Dr. P. WAGNER, Professor Dr. A. v. WINIWARDER, Professor Dr. M. v. ZEISSL, Hofrat Professor Dr. E. ZUCKERKANDL, Privatdozent Dr. O. ZUCKERKANDL. Mit zahlreichen Abbildungen und Tafeln in Schwarz- und Farbendruck. Band III. Abteilung XII, XVIII. Wien: Alfred Holder, 1905-1906. Pp. 1043. (Price, 36 marks.)

The third and last volume of this truly monumental work, modestly called a handbook by its editors, marks the completion of a task begun in 1904 with the appearance of the first fascicles of Vol. I. We will take occasion to repeat here that the work, in conception, scope, and execution, is by far the most complete work on urology that has ever been published in any language. It consists of separate sections systematically edited into a single treatise, each section being a monograph by a prominent authority, giving the historical and bibliographical data appertaining to its theme. The first volume dealt with prolegomena, with anatomy, physiology, methods of diagnosis, and symptomatology. The second was devoted to the kidneys, the ureters, and the bladder, both medical and surgical diseases being dealt with. The third volume, which lies before us, presents the surgical affections of the urethra, by Professor E. Burckhardt, of Basle, the venereal diseases of the urethra and the penis, by Professor Maximilian von Zeissl, of Vienna; the surgical diseases of the penis,

the testes, and the scrotum, by Professor A. von Winivarter, of Lüttich; the diseases of the prostate, by Professor A. von Frisch, of Vienna; and the functional sexual disorders in man, by Professor E. Finger, of Vienna.

With such an array of names it is not to be wondered at if the present volume forms a fitting companion to its two predecessors. The policy announced at the start, of making the clinical side of the subject most prominent, has been adhered to, and the book is not only a thoroughly scientific, but also a very practical treatise on urology. Naturally, it is also thoroughly up to date, and we find such new topics discussed as the latest operations for hypertrophied prostate and the Röntgen ray treatment of this affection. American surgeons, for once, have been given full credit in this book, and such names as Otis, Fuller, Guiteras, Keyes, Swinburne, Klotz, Morrow, etc., are cited—to mention but a few of the New York names.

Von Zeissl's section on gonorrhœa is virtually a revised edition of his already well known book, *Diagnose und Behandlung der venerischen Erkrankungen*. The section on the prostate is especially complete from every viewpoint, while that on surgical urethral diseases is one of the best in literature, including, for instance, a chapter on the effect of bicycle riding on the urethra.

The publishers have given the volume a dress which befits its dignity, and the colored plates, dealing principally with urethroscopic images, are remarkably life-like. There can be no hesitation in recommending the book to every specialist in urology and to every practitioner who is interested sufficiently in this subject to study it with the thoroughness of a specialist.

Die Tuberkulose der menschlichen Gelenke sowie der Brustwand und des Schädels. Nach eigenen Beobachtungen und wissenschaftlichen Untersuchungen von Professor Dr. FRANZ KÖNIG (Berlin). Mit 90 Textfiguren. Berlin: August Hirschwald, 1906.

This contribution of Professor König's to the literature of tuberculous disease of the bones and joints appears to us to be of most value in its discussion of pathology. As regards treatment, the work is written too exclusively from the view point of the operative surgeon to be a safe guide. We are obliged to protest emphatically against the general adoption of the extensive and mutilating operations which he advises, especially in the case of children, for whom they are very rarely if ever necessary. The excellent results obtained by the application for a sufficient length of time of suitable apparatus, to secure rest and protection for the diseased joint, demonstrates that conservative orthopædic treatment is far more rational and successful and more in accordance with modern views regarding tuberculous disease in general. The tendency of surgeons is almost uniformly to underestimate the difficulty of removing all sources of local tuberculous disease, and in their incomplete operations healthy tissues are often invaded and sacrificed, such as ligaments and cartilages and epiphyses necessary to the maintenance of the function and future growth of the limb. Even in suppurative cases it is often astonishing what the *vis medicatrix nature*, if assisted by good hygiene and prosthetic appliances, will accomplish in restoring a limb condemned by the general surgeon to operation. Operations on suppurating foci rarely extirpate the disease, and are frequently a cause of mixed infections with tedious sinuses and exhausting discharges, or they may open up fresh channels of infection and result in a tuberculous meningitis or acute miliary tuberculosis. As was formerly true of many pulmonary cases, patients with bone and joint tuberculosis now often suffer from too energetic and improper treatment. It is fast being generally recognized that at present our best

means of combating tuberculous disease, wherever situated, are early diagnosis, rest, fresh air, and good nutrition.

BOOKS, PAMPHLETS, ETC., RECEIVED.

The Practitioner's Medical Dictionary. An Illustrated Dictionary of Medicine and Allied Subjects. By George M. Gould, A. M., M. D.. Philadelphia: P. Blakiston's Son & Co., 1907.

Hygrometry. By Henry Emerson Wetherill, M. D., Lt. Jr. Grade, Surgeon and A. I. R. P., N. F. Pa. Fourth Edition. Published and Illustrated by the Author.

Elements of Practical Medicine. By Alfred H. Carter, M. D., M. Sc., Fellow of the Royal College of Physicians, London, etc. Ninth Edition. London: H. K. Lewis, 1906.

The Bacteriological Examination of Water Supplies. By William G. Savage, B. Sc., M. D. (Lond.), D. P. H., Medical Officer of Health and Public Analyst, Colchester, etc. London: H. K. Lewis, 1906.

Annual Report of the Board of Regents of the Smithsonian Institution. Showing the Operations, Expenditures, and Condition of the Institution for the Year Ending June 30, 1905. Washington: Government Printing office, 1906.

Transactions of the American Association of Obstetricians and Gynecologists. Vol. XVIII., for the year 1905.

The Practice of Gynecology. For Practitioners and Students. By William Easterly Ashton, M. D., LL. D., Fellow of the American Gynecological Society, etc. Third Edition. Philadelphia: W. B. Saunders Company, 1907.

A Compend on Bacteriology, Including Animal Parasites. By Robert L. Pitfield, M. D., Pathologist to the Germantown Hospital, Philadelphia, etc. Philadelphia: P. Blakiston's Son & Co., 1907.

Archives of the Middlesex Hospital. Volume IX. London: Macmillan & Co., Limited, 1906.

National Association for the Study and Prevention of Tuberculosis. Transactions of the Second Annual Meeting, held in Washington, D. C., May 16 to 18, 1906.

The Muscles of the Eye. By Lucien Howe, M. A., M. D., Professor of Ophthalmology in the University of Buffalo, etc. In Two Volumes. Volume I., Anatomy and Physiology, Including Instruments for Testing and Methods of Measurement. Illustrated. New York: G. P. Putnam's Sons, 1907.

The Diagnosis and Treatment of Intussusception. By Charles P. B. Clubbe, Hon. Surgeon to the Royal Prince Alfred Hospital, etc. London: Young J. Pentland, 1907.

Miscellany.

Jamaica Earthquake.—In a letter to his firm, Parke, Davis & Co., under date of Kingston, January 15th, their representative, George C. Frolich, gives details of his miraculous escape from death in the destruction of the city, and we are enabled to print extracts from this letter, as follows: "How I escaped unharmed through yesterday's inferno cannot be explained. I was interviewing a doctor at the time the first shock of earthquake was felt. Instantly I saw the doctor's wife, sister, or female relative crushed to death before my eyes; the doctor himself was buried in a mass of debris from the falling house, which must have weighed ten tons. Although the brick dwelling collapsed in a heap, I was only injured slightly. The only things I was able to save were my records and catalogues, my sample cases and trays being buried in the ruins of the Myrtle Bank Hotel. I extricated seven bodies, and fighting my way through hundreds of crazy savages for a mile in the direction of the hotel, I reached it in time to aid the American ladies and the injured. On the way it was terrible to hear the cries of hundreds of injured calling for death or relief from their sufferings, while mothers implored passers-by to dig out their children from the ruins. Here and there a limb would be seen sticking out from among the debris, or a head with glassy staring eyes. The flames added terror to the scene, and the injured bleeding from wounds could be seen, either running around in agony or sitting in utter despair." In a subsequent letter Mr.

Frohch said: "The hasty letter I sent this morning was written in the mountains and was mailed aboard the boat after six miles of travel through chaos and misery. The city is a complete ruin; all our drug friends have suffered dreadfully and many of the doctors have lost their lives. The calamity seems to grow in horror as fresh news is received. The number of the dead cannot be estimated. Fighting my way this morning through fire, débris, live wires, and drunken negroes on Harbour Street for the short distance of two blocks, I counted twenty-two charred bodies, partly buried beneath the walls of fallen houses. Many bodies are covered with grass and taken out in lighters for a sea burial."—Through the *American Druggist and Pharmaceutical Record*.

Penal Reform.—A report was made at the recent Lisbon Congress of Medicine, which exposes Van Hamel's views as to the aims which should guide the administration of penal reform. Summarized in the *Journal de neurologie*, they are as follows: Penal reform should have as its aim, the diminution of crime. This is an end at once practical and realistic, and should not have as its point of departure any dogmatic religious, philosophical, or æthical system. The object should be to decrease the number of criminals, not to increase the number of those punished. The combat against crime should be regulated by scientific study of its causes—criminal ætiology. These causes are general and personal. The general causes are mainly social, the personal causes, anthropological. Penal justice should dispense measures of social education to corrigible, measures of social protection to incorrigible criminals. The distinction between young and adult criminals is of less value than one based upon psychological state, social needs, and to what extent they are a danger to the community. Much latitude should be left to the judge in the choice between a number of educational and protective measures. In order to assist him to make a proper choice, a psychiatric service should be attached to each tribunal and to each correctional establishment. A great stumbling block is the divergence between legal and medical views as to what constitutes criminal responsibility. The legal division of criminals into the two classes of responsible and irresponsible is fallacious and should be abolished. In the study of the individual there should be noted especially psychical state, dangerousness and whether probably corrigible or incorrigible. The testimony of the trained physician should form a part of each criminal procedure, though examination by him is not necessarily indicated in every case. Two elements should decide whether his services are needed or not: (1) The nature of the act of the individual; and (2) the nature of the correctional measures whose application is under consideration by the tribunal.—Through *The Journal of Nervous and Mental Disease*.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending February 15, 1907:

Smallpox—United States.			
Places.	Date.	Cases.	Deaths.
Connecticut—Stamford	Jan. 131	1	
Georgia—Augusta	Jan. 29-Feb. 5	2	
Illinois—Galesburg	Jan. 26-Feb. 9	26	
Indiana—Indianapolis	Jan. 27-Feb. 3	3	
Indiana—La Fayette	Feb. 4-11	6	
Indiana—South Bend	Jan. 26-Feb. 9	5	
Iowa—Clinton	Jan. 27-Feb. 3	1	
Kansas—Kansas City	Feb. 2-9	1	

Louisiana—New Orleans			
Jan. 28-Feb. 1	3		
Michigan—Detroit	Feb. 2-9	2	Imported
Michigan—Kalamazoo	Jan. 26-Feb. 2	2	
Missouri—St. Joseph	Jan. 26-Feb. 2	30	
Missouri—St. Louis	Jan. 26-Feb. 11	3	
New York—New York	Jan. 26-Feb. 9	3	1
South Dakota—Sioux Falls	Jan. 26-Feb. 2	2	
Texas—Houston	Jan. 12-Feb. 2	11	
Washington—Spokane	Jan. 10-Feb. 2	11	
Wisconsin—La Crosse	Feb. 2-9	1	
Wisconsin—Milwaukee	Jan. 19-Feb. 5	14	
S. Cape, Foreign			
Africa—Cape Town	Dec. 15-22	1	
Brazil—Pernambuco	Dec. 15-31	48	
Brazil—Rio de Janeiro	Dec. 30-Jan. 6	1	
Canada—Sherbrooke	Feb. 5-12	4	
China—Hongkong	Dec. 1-22	3	
China—Shanghai	Dec. 23-30	1	
France—Paris	Jan. 12-19	14	1
Great Britain—Hull	Jan. 12-19	2	
India—Madras	Dec. 15-21	2	
Netherlands—Rotterdam	Dec. 19-26	5	
Russia—St. Petersburg	Dec. 27-Jan. 2	6	
Spain—Seville	Dec. 1-11	40	
Y. Fever, Foreign			
Africa—Senegal and Niger	Nov. 1-30	35	26
India—Rangoon	Feb. 8-15	1	Imported
Cholera, Foreign			
India—Bombay	Jan. 1-8	4	
India—Rangoon	Dec. 22-29	23	
Plague, Foreign			
Brazil—Pernambuco	Dec. 15-31	1	
Brazil—Rio de Janeiro	Dec. 30-Jan. 6	20	5
India—Bombay	Jan. 1-8	26	
India—Rangoon	Dec. 22-29	23	
Peru—Callao	Jan. 5-12	2	1
Peru—Chilayo	Jan. 1-12	5	5
Peru—Mollendo	Jan. 1-12	1	1
Peru—Punta, city and vicinity	Jan. 1-12	6	
Peru—San Pedro and Pácora	Jan. 1-12	1	
Peru—Mayo	Jan. 1-12	10	4
Peru—Trujillo	Jan. 1-12	14	5

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending February 14, 1907:

- ALLEN, G. C., Pharmacist. Directed to report to Surgeon W. G. Stimpson, chairman of the board, for physical examination to determine his fitness for promotion to grade of pharmacist of the first class.
- ASHFORD, F. H., Assistant Surgeon. Granted leave of absence for one day in January, 1907, under Paragraph 191, Service Regulations.
- BOGESS, J. S., Passed Assistant Surgeon. Upon the return of Assistant Surgeon E. H. Mullen, relieved from temporary duty at Perth Amboy, N. J., and directed to report to the Medical Officer in command, Stapleton, N. Y., for duty and assignment to quarters.
- COFER, L. E., Passed Assistant Surgeon. Relieved from temporary duty at Ellis Island, N. Y., effective February 23rd; granted leave of absence for sixteen days, beginning February 4th; directed to proceed to Coatzacoalcos and Salina Cruz, Mexico, and San Francisco, Cal., for special temporary duty, upon completion of which to rejoin his station at Honolulu, Hawaii.
- DELGADO, J. M., Acting Assistant Surgeon. Granted leave of absence for thirty days, on account of sickness, from January 1, 1907.
- FOSTER, S. B., Acting Assistant Surgeon. Granted leave of absence for eleven days, from February 9, 1907.
- GLASCOCK, A., Acting Assistant Surgeon. Granted leave of absence for one day in January, 1907, under Paragraph 210, Service Regulations.
- GLOVER, M. W., Passed Assistant Surgeon. Granted five days' leave of absence in January, 1907; order granting leave of absence for one month from January 12, 1907, amended to be effective from January 23, 1907.
- GOLDSBOROUGH, B. W., Acting Assistant Surgeon. Granted leave of absence for fourteen days, from February 4, 1907.
- KENNARD, K. S., Acting Assistant Surgeon. Granted leave of absence for one day in January, 1907, under Paragraph 210, Service Regulations.
- MILLER, W. W., Assistant Surgeon. Granted leave of absence for one day in January, 1907, under Paragraph 191, Service Regulations.

MONCURE, J. A., Acting Assistant Surgeon. Granted leave of absence for thirty days, from February 10, 1907.

ROGERS, EDWARD, Pharmacist. Directed to report to Surgeon P. H. Bailhache, chairman of the board, for physical examination to determine his fitness for promotion to the grade of pharmacist of the first class.

SALMON, T. W., Assistant Surgeon. Granted leave of absence for two days in January, 1907, under Paragraph 191, Service Regulations.

WETMORE, W. O., Acting Assistant Surgeon. Granted leave of absence for six days in January, 1907, under Paragraph 200, Service Regulations.

WHITE, J. H., Surgeon. Directed to proceed to Jump Point, La., for special temporary duty, upon completion of which to rejoin station at New Orleans, La.

WILSON, J. G., Acting Assistant Surgeon. Granted leave of absence for two days in January, 1907, under Paragraph 210, Service Regulations.

WOODS, C. H., Pharmacist. Granted leave of absence for thirty days, from January 7, 1907, on account of sickness.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending February 16, 1907:

BROWN, O. G., First Lieutenant and Assistant Surgeon. Granted leave of absence for two months and twenty days.

BUCK, CARROLL D., Captain and Assistant Surgeon. Having completed the duty for which he was ordered to this city, will return to his proper station, Army General Hospital, Presidio of San Francisco, Cal. Granted twelve days' leave of absence.

DESHON, GEORGE D., Major and Surgeon. Detailed a member of the Army Retiring Board to meet at Omaha, Neb., vice John M. Banister, Lieutenant Colonel and Deputy Surgeon General, hereby relieved.

DEVEREUX, J. R., Captain and Assistant Surgeon. Resignation of his commission as an officer of the Army has been accepted by the President, to take effect on June 30, 1907.

GREGORY, JULIUS C., First Lieutenant and Assistant Surgeon. Relieved from temporary duty at the Presidio of Monterey, Cal., and ordered to proceed to San Francisco, Cal., and take station at that place, resuming his duties in the Army Transport Service.

HEARD, GEORGE P., Major and Surgeon. Leave of absence extended thirty days.

KREBS, LEON L. R., First Lieutenant and Assistant Surgeon. Granted five days' leave of absence.

MAUS, LOUIS M., Lieutenant Colonel and Deputy Surgeon General. Ordered to inspect all posts in the Department of Texas.

RECH, EDWIN W., First Lieutenant and Assistant Surgeon. Appointed a member of the examining board to meet at Madison Barracks, New York.

WILSON, CEMRON, First Lieutenant and Assistant Surgeon. Resignation of his commission as an officer of the Army has been accepted by the President, to take effect February 15, 1907.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending February 16, 1907:

HESTER, G. G., Assistant Surgeon. Ordered to additional duty at the Naval Proving Ground, Indian Head, Md.

SHREVEPORT, L. H., Acting Assistant Surgeon. Detached from the *Celie*, when that vessel is placed out of commission, and ordered to the Naval Hospital, Norfolk, Va.

Births, Marriages, and Deaths.

Born.

McLEAN.—In Boston, on Thursday, January 24th, to Dr. N. T. McLean, United States Navy, and Mrs. McLean, a daughter.

Married.

MCKINLEY—SEARSON.—In Hampton, South Carolina, on Friday, January 28th, Dr. Frank James McKinley and Miss Kathryne Dexter Searson.

SANGER—DRUMMOND.—In East Orange, N. J., on Monday, February 11th, Dr. Frank Whiting Sanger and Miss Viola Elizabeth Drummond.

TOBIN—MATTINGLY.—In Washington, D. C., on Tuesday, February 7th, Dr. Richard F. Tobin and Miss Mary Mattingly.

TUTTLE—MOREAU.—In New York, on Wednesday, February 6th, Dr. Lamar R. Tuttle and Miss Marie Evelyn Moreau.

Died.

BARNACASTLE.—In Shreveport, Louisiana, on Friday, February 8th, Dr. H. H. Barnacastle, of Haughton, aged forty-one years.

BECK.—In Chicago, on Thursday, February 7th, Dr. John C. Beck, aged thirty-eight years.

DENNY.—In Washington, Pennsylvania, on Friday, February 1st, Dr. William Denny, aged fifty-two years.

DONNELLY.—In Worcester, Massachusetts, on Friday, February 8th, Dr. William H. Donnelly, aged twenty-seven years.

FRANZ.—In Waynesboro, Pennsylvania, on Friday, February 1st, Dr. E. Franz, aged eighty-three years.

GAFFNEY.—In Salem, Massachusetts, on Saturday, February 9th, Dr. Henry Joseph Gaffney, aged fifty-nine years.

GAUDET.—In Convent, Louisiana, on Thursday, February 7th, Dr. Oscar Gaudet, aged sixty-eight years.

GROVE.—In Kansas City, Missouri, on Friday, February 8th, Dr. George Wasson Grove, aged fifty-four years.

HANATH.—In Great River, Long Island, on Thursday, February 7th, Dr. William Wyatt Hanath.

HOLLISTER.—In Mount Vernon, N. Y., on Sunday, February 10th, Dr. John Quincy Adams Hollister, aged sixty-nine years.

KENNEDY.—In Muskegon, Michigan, on Wednesday, February 6th, Dr. William E. Kennedy.

LEATHERMAN.—In Frederick, Maryland, on Friday, February 8th, Dr. M. E. Leatherman, of Washington, D. C., aged fifty-seven years.

LEVI.—In New Albany, Indiana, on Saturday, February 9th, Dr. Louis D. Levi, aged forty-seven years.

LOUGEST.—In South Franklin, Massachusetts, on Tuesday, February 12th, Dr. Charles Albert Lougest, of Boston, aged sixty-eight years.

LUDLAM.—In Chicago, on Saturday, February 9th, Dr. Edward M. P. Ludlam, aged sixty-seven years.

LUNG.—In Brooklyn, on Saturday, February 9th, Dr. Jesse Brown Lung, aged sixty-nine years.

MCDUGALL.—In Jamaica Plain, Massachusetts, on Friday, February 8th, Dr. Samuel A. McDougall, aged seventy-six years.

MERWIN.—In Kansas City, Missouri, on Saturday, February 9th, Dr. E. H. Merwin, aged thirty-eight years.

MILLER.—In Williamsport, Pennsylvania, on Saturday, February 2nd, Dr. William H. H. Miller, aged eighty-two years.

NEWTON.—In Chicago, on Saturday, February 9th, Dr. George W. Newton, aged forty-six years.

STRACHIN.—In Peterburg, Virginia, on Tuesday, February 5th, Dr. John Blackwell Strachin, aged seventy-seven years.

TALBOTT.—In Texarkana, Texas, on Saturday, February 2nd, Dr. J. W. Talbott, aged sixty-seven years.

VAN DEUSEN.—In Leeds, N. Y., on Monday, February 11th, Dr. Claudius Van Deusen, aged eighty-three years.

WARNER.—In Hampden, Massachusetts, on Tuesday, February 12th, Dr. Henry Warner, aged sixty years.

WHEELER.—In Farmington, Connecticut, on Sunday, February 10th, Dr. Franklin Wheeler, aged eighty years.

YANCEY.—In Washington, D. C., on Friday, February 8th, Dr. Charles K. Yancey, United States Navy, aged fifty-nine years.

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Original Communications.

TRYPSIN IN CANCER: A PRELIMINARY STATEMENT.

By WILLIAM STAMMAN BAINBRIDGE, M. S., M. D.,
New York.

Surgeon, New York Skin and Cancer Hospital; Secretary, International Conference for Cancer, Heidelberg.

Huxley has aptly said, "The man of science has learned to believe in justification, not by faith, but by verification." Until such time as verification is complete, the scientific attitude must ever be that of "suspended judgment." "Prove all things; hold fast that which is good," is the tentative watchword of every seeker after truth in whatsoever department of human endeavor he may be laboring. Over-enthusiasm and premature conclusions have always been a menace to scientific investigation, bringing in their wake as much harm, at times, as wilful misrepresentation; the pitiable part of it all being that it reacts upon the unfortunate ones whose sufferings it is our earnest aim to prevent or to alleviate.

The world to-day is watching, with keener interest than ever before, the warfare that is being waged against malignant disease. Thousands of cancer victims are listening with bated breath for the slightest word of hope of amelioration or cure by other means than surgery. How many times in the past, alas, have they been disappointed—the new agent apparently so full of hope has proved a mirage! Despite these many disappointments each new remedy which seems to offer reasonable hope of benefit, without doing harm, should, in suitable inoperable cases, be tried by those who are competent in this field of research. Whatever laboratory experimentation may be necessary in the development of a given method of treatment, in its last analysis the new remedy must be applied to the human being for the final test of its efficacy. In the treatment of cancer ample opportunity is afforded for such test with cases which are no longer amenable to surgical interference, but it should always be borne in mind that between the starting point, "no evidence," and the hoped for goal, "a cure," there may be many way stations of usefulness.

For some months the pancreatic enzymes in the treatment of cancer have engaged the attention of the medical press, and both here and abroad systematic efforts are being made to determine whether the so called trypsin treatment shall rest at the initial stage of the journey, be advanced to some one of the way stations, or be carried in triumph to the final, oft promised land of cure. Dr. Beard, the

originator of the method, has made it plain that it is his great desire to have his treatment thoroughly tested, along the exact lines which he himself has laid down, and that he is willing to abide by the consequences.

From May to September, 1906, I employed trypsin in a few cases according to the plan reported in the medical journals. The results were unsatisfactory. Further knowledge on the subject has shown me that in my first efforts I omitted many of the essential details, and that the treatment was not applied in strict accordance with the theory upon which it is based. However, after visiting Dr. Beard in September, 1906, and making myself thoroughly conversant with all the details of the method, I determined to begin *de novo* and to give the treatment a scientific trial, which would determine absolutely whether it was to be thrown into the junk heap of cast off "cancer cures" along with Doyen's serum, Schmidt's serum, Morton's "liquid sunshine," and the rest, or be elevated to a place of distinct usefulness.

Needless it is to say that a few months' trial in a limited number of selected cases cannot suffice to forever settle the merits of any method of treatment for cancer, with its ever dangling sword of Damocles, *metastasis*, to shadow our hopes of ultimate cure. In justice to the earnest, truth seeking element of the profession both here and abroad, in justice to cancer sufferers the world over, in justice to Dr. Beard, and lastly to myself, I find it necessary to write as I do now, in advance of further definite information. To remain silent longer would tacitly give assent, on my part, to much that is misleading. My name has been mentioned repeatedly, and without my will, in the lay press as well as in medical journals on both sides of the Atlantic, in connection with a reported case stated to be "a remarkable one clinically, on account of the decisive action of trypsin upon the cancer, and pathologically on account of the opportunity which the operation [performed by me] presented of making a microscopical examination of the actual changes produced by trypsin in cancerous tissue."

The case referred to is No. I in Dr. Morton's article, *Trypsin for the Cure of Cancer*, published in the *Medical Record*, December 8, 1906, of which he says, "a most remarkable atrophy of an entire cancerous breast ensued," and, in his summary, "a remarkable process of retrogression by degeneration and atrophy of a carcinomatous breast gland to final and curative obliteration has been microscopically demonstrated."

Dr. Morton's report, which was published in ad-

vance of a thorough study of the entire tumor mass, and against my most emphatic advice, was immediately commented upon widely by the secular press, and a marvelous new "cancer cure" was heralded to the world. Dr. Saleeby, a well known writer on medical and scientific subjects, became overenthusiastic in his articles in the *Pall Mall Gazette* of December 10, 1906, and in *Harper's Weekly* of January 19, 1907. In the latter paper Dr. Saleeby says: "The first case of Professor Morton's is the most valuable because of the completeness of the demonstration. In no other case in America has it been possible to examine, under the microscope, the results of the treatment of a tumor by trypsin." All this is most unfortunate, since the facts, at least as they pertain to Case I (upon which greatest importance seems to be laid by Dr. Morton and those who have commented upon his report), do not warrant the slightest enthusiasm as regards cure.

While this case is full of disappointment, it presents certain features which give sufficient ground for further careful trial of the pancreatic treatment. Many other cases now under treatment at the New York Skin and Cancer Hospital and elsewhere encourage us to go forward in the hope that a valuable agency may be within our reach.

Let it be understood that the present communication is in no respect a report on trypsin. The writer, as has been stated, has been giving the treatment a trial since October, 1906, by means of the enzymes, trypsin, and amylopsin, with the adjuvant remedies and the dietetic and hygienic regulations advised by Dr. Beard, but it will be many months before the detailed reports of these experiments will be published in full. In the mean time I wish to give the facts in the case mentioned in order to warn against premature conclusions, and the arousing thereby of false hopes in the minds of cancer victims.

Summary of History.—The patient, K. H., first noticed a lump of the size of a small marble in the outer quadrant of the left breast in October, 1903. I saw her at this time in consultation with Dr. E. W. Peet, of New York, to whom I am indebted for careful notes on the subsequent history of the case. Indistinct history of cancer on both sides of the family; the sister died of multiple sarcomata. Operation was advised, refused. The wound healed by primary union and con-half inches by three quarters of an inch, increased slightly in size, until removed by Dr. Peet in June, 1904 (operation No. 1). Radical operation was positively refused. The wound healed by primary union and convalescence was uneventful. The diagnosis of beginning carcinoma was verified by the independent microscopical examination of the tumor by two reputable pathologists.

In the late spring of 1905 a secondary growth appeared in the breast, to the inner side of the site of the first. By the end of June enlarged axillary glands could be made out. Radical operation was again advised and absolutely refused. The patient subsequently consulted Dr. Morton, who, according to his report of the case, gave her thirty-two x ray treatments. Eight months later she again consulted him, at which time he instituted the trypsin treatment, beginning with five minims and increasing to ten minims, the injections being given three times a week. (See Dr. Morton's article to which reference has been made.)

On October 9, 1906, the patient consulted me with reference to operation. Condition at this time was as follows: Typical large scirrhus carcinoma of the left breast, with considerable ulceration around the nipple,

enlargement of the lymph nodes well up into the axilla, a certain amount of contraction of the skin, and in spots secondary skin deposits for a short distance around the main mass.

From October 9 to November 3, 1906, there had been a distinct increase in the ulceration and in the axillary involvement. The patient complained of increased pain. No treatment was given during this interval.

With the full concurrence of the physicians with whom K. H. had been in professional relations, and with a perfect understanding on the part of the patient and family of the gravity of the case, I operated upon her, November 5, 1906, assisted by Dr. Peet.

Operation II.—The entire breast, with the skin, was excised down to the posterior axillary line, with the removal of both pectoral muscles and the entire lymphatic and connective tissue contents of the axilla, up into Mohrenheim's space, as high as could be reached. Even the periosteum covering the ribs directly under the seat of the most marked ulceration was removed. The diseased structures were excised from the middle line of the chest to the posterior axillary line. Skin flaps from the right and left half of the abdomen and the left side of the back were brought over the denuded surface, which was completely covered, with the exception of a space about two inches square in the centre. The sutured wounds united by primary union and the uncovered area gradually healed by granulation.

Shortly after the operation nodules of lymphatic metastasis appeared in the neck posterior to the sternocleidomastoid muscle, and a number of small nodules developed in the skin at the upper part of the wound. This proved conclusively that the malignant process was still active and that the trypsin treatment given by Dr. Morton was inadequate to stop its progress. Realizing this I commenced the treatment with much larger injections than he had used, and of a double strength solution of the preparation of trypsin which Dr. Beard declares is the best. Whether it was coincidental or not, it is interesting to note that no new nodules were observed from the time the patient received full dosage of trypsin to the time of my second operation, nor did those already present materially increase in size.

On November 27th (the twenty-fourth day after the radical operation), the local, dietetic, and hygienic regulations recommended by Dr. Beard were instituted. On November 28th daily injections of trypsin were begun. Fifteen minims of the double strength were injected into the deeper subcutaneous tissues over the buttocks. This dosage was increased to twenty minims and kept at that limit, with the exception of one injection of twenty-five minims. On December 24th (the twenty-eighth day of trypsin treatment), injections of amylopsin (twenty minims) were begun. For the next twenty-eight days trypsin and amylopsin were injected alternately.

Operation III.—On January 22, 1907, assisted by Dr. E. M. Foote, I removed the enlarged nodules and secondary deposits in the skin, to which I have referred. These were immediately placed in jars, which were sealed and sent by special messenger to different pathologists of standing, some of whom were told that x ray and trypsin had been used, while to others was given no such information. Their reports are appended.

The wounds healed promptly by primary union. The trypsin treatment was temporarily suspended on account of this operation, but has been resumed, with certain modifications.

Before giving the pathological reports concerning the tumor mass and the metastatic growths subsequently removed, I think it but just to say a word concerning the report given to Dr. Morton by Dr.

Brooks, pathologist to the New York Postgraduate Medical School and Hospital. Dr. Morton, who was present at the operation of November 3, 1906, asked the privilege of taking a small section of the tumor mass for study. This courtesy was granted, and he himself cut from the tumor a piece from near the nipple. This, it would appear, was given to Dr. Brooks for microscopical study, and upon his report, and upon this alone, Dr. Morton and others have based their conclusions as to the value of trypsin "for the cure of cancer" in this case. So sanguine did Dr. Morton seem to be that he sent microscopical sections from the case to Europe for confirmation of his assertions (according to Dr. Saleeby, *Harper's Weekly*, January 10, 1907).

Attaching so much importance to the microscopical findings from so small a section taken from the centre of the tumor is manifestly unfair to Dr. Brooks, for, as we all know, the entire periphery of a tumor should be studied when it is wished to determine whether the malignant process is still active. The opening sentence of Dr. Brooks's report says that by far the greater portion of the specimen was composed of extremely dense fibrous connective tissue, "strongly resembling the fibrous connective tissue change noted in breast tumors subjected to x ray." This connective tissue, he continues, encroached upon the carcinomatous (epithelial) elements, which were scantily present and which were undergoing necrosis. "The great density of the tissue throughout and the decided degenerative changes in the epithelial cells gave the impression," says Dr. Brooks, "that atrophy of the carcinoma elements had occurred and been followed by great contraction and condensation of the fibrous connective tissue stroma." This change, as is well known, and as Dr. Brooks himself suggests, is not at all incompatible with what occurs in scirrhus cancer which has been subjected to x ray treatment. Inasmuch as the section which he examined was but a fragment of the tumor, and the findings nothing more than could be accounted for by the use of the x ray, and since the portion examined was not taken from the periphery of the tumor, where proliferation of the malignant process should certainly be looked for, the report carries absolutely none of the weight which Dr. Morton and others have read into it. Dr. Morton says further: "Dr. Brooks assures me that had the process outlined in his report continued the result would have been such marked condensation of the fibrous connective tissue as to have made it very difficult to determine the carcinomatous nature of the growth." The fact that this "process" did not continue, as will be shown hereafter, still further nullifies such hasty pathological conclusions. Dr. Morton, however, with clairvoyant vision, gives a further "reading" in these words: "In fact, the tumor at the time of operation was progressing to a point where its pathological nature would be considered simply as scar tissue. The finality of this process would have been a carcinomatous breast (involving inclusively its skin envelope) which had entirely disappeared—which had become, in short, *absolutely cured*" (the italics are my own).

The pathological reports which follow are quoted verbatim and in full:

REPORTS ON TUMOR MASS REMOVED NOVEMBER 3, 1906.

I.—Dr. F. B. Mallory, associate professor of pathol-

ogy, Harvard Medical School. "You sent me a typical rather rapidly growing carcinoma of the breast. It contains a good deal of fibrous tissue, that is, it is of the scirrhus type, but occasional mitotic figures are present. The deeper parts where the tumor is invading muscle and fat tissue show nothing unusual. In other parts of the tumor, however, nearer the skin surface, there are (a) extensive areas of necrosis involving tumor cells and stroma; (b) areas where the stroma of connective tissue is very abundant and the tumor cells very few in number; (c) rather extensive areas in which the tumor cells present marked evidence of degeneration. The epithelial cells are large and have large, round, oval, or often lobulated nuclei. Still other cells are frequently found in which many nuclei are present formed by direct division. This process is analogous to that which occurs in the epithelial cells lining the pharynx, in the early stages of diphtheria, also in the skin after repeated freezings. These three degenerative processes would indicate some destructive process, but whether they are due to the x rays, or to trypsin, I am unable to say. I should favor the former."

II.—Dr. F. S. Mandlebaum, pathologist to Mount Sinai Hospital: "I have made sections from four different parts of the breast tumor that you sent me. In each of these I find fibrocarcinoma present. There are a good many places where the tumor cells are degenerated and stain very poorly, and it is natural to assume that in such places the process is quiescent, probably due to the various methods of treatment that have been employed. But in other situations, notably at the periphery, many nests of carcinoma cells are seen growing quite actively and infiltrating between the muscle fibres. In such situations quite a number of mitotic cells are seen, showing beyond question that the tumor growth is still active. The tumor cells in these places show no degenerative changes, and stain in the usual manner."

Dr. Martha Wollstein, pathologist to the New York Skin and Cancer Hospital and fellow of the Rockefeller Institute, says: "The specimen as a whole takes the stains badly, and this prevents a positive opinion as to the condition of the individual cells. Many of the cells are in good condition, however, especially at the periphery, where columns of them are extending into the lymph spaces. There is marked inflammatory reaction in some places; in others the alveolar contents have disappeared, but whether this occurred before or after removal of the breast cannot be determined. The stroma is quite dense in some places, but on the whole it has the typical appearance of a scirrhus carcinoma."

REPORTS ON METASTATIC GROWTHS REMOVED JANUARY 22, 1907.

I.—Dr. James Ewing, professor of pathology, Cornell University Medical College: "Material received consisted of one piece of skin and a nodule 2 x 1 x 1 cm., apparently of subcutaneous tissue. Both specimens contain a diffuse growth of highly malignant tubular carcinoma. The large nodule consists of fat tissue, connective tissue, and one small lymph nodule, all of which are thickly infiltrated by the tumor. In the lymph nodule the carcinomatous growth is diffuse and little of the node remains. The pericapsular lymphatics and several large veins are plugged by solid masses of tumor cells. A considerable increase of fibrous connective tissue accompanies the tumor process. In the skin there are several minute and one larger metastatic nodule, and in some foci only a few isolated tumor cells appear. In these metastases the tumor cells first appear in small isolated groups which increase in size, until, as in the largest nodules, the chords are of considerable thickness, or the growth is almost diffuse. In all portions examined the cells retain the characters of

large polygonal epithelia. The characters of the cells, their arrangement, invasion of bloodvessels, and numerous mitotic figures, indicate active growth and a high grade of malignancy. A moderate degree of hydropic and fatty degeneration is present in many of the cells of the cutaneous nodules, but in the main subcutaneous tumor and in the lymph node, degenerative changes are very slight or entirely missing. Mitotic figures are abundant in all parts of the tumor. In this case, therefore, there is no indication that the trypsin treatment has exerted any definite influence on the tumor cells. The degenerative changes seen in some portions are often present in carcinomata."

II.—Dr. Wollstein: "Skin.—Epidermis normal. In the subcutaneous tissue there are some smaller and larger columns of epithelial cells which have penetrated the lymph spaces, and evidently show spreading of the carcinomatous process from below. *Lymph nodes* show marked metastases of carcinoma. Only a small amount of adenoid tissue remains."

III.—Dr. Mandlebaum reports upon the metastatic growths as follows: "I have examined the two specimens. The one, supposed to be a gland from the neck, does not show any glandular tissue, but it is entirely infiltrated by carcinoma cells, which are active and do not show any degenerative changes whatever. I look upon this as a metastatic nodule in the superficial muscles. The other specimen shows carcinoma cells, rapidly growing, in the upper layers of the corium and also extending downwards into the deeper layers of the skin and subcutaneous fat. These cells, likewise, show no evidence of degeneration."

IV.—Dr. F. M. Jeffries, director of the pathological laboratory of the New York Polyclinic Medical School: "To begin with, cancer invades all the tissues received—the skin from cicatrix of previous operation and the tissue from present operation. It is of the carcinoma molle type, and, by the abundant karyokinesis, appears to be in a very active state. In fact, it exhibits most extreme malignant characteristics, even the extreme of invading the arteries and veins where emboli appear to have lodged; and in two such instances I find in my sections that these emboli have penetrated the endothelium and dissected the muscular coats of the vessels."

"I am wholly unable to appreciate any effects which might be attributed to the treatments to which you say the growth has been submitted, except in the more superficial alveoli of the portion of the skin from old scar, where I recognize the effect of the x ray treatment in a contraction of the alveoli, together with a general atrophic condition, affecting all superficial structures save epidermis, which appears to be entirely normal. The groups of cancer cells in this locality appear to have become markedly shrunken, they fail to react properly to the nuclear and protoplasmic stains and there is consequently very little differentiation. It exhibits practically no karyokinesis."

The foregoing history, embracing the pathological reports, will, I believe, convince all who may be interested, that in the study of cancer, more, perhaps, than in any other field of research to-day, is there need for "suspended judgment," for "the cultivation of that enthusiasm for truth, that fanaticism of veracity," which should be brought to bear on all questions involving human life.

Whether we accept or reject the theory upon which it is based, let the "trypsin treatment" receive the scientific test; while it is being tested, let there be suspended judgment. When the evidence is correlated and the final verdict rendered, if favorable, let it be accepted; if adverse, then on to the next!

SOME NEW HIGH FREQUENCY DEVICES.

By HENRY G. PIFFARD, M. D., LL. D.,
New York.

The use of vacuum tubes in connection with high tension and more particularly with high frequency electric currents is an American device, and originated, I believe, with Dr. F. F. Strong, of Boston. They may be connected directly to one pole of a static machine or coil and applied directly to the skin, or held at a little distance from it, according to the effect one desires to produce. The effect will vary with the intensity of the exciting current and the degree to which the tube has been exhausted. If the vacuum is low (the so called Geissler vacuum) the tube will glow with a pinkish radiance, sometimes improperly termed violet; while if the vacuum is very high the glow will be whitish, with sometimes a tinge of green.

Some manufacturers of electrical apparatus inform their customers that the tubes used in the manner indicated constitutes a high frequency application, while others will tell them that they are using "violet light" or "violet rays." Neither statement is correct. A high frequency current is never obtained except in connection with a condenser discharge. If the outer armatures of a pair of Leyden jars be connected through a d'Arsonval small solenoid, or through the primary of the author's transformer¹ or other device of similar construction, a high frequency current is developed, and can be usefully employed by connecting a vacuum tube to one of the terminals of the solenoid, or to the primary or secondary of the transformer, the other terminal being free or connected with some indifferent part of the patient's body. The glow or radiance from the tube will correspond to the vacuum as already noted,² and the current will be a high frequency one.

If instead of connecting the vacuum tube to the primary of the transformer, it be connected to one of the terminals of the secondary winding we will have also a high frequency current, but one of much higher voltage; and if the patient be connected with the other secondary terminal the effect will be still more intense. In fact, by using unipolar or bipolar connection and varying the length of the spark gap the intensity of the effect may vary from a gentle and pleasurable stimulation to one that will severely try the nerve of the most resolute. Before using any of these currents, the physician should

¹ *Medical Record*, October 20, 1900.

² Examined with a prism, this radiance will be found to cover a considerable proportion of the visible spectrum, and is in nowise to be spoken of as distinctively violet. In fact, its intensity, as well as that of the other colors, is vastly inferior to that from an ordinary Welsbach burner.

Since Finsen brought violet and ultraviolet rays into such prominent notice, manufacturers have taken advantage of the credulity of some members of the profession and have persuaded them that by the use of certain simple devices the Finsen results could be duplicated. The effects obtained from a vacuum tube properly actuated is an electrical one, and is in nowise to be confounded with any form of phototherapy. Professor Minin (sometimes incorrectly written Minim), of St. Petersburg, introduced the use of an incandescent electric light having a blue bulb and backed by a reflector. The use of this is sometimes spoken of as blue light or "violet light treatment." That such a lamp has its uses is unquestioned, but its efficiency is impaired rather than promoted by the colored bulb.

The standard Finsen lamp demands about 8,000 watts (more than ten horse power of energy), while a 16 c. p. incandescent requires only fifty-five or sixty watts. The output of blue and violet rays is also much greater in the Finsen arc per unit of energy expended, than in the incandescent, and it would therefore require approximately 150 or more of these incandescents to equal the Finsen in short wave efficacy.

first "try it on the dog," and the "dog" should be himself.

The benefit to be derived from vacuum tube applications in certain cutaneous affections, neuralgias, and sundry "rheumatic" pains is now so thoroughly established that it is unnecessary to dwell on the matter here.

In some cutaneous and other conditions, it may be necessary to apply the tube to a considerable extent of surface, and where this is done with the tube directly on the skin, it is found that it does not pass freely, but tends to stick. To overcome this tendency, I have devised an egg shaped vacuum tube that, held in an appropriate handle, readily rolls over the surface. The general form of the device is shown in Fig. 1.



FIG. 1.—The author's vacuum rolling rheophore.

When a vacuum tube is used in connection with a coil instead of a static machine, either directly connected or through the medium of a solenoid or a transformer, the exciting current is of lower voltage, but much higher amperage and the sensations of the patient and the local effect will be somewhat different. The heating effects will be more pronounced and the sparks more painful.

This matter is very readily regulated by increasing or diminishing the spark gap between the secondary terminals of the coil and proper adjustment of the rheostat and the interrupter.

Vacuum tube applications have proved of the highest service in the treatment of many cutaneous lesions, a fact to which I have elsewhere called attention (*Medical Record*, October 20, 1900), and also have been found useful by many physicians for purposes of counterirritation in neuralgia, "neuritis," and other painful conditions. I am not aware that these applications have any effect on the general system other than may result from relief of the local conditions for which they may have been employed.

The high frequency currents which do affect the general system, and do so in a most decided manner, are the three d'Arsonval currents, and probably also the "effluve," first developed therapeutically by Oudin.

The currents chiefly associated with d'Arsonval's name are the shunt or "derived," the autoconduction, and the autocondensation. These have been described in more or less detail and with more or less accuracy in most of the recent textbooks on electrotherapy as well as in journal articles by myself³ and others. The autoconduction current I exclude from present consideration.

³ *Medical Record*, October 31, 1903; *Archives of the Roentgen Ray*, October, 1904; *New York Medical Journal*, June 16, 1906. The recently published work by Crook (New York: Wm. Wood

The autocondensation current is usually administered with the patient reclining on a special condenser couch. This, however, is a somewhat cumbersome article and not altogether satisfactory in use; and for a long time I have substituted a special condenser cushion in connection with an ordinary arm chair (*Archives of the Roentgen Ray*, October, 1904).



FIG. 2.—The author's condenser cushion.

originally constructed the cushion was of the form here shown in Fig. 2.

More recently it has been improved by some slight modifications in the details of construction. When in use the cushion is placed on the seat of the chair in the manner shown in Fig. 3.

It will be noted that the arms of the chair are ornamented with brass balls about 2½ inches in diameter, and these are connected together by a brass chain in such manner that the chain can be readily detached if desired.

When in use the cushion is attached to one of

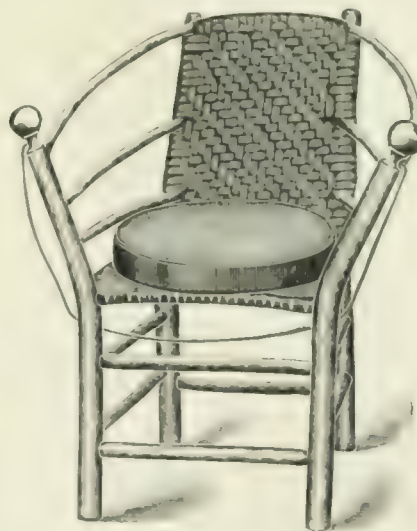


FIG. 3.—The author's autocondensation cushion and chair.

the terminals of the d'Arsonval solenoid, the author's spiral or the primary of his transformer, and the balls on the arms of the chair to the other terminal. With the patient sitting on the chair with his hands on the balls and the apparatus (static machine or coil) in action and with Leyden jars in position, he will receive the autocondensation current. There

& Co. is especially valuable for the very thorough compilation of the observed physiological effects of these currents.

is a barely perceptible sensation even with a current of several hundred milliamperes.

It will be noted, however, that with this arrangement the current circulates through the upper part of the body (from the buttocks to the arms).

As it is sometimes desirable to bring the lower part of the body within the circuit, I have devised a little insulated footstool that I find exceedingly convenient for this, as well as some other purposes. It is sixteen inches square and raised on glass legs about five inches above the floor, as shown in Fig. 4.

The wooden top is covered with a thin metal plate. With the patient sitting on the cushion and his feet bare or in stockings resting on the stool connected

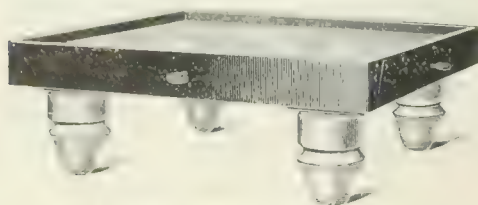


FIG. 4.—The author's insulated footstool.

to the free terminal of the solenoid, the direct action of the current will be confined to the lower part of the body; that is, from the feet to the buttocks.

Again, if one terminal be connected to the balls on the chair (the cushion being discarded) and the other terminal to the footstool on which a sheet of plate glass has been laid, the entire body except the head will be subjected to the influence of the autocondensation current.

The third of the d'Arsonval currents, namely, the one in which the patient is placed *in shunt* to the solenoid (*courant en dérivation*) is described in the textbooks, but curiously little information is given as to its physiological effects or the special technics of its application. One convenient method of using it is to connect the terminals directly to the brass balls on the chair, detaching the chain that connects them and discarding the condenser cushion. With this arrangement the current oscillates from hand to hand across the body at or near the upper part of the spine.

As a rule, however, I prefer to connect one terminal to the footstool, and the other to the balls connected together by the chain. In this way one obtains a wider distribution of the current, and it has appeared to me to produce a more profound impression on the system.

The manner in which the high frequency currents traverse the tissues is a problem that still awaits a definite solution. Various explanations have been given, but none of these has as yet received universal acceptance. The laws which govern the behavior of the direct galvanic current do not in all cases appear to be applicable to the currents here considered. Is the transfer of the current from one terminal to the other through the tissues in accordance with the laws of Ohmic resistance, or on the other hand, does the body act as a capacity (condenser) which presupposes an internal and an external armature? Some writers maintain that the high frequency current simply flows over the surface of the body without penetrating it, but the

observed facts as regards the effects of the current would appear to negative this view.⁴ If a person is placed in the chair and connected for either the autocondensation or the shunt current, with a standard 16 c.p. lamp in series, the current can be adjusted so that the lamp filament will glow with a bright cherry red. Now, if a second person be added to the circuit, the filament will brighten, and if still another be added it may bring the lamp up to full incandescence, a fact not in harmony with the idea of Ohmic resistance, so far at least as regards the human portion of the chain.

In the foreign literature of the high frequency currents, frequent reference is made to the beneficial results of the use of the effluve from the Oudin resonator. With this in view I have tested resonators made in France, England, and America, but without finding one that I cared to permanently install. Disappointed in this I sought to obtain an efficient effluve by other means, and have succeeded in doing so. Taking my transformer as the starting point, I altered the primary so as to obtain an increased inductive effect, and in connection therewith, used jars having foil surfaces of not less than eight by twelve inches. The apparatus is completed by an intensifying electrode. This latter is virtually a resonator, and weighs about eight ounces (Fig. 5).

When the apparatus is properly actuated by either a static machine or coil, the effluve is superior in length and fullness to any that I have seen from a resonator of the Oudin type.

The strongest effect is obtained when the subject stands in bare or stockinged feet upon the insulated footstool attached to one of the secondary terminals of the transformer. To the other terminal the electrode is attached through the medium of a flexible but well insulated cord. The effluve from the static installation is longer and coarser than that from the



FIG. 5.—The author's intensifying electrode.

coil, and is absolutely painless, there being simply a slight and pleasureable sensation of warmth.

If the effluve be at its maximum intensity and the electrode approached to within three or four inches of the patient standing on the footstool, the under-

⁴As further bearing on this point I would call to mind the character of the discharge that passes between the terminal balls on the ends of the sliding rods of a static machine in action, the Leyden jars having been removed. There is nothing here in any way suggestive of a condenser effect. If the static terminals be connected through the medium of an oscilloscope, the current will be found to be unidirectional, the negative glow appearing where we would expect to find it—that is, on the oscilloscope terminal nearest the negative side of the machine.

If we place a patient on the insulated platform and connect him to the positive side of the machine with the negative grounded in the manner employed in using the "wave current," we are at once struck with the changed character of the discharge across the sparkgap, which here *does* possess the features of a condenser discharge. Inserting the oscilloscope between the patient and the machine, we shall find a glow on *both* terminals, and that it is much stronger on the terminal nearest the machine. In other words, we have an alternating instead of a unidirectional current, and with the inverse stronger than the direct. That the energy of the current is not wholly expended on the body of the patient is shown by the fact that if there be an electroscope in the immediate vicinity it will in a few minutes become charged to a potential of a thousand volts or more.

These several facts certainly point to the conclusion that with high tension currents the human body in the circuit behaves as a capacity rather than as an Ohmic resistance. Whether the body is a complete condenser (two armatures separated by a dielectric) or comprises only one or two of its constituent elements, is a question for the physicist to answer. I cannot.

lying muscles will contract in a peculiar manner, differing from any other form of contraction produced by electric currents. The muscles do not contract in bulk, but only in the regions on which the effluve impinges, the separate fibres apparently contracting independently of each other. The contractions are painless. If the electrode is brought within sparking distance, the clear white, single sparks are painful. The effluve here described differs from the Oudin in being longer and of higher voltage, and may be conveniently designated as the transresonator effluve or current.

Accompanying the effluve there is an intense development of ozone with, of course, some nitrogen oxides, sufficient sometimes to prove disagreeable to both the patient and the physician. This is more marked with the coil than with the static machine.

The value of a powerful effluve in pulmonary tuberculosis and some other affections has been so thoroughly attested by competent clinicians at home and abroad that there remains no doubt in the writer's mind as to the efficacy of this agent⁶ in connection with other appropriate measures of relief.

The effluve must in no sense be regarded as a purely local application, for if the patient stand on the insulated footstool connected to the other pole of the machine, he becomes a part of what, in this connection, might be termed a short circuit. If not so connected, he becomes part of a longer circuit through the ground. In either case, the oscilloscope⁷ shows that we are dealing with an oscillating current, with, however, a preponderance of effect in one direction.

Under the influence of the transresonator effluve I have seen tuberculous cervical glands diminish, pleuritic pains accompanying pulmonary tuberculosis subside, and neuralgic or "neuritic" troubles yield to its influence.

My personal use of the effluve has been chiefly in connection with cutaneous affections, and I have found it specially useful in acute fluent eczematæ, in pruritus, and as a capillary stimulant. I have found it extremely useful in these conditions, and I believe moreover that its sphere of useful activity will be further extended to conditions that have not as yet been brought to public notice.

256 WEST FIFTY-SEVENTH STREET.

THE NEW BED FRAME USED IN THE PHILADELPHIA ORTHOPÆDIC HOSPITAL; ALSO AN APPARATUS FOR THE APPLICATION OF BODY CASTS.

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The type of bed frame formerly in use in the wards of the Philadelphia Orthopædic Hospital and Infirmary for Nervous Diseases, and in general use at the present time in most orthopædic institutions in this country, is the original one of Bradford. It

consists of a plain gas pipe frame of suitable width and length, over which is stretched some form of cover.

Experience with this type of apparatus clearly shows its failure to meet the requirements which it is intended to fulfil. Another form with a contrivance to tighten the cover laterally was also found unsatisfactory. The following are some of the features requisite to an ideal bed frame: The frame should not be heavier than is absolutely necessary to insure its strength and stability. It is perfectly clear that as patients are to be lifted and handled with the frame, any additional weight renders the duties of the nurse to her patient more difficult and laborious.

The frame should be of proper length to suit the particular case. It is far better that the frame should be several inches too long than one inch too short, for example: If we allow the patient to be strapped upon a frame over the end of which his feet project, it is evident that the constant pressure brought to bear upon the back of the heel or ankle by the weight of the foot upon the cross bar will increase the liability of sores occurring in this locality, and as the patient is likely to be kept flat on his back any-

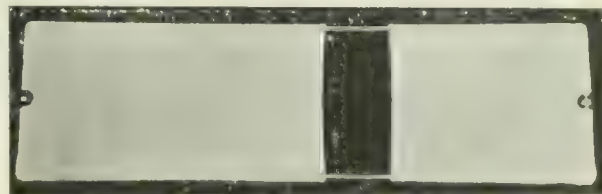


FIG. 1.—Model No. 1, or bed frame, with canvas cover in place.

where from one to several months continuously, the consideration of bed sores is to be taken into account, as one of the complications likely to arise, unless we are careful to see that undue pressure is not brought to bear upon any particular point. The frame should be of such width that a margin of cover, say, two inches beyond the tip of each shoulder is maintained, for the reason stated, namely: The avoidance of pressure.

Textbooks describe the Bradford frame as being of such width that the side bars are about in line with the axillæ. Next comes the consideration of a proper cover for the frame, and this feature is of great importance.

Probably the most suitable material for the purpose is heavy canvas, such as is used for tent making, which is inelastic, not easily wrinkled, and wears well. The frame should be covered (one or both sides) with this material and the cover made as tense as it is possible to get it, great care should be exercised to see that no wrinkles occur at any part of the cover upon which the patient is to rest, as it is another fertile cause of excoriations and sores.

A space of about four inches should be left uncovered near the centre of the frame to allow the buttocks to slightly protrude into the opening, thus rendering it easy for the nurse to place the patient upon the bed pan without having to unfasten and lift him from the frame for this purpose.

There has always been considerable difficulty heretofore in selecting, applying, and tightening the cover for bed frames. The material generally used has

⁶References bearing on this point will be found in a paper by the author published in this *Journal*, June 16, 1906, p. 1218.
⁷This is a convenient little device of foreign origin that enables one to ascertain, in a moment whether a high tension static or coil current is unidirectional or alternating. It cannot be used with the commercial light or power currents. A description of the instrument will be found in an article by the writer in this *Journal* of November 17, 1906, p. 965.

proved to be too light, stretches easily, and is in other respects unsatisfactory, as applied, the covers were not sufficiently tight to prevent the patient from sinking down when laid upon the cover.

The frame now to be described is known as model

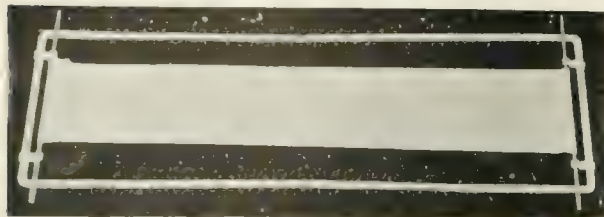


FIG. 2. Model No. 2, or hammock frame, with muslin cover applied.

No. 1, or bed frame. It is made from three eighth inch (five eighth inch outside diameter) iron piping bent at right angles at each of the four corners and cut through in the middle of the cross bars, which have upon their inner surface around the lumen of the pipe, a series of right and left hand threads to receive the corresponding threads on the screws at

of which is a little longer than the other; these bags are closed on both sides and at one end by reinforced stitches, thus giving us an amply strong cover that will safely withstand sufficient tension. These are slipped on over the ends of the frame and are provided at the centre of the closed end with a small opening, which leaves uncovered only the tap on the end screws, thus making it perfectly easy to apply the wrench, and by turning the tap to increase the width of the frame, thereby making the cover as tense as desirable. As the frame is covered on both sides alike, it is only necessary to reverse it should it become soiled by food, etc., accidentally spilled, or by the body excretions as may occur from incontinence due to pressure myelitis in bad cases of Pott's disease, or from other causes. The bed frame, or model No. 1, is made in different lengths to accommodate children ranging in years from three to fourteen.

The hammock frame, or model No. 2, is used almost exclusively in applying plaster of Paris or other body casts by the hammock method. This frame is also made of three eighth inch (five eighth inch outside measurement) iron piping bent at right angles



FIG. 3. The application of body cast with patient in position

each end of the frame. The threads extend into the cross bars for about three inches on each side of the cut ends. Threads of the same length are upon the end screws on each side of the taps; this enables the frame to be increased in width about six inches if desirable, by simply turning the end screws by means of a small wrench fitted to the tap. The cover for the frame is made of heavy canvas, and is in two parts. Each half is made in the form of a bag, one

at each of the four corners, but instead of having end screws, it is provided with screws in the middle of the side bars, thus furnishing the means of lengthening the frame. The mechanism of the side screws is precisely the same as described for the end screws, except that in one instance the frame is widened, whereas in the other it is lengthened. This frame is provided at each end with two broad S hooks, the object of which is to hold in place two small solid

iron rods, which extend out on either side of the frame and rest upon the side bars. The cover for the apparatus is made of unbleached muslin, it is ten inches wide and reaches as far as the iron rods at each end, and is here doubled on itself, thus forming a loop through which the rods are inserted and then placed within the grasp of the S hooks. A

on which the child rests. Having applied the cast if plaster has been used, the child is allowed to remain in position until the cast is thoroughly dry. The cover is then cut away above and below the cast and the child removed.

In using the suspension method for the application of jackets, we have repeatedly seen patients

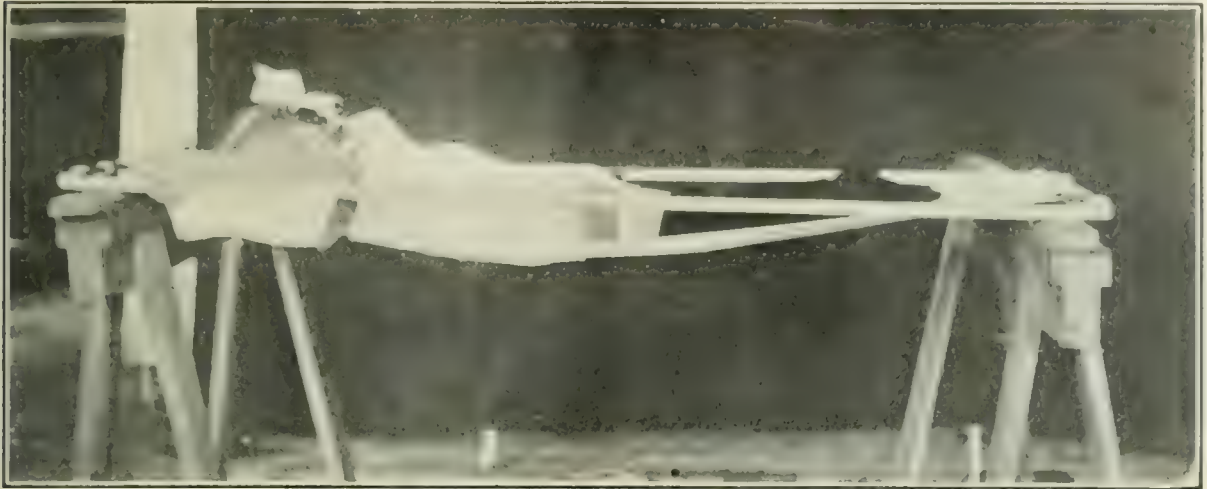


FIG. 4. Patient waiting for cast to dry before being removed.

space of four or five inches is left uncovered on each side of the cover, and extending the entire length of the frame. With the cover and rods in position, it only remains to tighten the cover by turning the side screws, and thereby lengthening the entire

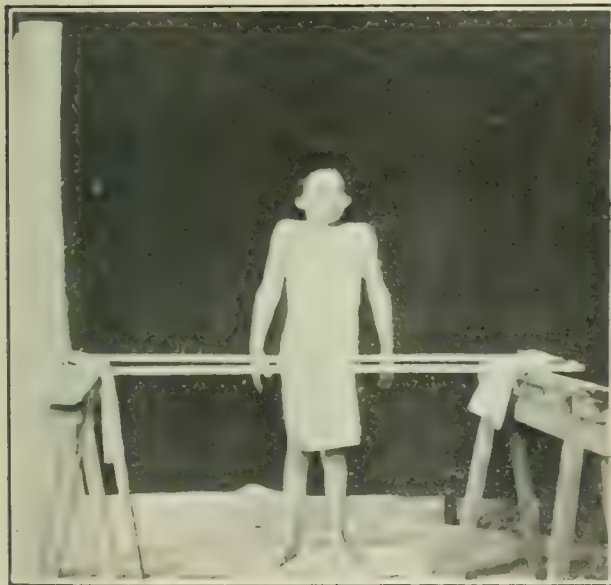


FIG. 5. Patient removed after cast has thoroughly dried; also showing remains of muslin cover after being cut above and below the cast.

frame until the desired tension of the cover is obtained. The cast is applied as follows:

The patient previously fitted with a stockinette undershirt is laid flat on his abdomen and chest upon the cover, heavy felt pads are placed in position in the axillæ, over the kyphosis and over the hips, and the plaster of paris or silicate bandages applied in the usual manner, including the muslin

almost in a fainting condition from exhaustion due to the severe strain imposed upon them in maintaining the required position for the time necessary to apply the cast and allow it to thoroughly dry. On the other hand, when using the apparatus described the patient is seldom much fatigued, although compelled to lie for a considerable time before being cut away from the frame. Both models were devised by the writer and first put to practical use in the wards of the Philadelphia Orthopædic Hospital and Infirmary for Nervous Diseases, where they are now used.

NORTHWEST CORNER OF SEVENTEENTH AND SUMMER STREETS.

A STUDY OF SHREDS IN THE URINE IN THEIR RELATION TO DIAGNOSIS AND PROGNOSIS.*

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It is my purpose in this paper to present the results of a study of shreds in the urine in a large number of cases of chronic urethritis and prostatovesiculitis. This work was begun about seven years ago, and the material for it has been drawn from my private cases and from a large number of patients examined by me at the Postgraduate Hospital, where I have had unusual opportunities, through the courtesy of Dr. Ramon Guiteras, for studying this phase of urological diagnosis.

My aim in this study was to perfect if possible a technique for the routine examination of shreds, to identify and to classify the different varieties

* Read at a meeting of the Genito-urinary Section of the Academy of Medicine, January 20, 1907.

of shreds, to control the significance of the various types of shreds by clinical observation and by urethroscopy, and to draw such conclusions as seemed justified from an analysis of several hundred cases.¹

Shreds in the urine have been known from an early period in the history of medicine. Augerius Ferrerius (1553), Gmelin (1700), and Astruc

there is a noteworthy lack of good illustrations and of precise directions as to the technique of examining shreds.

Technique of Examination.—Considerable attention was paid in the present investigation to the technical methods suitable for the study of shreds. Most textbooks do not even mention this subject, while one or two say that shreds with gonococci, etc., are stained in the same manner as smears of urethral discharge.

In order to obtain a good specimen, the patient should be told to report early in the morning, with a full bladder. Either the two glass test or one of its modifications (Kollmann's, Wolbarst's) may then be applied in order to localize the shreds, if possible. I am not concerned here with these tests, but am simply dealing with the shreds as they appear in the urine or in the irrigation fluid. After a simple inspection, which reveals the size, shape, consistence, color, and buoyancy of the shreds, the latter are carefully picked out with sterile loops or hooks of platinum wire and are spread on slides placed over a black surface. These simple manipulations, as we shall see, will enable us often, even on naked eye inspection, to distinguish certain important varieties of shreds.

In routine work it is not necessary to examine unstained specimens of shreds or hanging drop preparations thereof unless we wish to add iodine or some other reagent to test the chemical behavior of certain cells.

Methods of Fixation.—It is not advisable usually to allow a shred to dry on a slide for a long time without fixation, as the urinary salts crystallize and interfere with the subsequent staining. The object of fixation is twofold: To cleanse the shred of the adherent urinary constituents, and to coagulate its loose and semifluid



FIG. 1.—Pus shred. Chronic urethritis in the stage of soft infiltration. Showing masses of pus cells and strands of matrix ($\times 62$).

(1754), mention them in their writings (1) and since then they have been described more or less accurately by every writer on urethritis. With the development of modern methods of diagnosis, with the evolution of the urethroscope, the subject of shreds has been unwarrantably neglected. The brevity and incompleteness with which it is considered in nearly all our modern textbooks is astonishing. With the exception of Taylor's treatise (2) and of the latest edition of the work of Keyes, father and son (3), where good summaries of the subject are given, the majority of American textbooks devote but a few sentences to shreds.

The theme is more fully dealt with in the foreign textbooks, most of which draw freely upon the researches of Fürbringer (4), published in 1883, and those of Hallé, which appeared in Guyon's *Leçons cliniques* (5) in 1894. Kollmann and Oberländer (6), after many years of observation, have been unable to add very much to what is already known about shreds, as they admit in their work on chronic urethritis, published in 1901.

A search of the literature shows that the original work which has been done on shreds can be summed up in a very few titles, which are given in the bibliography hereto attached. Furthermore, in spite of the considerable amount of research done by these few authors, there are still gaps in our knowledge of shreds and, above all,

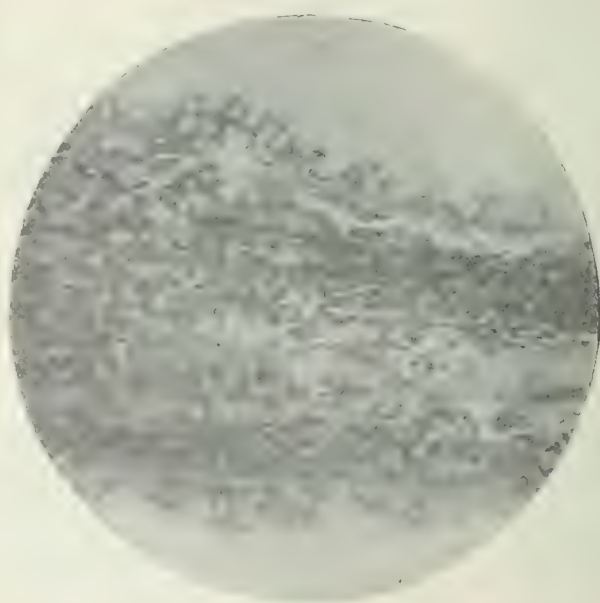


FIG. 2.—Pus shred. The specimen in Fig. 1 under higher magnification. Showing pus, epithelia, and strands of matrix ($\times 333$).

matrix, so as to render it susceptible to staining and make it adhere to the slide.

Heat should not be employed for fixing shreds. It distorts cellular elements and merely evaporates the urine, leaving a sediment of crystalline particles. There are better methods of fixation which suggested themselves in the course of this work.

One of the best of these is a five per cent. solution of mercuric chloride. This coagulates the protoplasm

¹ I may add that I have not concerned myself specially with the differential stress of shreds, and the presence of gonococci therein. This phase of the subject has been dealt with sufficiently by other writers.

of the shreds almost instantly without distorting the images, and its watery base removes the adherent urinary elements. It should be poured on copiously, cautiously drained off, and poured on repeatedly, leaving the last quantity to soak into the shred for a few minutes. The excess is then to be washed off with water, as otherwise the mercuric salt may form precipitates with some stains and may cloud the balsam used in mounting by forming a crystalline deposit.

A mixture of alcohol and ether in equal parts forms

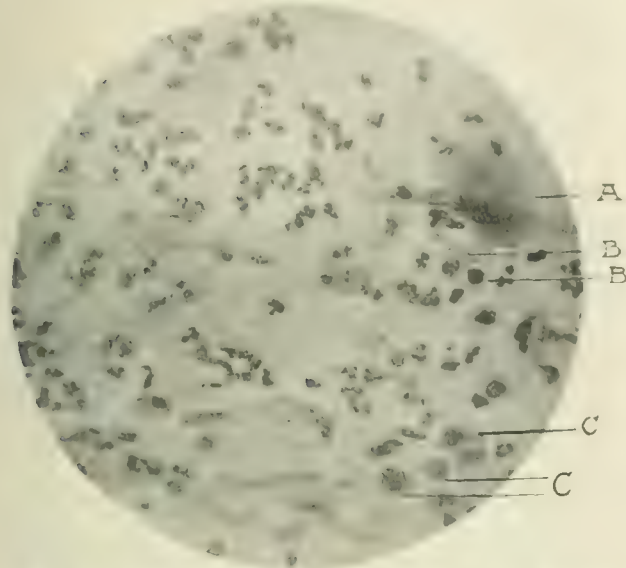


FIG. 3.—Mucopus shred, showing amyloid body (A) and contrast between normal (B), and chromatically degenerated epithelia (C). (249x).

an excellent fixative, efficiently cleansing and coagulating without distortion. It is used in the same way as the bichloride, allowing it, however, to remain for five or ten minutes; then draining the slide and immediately staining. This reagent is the best fixative for routine work. A modification of this method, suggested to me by Dr. Henry Kreuder, consists in imbedding the shred in a very thin film of collodion on the slide. This film can be used for any smear, when we wish to avoid the use of heat. In the case of shreds, however, it is best to wash and dehydrate the specimen by pouring alcohol and ether over it, draining, and then covering the slide with a very thin layer of very dilute collodion (a few drops of molasseslike collodion in two ounces of alcohol and ether). The slide is next dried, and before staining is soaked for ten minutes in distilled water.

Methods of Staining.—In the course of the present study I have used a large variety of stains, including eosin and methylene blue, eosin and thionin, hæmatoxylin and eosin, Van Gieson's picroacid fuchsin, and hæmatoxylin, etc. While beautiful results are obtainable with all these methods, they are too complex and elaborate for routine work, and need not be described here.

The best routine stain for shreds which enables us to study their morphology as well as their bacteria, is Unna's polychrome methylene blue. A well seasoned solution of this dye should be used. It is simply poured on the slide, allowed to remain for about a minute, and drained off. The specimen is then immersed in several changes of distilled water, and is examined with a low power. If it is found insufficiently stained, the dye is allowed to act for another half minute. If it has been overstained, the subsequent steps may still save it. With Unna's stain we get a beautiful polychromatic differentiation of all the constituents of shreds, so that there is no need of double

staining. The nuclei are stained a rich purple, the gonococci and other germs a blue black, the cell bodies range from a pale blue to a bluish violet, while the basement substance assumes a pale pinkish violet or lavender tint, and the mucus stains a brilliant mauve.

Gram's stain is used, according to the well known rules for staining tissue sections, when it is desired to demonstrate gonococci in shreds. The method is so familiar that it needs no further comment here.

Further Manipulations.—The washed and dried specimen may either be immediately examined, or, if time permits, a permanent mount may be prepared. For this purpose, the stained, washed, and dried smear is quickly flooded for a second or two with ninety-five per cent. alcohol. This has the effect, not only of dehydrating it, but also of washing out some of the excess dye from the cell protoplasm and the mucoid substance. As soon as the alcohol touches the purple smear the latter turns bright blue and the draining drop is tinged a bluish color. If an excess of alcohol, especially an impure alcohol, is allowed to act upon Unna's polychrome, it not only destroys the scale of colors, but makes the cell bodies too pale for satisfactory images. The alcohol is therefore at once to be blotted off with a pad of filter paper and the specimen then to be soaked either in xylol or in Dunham's mixture (oil of cloves and oil of thyme) for a few minutes. This clears the specimen and renders it transparent. The excess of clearing agent is then blotted off, and the specimen is mounted in balsam in the usual way.²

Routine Method of Staining Shreds.—To sum up the method of staining shreds for routine work (not for the differentiation of gonococci):

(1) Fix with alcohol and ether for ten min-

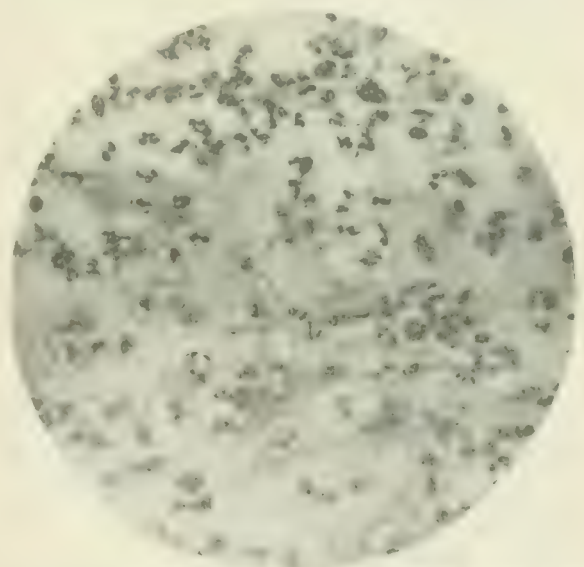


FIG. 4.—Mucopus shred, showing arrangement of cells in matrix and sparsely settled pus cells. (249x).

utes (or imbed in collodion; dry, and soak in water for ten minutes).

(2) Stain for one to two minutes in Unna's polychrome methylene blue.

(3) Wash well in distilled water. Dry.

(4) Dehydrate for a few seconds in ninety-five per cent. alcohol. Dry with filter paper.

² For specimens stained with hæmatoxylin and Van Gieson's solution I use the following modification of Dunham's mixture: oil of cloves, 2 cc.; oil of thyme and carbolic acid, 1 cc. each. This is an excellent clearing agent, but is not to be used with Unna's stain, as it changes all the purples to a uniform greenish blue, and decolorizes the cell bodies to a marked extent.

(5) Clear in xylol or in clove-thyme mixture. Dry with filter paper.

(6) Mount in balsam.

Classification of Shreds.—The most accepted classification of shreds is that of Guyon and Hallé (5). Three varieties may be distinguished: Pus shreds, mucopus shreds, and mucous shreds. This is a very convenient division, but as many

including gonococci, streptococci, staphylococci, bacilli, etc., from the urethra.

The pus cells constitute from 90 to 95 per cent. of the bulk of these shreds. At times they are so closely packed as to mask all other elements and are arranged in rows of astonishing regularity. In most cases, however, (as in Fig. 2) the pus cells are grouped in masses or smaller groups separated by a fairly homogeneous basement substance in which are also imbedded singly or in small groups characteristically altered epithelia from the urethra.

The matrix or basement substance is probably composed of the coagulated fluid portion of pus. It stains a pinkish violet or lavender tint with polychrome, quite distinctly from any other structure. Very frequently it is arranged in strands and small islets which very closely resemble embryonal connective tissue, without, however, showing the staining qualities of the latter with Van Gieson's stain (Fig. 2).

The epithelia found in shreds deserve special attention, and were the object of detailed study in this investigation. Pus shreds contain imbedded among the other elements a varying number of normal urethral epithelia. These are featured in Fig. 8, sub. A, and are round, oval, cuboidal, columnar, rarely cylindrical, with distinct nuclei and granular cell bodies. In addition to these normal epithelia, pus shreds also contain, especially in the more advanced cases some epithelial cells which show more or less marked changes in structure.

In 1879 Favre (7) described certain changes

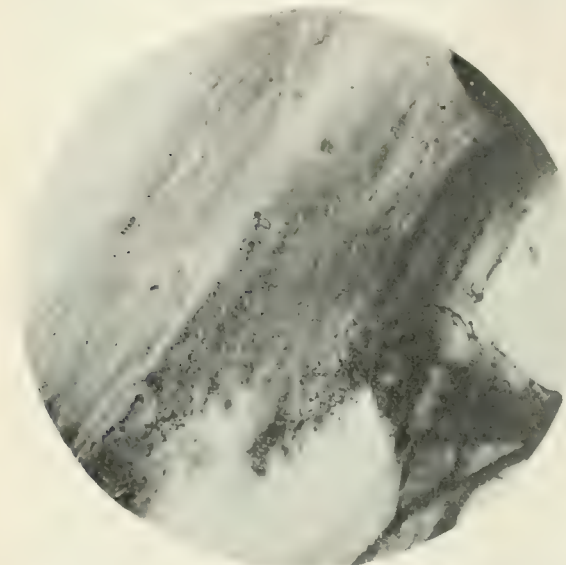


FIG. 5. Mucous shred in a case of chronic urethritis with glandular lesions, showing stratification of matrix and remnants of pus cells ($\times 147.5$).

transitional forms are seen, the classification must be regarded as arbitrary. A fourth variety should be added which is mentioned under various names by several authors, but which I prefer to call the epithelial shred from its chief anatomical constituent. As I will show later, I include in this variety, not only a mixture composed of pus cells and epithelia and mucus, in which epithelia are in the majority, but also a shred absolutely composed of epithelial tissue. In addition to urethral shreds proper, there are several special forms which belong to the prostatovesicular system, and which will also be briefly considered.

I. Urethral Shreds Proper.—The characteristics of the four varieties of urethral shreds mentioned before are sufficiently well marked as a rule to admit of a naked eye diagnosis, though the microscope is a safer guide to their identity.

1. *Pus Shreds.*—These are so heavy that they fall readily to the bottom. Their weight is in proportion to the closeness with which their constituent pus cells are packed. They are dense, opaque, yellowish white, often thick and shaggy, rather shorter than the other varieties, or at least so friable as to break up into short pieces on shaking the vessel. They tend to fuse into a conglomerated mass at the bottom. When spread on a slide they look like thick smears of pus. On microscopical examination three classes of structures are distinguished in these shreds: Pus cells, a basement substance, and urethral epithelia. (Figs. 1 and 2). In addition they frequently contain one or more varieties of germs,

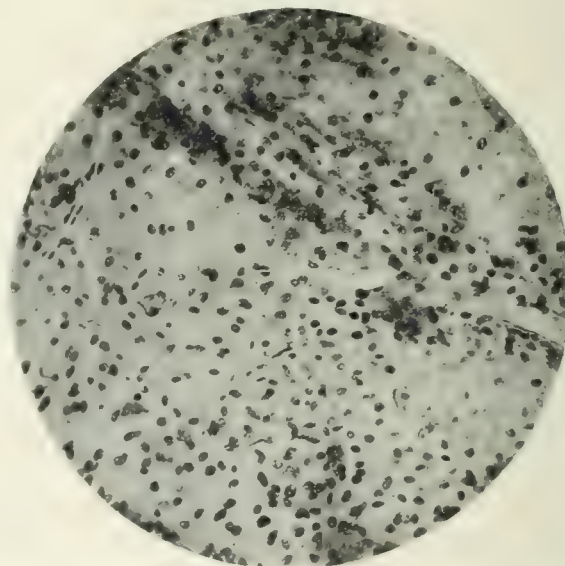


FIG. 6. Pure epithelial shred in a case of chronic urethritis with hard infiltration in the bulbous urethra, showing pavement of cells and no pus ($\times 147.5$).

in epithelia from the normal urethra, which he likened to hyaline degeneration. In 1882 Zeissl (8) was the first to speak of these changes in connection with urethritis. In the following year, Fürbringer (*loc. cit.* 4) studied at great length the hyaline degeneration of epithelia in chronic urethral discharges and in shreds. He found that a certain proportion of the epithelia changed to pale, homogeneous disks which were

iodophile, that is, they stained a dark brown, while the surrounding pus cells and the other epithelia stained a light yellow when a dilute solution of iodine (Lugol's) was added. Fürbringer does not pay much attention to methods of staining with aniline dyes and does not find any difference in the staining properties of these degenerated cells, save that the iodophile cells as-

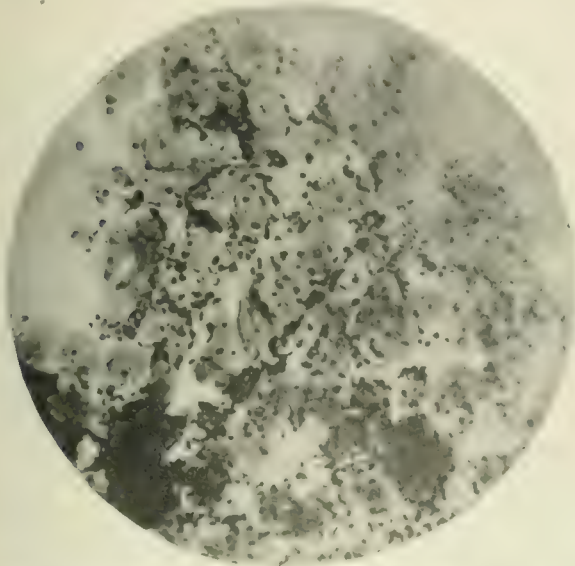


FIG. 7.—Epithelial shred from a case of stricture, 12 P. at P. S. junction, showing flat epithelia and pus cells ($\times 167.4$).

sume, in some cases, a reddish tint with gentian violet, as in the amyloid reaction.

In examining a large number of all varieties of shreds stained with various methods, especially with polychrome methylene blue, I have been able in many instances to identify epithelia undergoing hyaline changes by their staining properties with the aniline dyes. The iodine reaction was used in unstained shreds for control. I found that in pus shreds from old cases of chronic urethritis, especially cases in which there had been several attacks there were numerous epithelia which stained rather diffusely, without chromatic distinction between nucleus and protoplasm, assuming with the polychrome a reddish violet or even a reddish tint. (Fig. 3). They are quite distinct from the normal cells in staining properties, as the latter show a deep purple nucleus and a pale, bluish violet body. There is every reason to believe that these cells are the iodophile cells of Fürbringer.

It has been the custom with a great many writers, even in modern textbooks, to speak of fatty degeneration in the epithelia of shreds. In the course of the present study I have but very rarely seen any cells which could by a stretch of imagination be said to be in a state of fatty metamorphosis, and though puzzled at first, I found on looking up this point that Fürbringer denies that fatty degeneration occurs in these cells, admitting, however, that some fat granules are found within the epithelia. It would be interesting to follow up this question by attempting to stain shreds with osmic acid or some other selective fat stain.

In addition to normal urethral epithelia, and

to hyaline or iodophile epithelia there are occasionally seen in pus shreds some flat or squamous epithelial cells with small nuclei (Fig. 8, sub. B), which will be described later.

2. *Mucopus Shreds*.—These are longer, more wavy or twisted, very irregular in shape, thinner, more translucent, grayish white in color and show faint whitish longitudinal streaks and occasional larger opaque nodes. Sometimes they are queerly twisted and curled as they float, and sometimes one of their ends is rolled up into a little knob—a circumstance which has been made much of by some writers. When one tries to remove them with forceps or needle they are so slippery that it is not easy to catch them. When caught on a platinum wire they shrink up into a little viscid ball, and form a grayish streak on a slide when spread out.

Microscopically, these shreds consist of a matrix of mucoid material which, however, is distinct from that composing the next group, the mucous shreds. The mucoid matrix of the mucopus shred stains a pale, reddish violet with polychrome and is closely allied to the matrix of the pus shred. Indeed, I believe that it can be said to occupy a place between the basement substance of pus and the frankly mucoid substance of mucus shreds. In mucopus shreds it has also a tendency to fibrillation, but is always more abundant, while the cellular elements are in the minority (Fig. 4). The pus cells are embedded or enmeshed singly or in small masses,

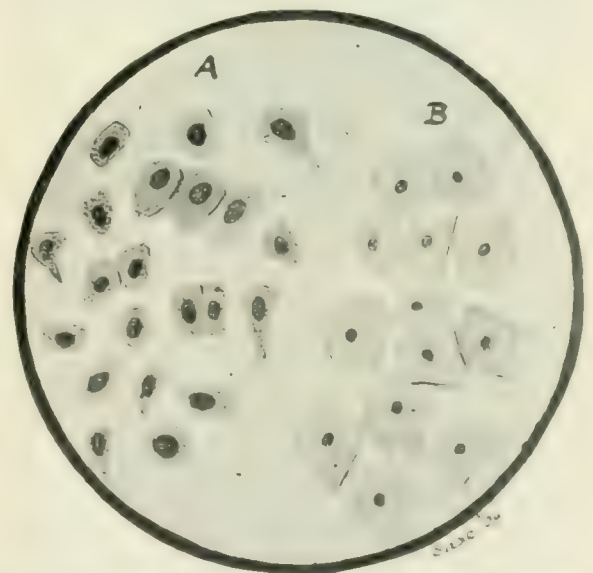


FIG. 8.—Epithelia found in shreds: A, normal urethral epithelia; B, flattened flat cells from the superficial layers in the stage of hard induration.

and frequently have faintly stained bodies and fragmented nuclei, showing the beginning of disintegration. The epithelia are sometimes very numerous, justifying the appellation "epitheliomucous shreds." On the other hand, they may be scanty, especially in the transition forms of mucopus shreds which approach the pure mucus type. The changes in the epithelia seen in the mucopus shreds are the same as those already described in pus shreds, save that in the former

there is usually a greater proportion of altered cells.

3. *Mucous Shreds*.—(Fig. 5.) These are the lightest of all shreds and persistently float at or near the surface of the fluid. They are seen with difficulty and are almost transparent, with very faint grayish striations. They are long, thin, usually appear singly and shrink up into a very small ball of clear mucus when taken up with a needle. Microscopically they consist of a mucoid matrix arranged in fibrillated layers, and staining a deep mauve with polychrome, in contrast to the lighter shade obtained on staining the matrix of pus shreds. Within the lamellæ and strands of mucus there are almost always a few epithelia which show distinctly by contrast, assuming a bright pale blue tint. (The latter show as white specks surrounded by a dark rim in the microphotograph.)

4. *Epithelial Shreds*.—This term I propose to

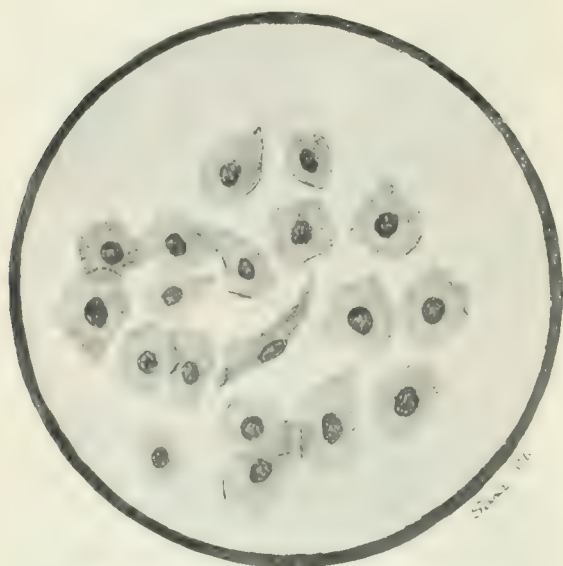


Fig. 6. Epithelia from the fossa navicularis.

apply both to shreds composed of pure epithelium and to shreds with a large number of epithelia and some pus. True epithelial shreds should be carefully distinguished from mucopus shreds in which the traction of the elastic matrix has drawn the pus cell into spindleshaped forms which are easily mistaken for epithelia. True, epithelial shreds are comparatively rare. They are scaly or flaky, thin, semitransparent, grayish or faintly yellowish white and sink quite rapidly. At times they reach considerable sizes, in which case they wrinkle and look almost like bits of desquamated epidermis.

These shreds are composed simply of a pavement of large pale, flat cells with very small rounded or oval nuclei (Fig. 8). They show no cement substance, the cells seemingly clinging to one another, occasionally overlapping. The cell bodies are pale, faintly granular and are not the seat of fatty changes, but occasionally show some fat globules.

Fig. 6 shows an epithelial shred of this type. The cell bodies are stained so pale sometimes that their outlines are difficult to reproduce pho-

tographically, but the detached epithelia on the edges of the shred show that they are composed of the squamous type of epithelia which is figured in Fig. 3, sub. B, and which occasionally is found also in other forms of shreds.

Although the epithelia in this type of shreds resemble the squamous cells from the fossa navicularis, they are distinguished from the latter by their smaller nuclei and paler bodies. Fig. 8 shows some navicular cells for comparison.

As the urethra is lined throughout with stratified cylindrical and cuboidal cells, it is difficult to understand at first glance how such shreds are formed. The only part of the urethra lined with squamous cells is the fossa navicularis, and we have seen that this fossa is lined with different cells.

Although their constituent flat cells have been described by Guyon, Fürbringer, and others as occurring in shreds, I have never seen the purely epithelial shreds described as such. Their formation however is very clear from a study of the changes in the urethral epithelia occurring in stage of hard infiltration of chronic urethritis. These changes were first described by Neelsen (9) later by Baraban (10), by Vajda, and Wassermann and Hallé (11). Under the influence of the gonococcus (Baraban) or as the result of the cicatricial contraction (Neelsen) in the submucosa, the cylindrical or cuboidal cells composing the superficial layers of the urethral mucosa are converted into stratified flat or squamous cells, such as are illustrated herewith in the epithelial shreds (Fig. 6, and Fig. 7). This change in the epithelia is most marked in the advanced stages of chronic urethritis, and is present either in localized areas or diffusely throughout considerable portions of the urethra. The shreds of pure epithelial type (Fig. 6) are to be looked for especially in patients who are undergoing treatment with urethral dilatation or with local applications of silver nitrate through the endoscope. Thus, I have found them regularly after painting the mucosa in the region of a hard infiltrate with a 10 per cent. solution of silver nitrate through the urethroscope, while they disappeared when intraurethral instrumentation was suspended. They are seen however without any direct urethral treatment in patients with hard infiltrates with or without strictures.

Fig. 7 represents the second variety of epithelial shred, in which there is a certain proportion of pus cells. It is more loosely knit than the pure epithelial shred in Fig. 6, and is somewhat more yellowish and more shaggy.

The second type of epithelial shred (Fig. 7), mixed with pus cells, is seen in cases of stricture and is derived from the peristriktural or retrostrictural inflammatory areas.

A word may be added as to the presence of gonococci in shreds. The frequency with which these germs are found is directly as the proportion of pus and inversely as the proportion of mucus and epithelia. This is a general rule with but few exceptions. These are chiefly in prostatic shreds, where this rule does not hold. I have never seen gonococci in epithelial shreds.

II. *Prostatic and Vesicular Shreds*.—In contrast

to the shreds thus far described, shreds from the prostate and the prostatic urethra cannot be identified with the naked eye. I make this statement after a thorough consideration of my findings in a large number of cases in which the localization of these shreds was proved by the microscope and other tests. Shreds from the prostatic urethra and from the prostatic ducts bear the same outward appearance in most instances as those of the anterior portion of the canal. They belong either to the pus, the mucopus, the mucous or the epithelial types, and the only way they can be localized in the posterior urethra is by one of the clinical tests with several glasses or by finding spermatozoa or other characteristic elements in them under the microscope. I have not been able to verify the statements of Kollman and Oberländer (*loc. cit.*, 6), that prostatic shreds are characteristically longer, more uniform in thickness, and consist of alternating transparent and opaque material. There are, however, some special forms of shreds derived from the prostate and the vesicle which require detailed consideration.

Proceeding from the posterior urethra we have the following special varieties under this heading: A. Collicular or prostatourethral shreds; B. Comma shreds; C. Mucopus prostatic shreds; D. Vesicular shreds, either of the mucous or the mucopus varieties.

A. *Collicular Shreds*.—The region of the colliculus seminalis is lined with epithelia similar to those lining the prostatic duct. A special form of shreds, probably derived from this region has been described by Oberländer as a delicate curled affair, usually quite short, consisting of a tube-like cast of epithelial cells. It is found in the urine in cases of congestion of the colliculus seminalis and the posterior urethra, and is difficult to detect unless the urine is fairly free from other shreds. I have seen but four cases out of several hundred examined in which I could identify this shred, the patients being sexual neurasthenics without any venereal history whatever. They all had small meatuses and great tenderness in the posterior urethra, giving rise to premature ejaculations and partial impotence. Personally, I am inclined to regard these shreds as derived from the congested prostatic ducts, as they are identical with similar but smaller masses of epithelia found once in a while in the discharge of prostatorrhœa or after massaging the prostate.

B. *Comma Shreds*.—Under this name the textbooks speak of a short comma shaped shred, which is said to be characteristic of chronic prostatourethritis and to be derived from the prostatic ducts. This is a misleading statement unless properly qualified. Originally it was evidently made upon the basis of Fürbringer's researches, but was copied without comment by many authors. As a matter of fact the comma shreds proper, which were first described by Fürbringer are found in the urine in a limited number of cases. They consist microscopically of epithelial masses arranged in two layers, the outer consisting of large cylindrical, the inner of smaller rounded stratified cells (Fürbringer, quoted by Finger (12). These shreds are pres-

ent in the second glass in Thompson's test and sometimes in massage-urine. They are the true comma shreds which indicate the involvement of the prostatic ducts. I have never found them to contain any gonococci, although it is not impossible, of course, that they may lodge these germs.

Another variety of comma shreds which have not necessarily anything to do with the prostate or the prostatic urethra are mucopus shreds from the urethra which roll up into a clump at one end while being carried away by the stream of urine. It is these which have carelessly been mistaken for comma shreds by some observers, and the distinction between them and Fürbringer's comma shreds is difficult to make with the naked eye, save perhaps that the false shreds are larger and heavier and are stringy when placed on the slide. The microscope shows them to be composed of the same elements as the mucopus shreds. I have among my collection of specimens transition forms of mucopus shreds with one end rolled into a ball in which the genesis of the comma formation is clearly shown. The

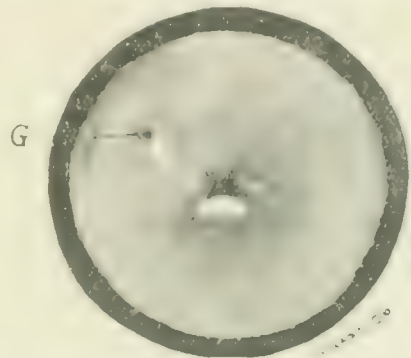


FIG. 10.—Chronic urethritis. Urethroscopic field showing one of the lacunae (G) in a state of chronic inflammation. A white fragment of shred was found adherent in the neighborhood of the gland. Anterior urethra, four inches from meatus.

false comma shreds sometimes contain gonococci.

C. *Prostatic Mucopus Shreds*.—These correspond to the urethral mucopus shred, save as regards two special microscopical features: The frequency with which they contain adherent or imbedded spermatozoa or fragments thereof, and the occasional presence of groups or masses of cylindrical prostatic epithelia. As I said before, cylindrical epithelia are very rarely found in urethral shreds proper. Minute droplets of a fat-like substance, probably lecithin, are also found in these shreds and assist in identifying them. These shreds at times contain gonococci which can be identified with Gram's stain.

It will be asked, naturally, what the source of the spermatozoa can be if these shreds are not vesicular but prostatic in origin. This is explained by the fact that spermatozoa very readily get into the prostatic ducts during sexual excitement and are retained therein until opportunity comes for exit (13).

In order to localize these shreds I studied specially a series of cases of chronic urethrostomatitis in which I sought to eliminate shreds from all other sources than the prostate. For

this purpose I irrigated the anterior urethra through a soft rubber catheter until the fluid ran clear, then passed the catheter into the posterior urethra, washing this portion, and finally passing the catheter into the bladder and washing the latter, leaving about five ounces of fluid therein. After gently massaging the prostate the patient was allowed to empty his bladder, the contents of which carried away the massaged prostatic shreds, which could be studied and identified without difficulty.

D. *Vesicular Shreds* in my experience are of two varieties:

Mucous Vesicular Shreds: They occur in spermatorrhœa, and look like the mucous shreds of urethritis. They are simply strings of a mucoid substance containing many spermatozoa and a varying number of cuboidal and cylindrical epithelia, among which are occasionally found the tall ciliated cylindrical cells, singly or in pairs, from the ejaculatory ducts.

Mucopus Vesicular Shreds: These are indicative of chronic vesiculitis and are obtained by massaging the vesicles rather vigorously. They are thick, skin-like and often very large and bulky, looking like pieces of egg membrane, in massage-urine. On being taken up with a needle they collapse into large thick lumps of glairy mucus, which are difficult to spread on the slide. Examined in the fresh state under the low power, they are seen to contain innumerable spermatozoa lying immobile in a mucoid matrix which is studded here and there with pus cells, with cuboidal epithelia and occasionally shows a large pale cell, a spermatoblast from the testis. Numerous highly refractive granules are also found in these shreds. In rare instances they may contain gonococci, but much more frequently they contain streptococci or other varieties of cocci or bacilli, among which the possibility of the colon bacillus must be borne in mind, inasmuch as this germ may get into the vesicle from the rectum.

Localization and Clinical Meaning of Shreds:

Having thus described the various types of shreds which are sufficiently distinct to allow either macroscopic or microscopic recognition, the question arises how and to what extent can we utilize this knowledge, firstly in the localization of the affection; secondly, in the diagnosis of the stage of the disease and, thirdly, in the prognosis of our cases.

Localization:

As to localization, I must frankly admit that neither the unaided eye nor the microscope can give a clue as to whether a shred comes from the anterior or the posterior urethra, save that in shreds from the posterior urethra there may be an accidental admixture of spermatozoa. Therefore, so far as urethral shreds are concerned, we must rely, as heretofore, upon the two glass test or its modifications (Jadassohn; Kollmann; Wolbarst) for the solution of this important diagnostic problem. The localization of prostatic or vesicular shreds is less difficult, but can be made only by microscopical examination, on the basis of the characteristics described above.

The Stage of the Disease.—A great deal can be

determined by the examination of urethral shreds as to the stage of the process. Here the study of the cases which I had the good fortune to follow for a long time, in some instances for several years and especially the urethroscopic controls made in selected cases led me to conclude as follows as to the significance of the various types of shreds.

The urine in a case of primary gonorrhœal urethritis will usually show the presence of shreds in the order in which they have been considered before, namely: Pus shreds, mucopus shreds, mucous shreds, and epithelial shreds. We shall see later, however, that this rule is not an absolute one, although the classical order may well be borne in mind.

Pus Shreds: They are indicative of a subacute or chronic exudative process. They are the first signals of chronicity and appear in the chronic stage whenever an active inflammatory process is going on, reappearing when an exacerbation of the process occurs. The microscopic pictures of pus shreds varies with the stage of the process. At first, at the beginning of the chronic stage they are little else than coagulated masses of pus cells with epithelia. Later the shreds become denser, thicker, being composed almost solely of closely packed pus cells. As the inflammatory phase declines they become more elastic, less friable and contain an increasing number of altered epithelia, which, with the pus cells, are embedded in a fibrillated matrix. (Fig. 2). The gradual elimination of pus cells and the increase of epithelia and mucous matrix brings these shreds closer to the next variety.

Mucopus Shreds: They are first found in the urine when the chronic process begins to assume the catarrhal type, receding from the suppurative type indicated by a pus shred. It is especially in this stage that the glandular involvement (Fig. 9) first comes to the fore. Of all types of shreds the mucopurulent ones are the most frequent and the most persistent. Under appropriate treatment, however, the exudative inflammation gradually disappears, and the catarrhal phase frankly sets in, the shreds passing now into the next variety.

Mucous Shreds: These are expressive of the chronic stage of soft infiltration with localized glandular involvement of the urethra. The superficial layers of the urethra gradually heal, leaving a glandular catarrh. The more deeply seated lesions now begin to develop and the mucous shreds gradually diminish in number and may finally disappear.

If the process now heals and if after proper treatment a restoration, at least in part, of the mucosa takes place, no further shreds will be noted, save perhaps the one persistent morning shred of pure mucus which Guyon teaches us to look upon as normal, but which the "irrigationists" regard as their *bête noire*. If, on the other hand, as is usually the case, the stage of hard infiltration with its changes in the deeper layers of the urethral wall takes place, then epithelial shreds are seen. The same holds good when the chronic process remains localized in one or more places and instead of permanently healing per-

sists in the form of eroded patches or ulcerations. In such ulcerated types we are more apt to have epithelial shreds mixed with pus and containing cells from the deeper layers of the urethra. These shreds are also often seen in cases of stricture, in which they are derived from the region immediately behind the constriction.

Shreds of flat epithelia without any pus, such as are represented in Fig. 6, are indicative of the beginning of the sclerotic stage or the stage of hard infiltration, and may be shed either spontaneously or as a sequel to instrumentation. Their method of formation has already been discussed. Epithelial shreds with pus (Fig. 7) show the presence of ulcerative or of strictured areas developing on the basis of a hard infiltration.

Such then is the typical evolution of shreds in chronic urethritis. Of course, I do not intend to say that this schematic progress occurs in every case of chronic gonorrhœa. This possibility is excluded by the very character of the disease. Thus, if an acute exacerbation occurs in the course of a chronic case, we may have a reappearance of shreds which had formerly been present. We may moreover have more than one variety of shreds in the same specimen, all parts of the urethra not keeping equal pace in the progress of the trouble. In other cases the process may unexpectedly extend to the posterior urethra, the prostate or vesicles, after having for a long time remained localized anteriorly, adding some new varieties of shreds to those noted at a previous visit. In a secondary infection also, one may find shreds due to the old attack in addition to those due to the new.

In broad lines, however, the significance of the four varieties of shreds as to the stage of the disease can be fairly well determined if the sources of error noted above be excluded.

Prognosis.—In the prognosis of urethritis the study of urethral shreds has distinct but limited application, thus, we know that if the number of shreds diminishes, and if they are approaching more and more the mucous type that the treatment is doing some good. Very often the surgeon is inclined to give a good prognosis when the urine contains but one shred of the mucous type floating near the surface of the urine. Experience teaches us that this apparently final shred by no means marks the death knell of the disease. If the patient be told to return in a month he often presents himself with the urine loaded with various types of shreds as the result of a relapse or a complication. Before declaring a patient cured, especially before sanctioning marriage, one of the precautions taken should be repeated examinations of the shreds which must be purely mucous and must contain not only no gonococci, but not even any pus cells for a number of months, even when the patient drinks beer as a test.³

Summary and Conclusions:

(1) The scanty references to shreds in most textbooks led me to a detailed study of these ele-

ments in a large number of cases of chronic urethritis, prostatitis, and vesiculitis.

(2) Shreds are best studied after proper fixation in stained specimens according to the methods outlined, Unna's polychrome stain being the preferred reagent for routine work and Gram's stain when gonococci are to be demonstrated.

(3) Urethral shreds proper may be divided into four varieties: Pus shreds, mucopus shreds, mucous shreds, and epithelial shreds, each of which have special naked eye and microscopic characteristics.

(4) Several varieties of altered epithelia are found in urethral shreds. Those undergoing hyaline changes may be identified not only by the iodophile reaction, but by a peculiar degeneration as shown by their staining qualities with polychrome methylene blue.

(5) Shreds composed of pure epithelia consisting of flat pavement cells with small nuclei are shed spontaneously, or after instrumentation, in the stage of the disease in which the superficial layers of the urethra become lined with squamous cells under the influence of subjacent, sub-mucous lesions.

(6) Shreds from the prostate and vesicle include several special varieties which can be recognized under the microscope, but cannot be identified with the naked eye.

(7) The so called comma shreds in reality may be one of two varieties of structures. The true comma shred of Fürbringer consists of hooklets of stratified epithelia, derived from the prostatic duct. A false variety of comma shreds is composed of bits of mucopus shreds which roll up into a lump at one end.

(8) The frequency of gonococci in urethral shreds is directly as the proportion of pus cells, and inversely as the proportion of mucus and epithelia in the specimen. This rule does not apply to prostatovesicular shreds.

(9) The study of shreds is not of great value in the localization of the affection in the anterior or the posterior urethra. The presence of prostatic or vesicular shreds which can be recognized microscopically is an aid to the localization of the process.

(10) The study of urethral shreds is most valuable in determining the stage of the process, the order of appearance being, with certain reservations, as follows: Pus shreds; mucopus shreds; mucous shreds; and epithelial shreds.

(11) In the prognosis the variety of urethral shreds present can have but a limited use. My study could add nothing to the well known rules. The fewer the shreds and the fewer the pus cells therein the better the prognosis. The larger the number of gonococci and of pus cells the worse the prognosis is as a rule. Marriage should not be sanctioned unless the terminal shred or shreds contain no pus cells for months, even after provocative measures such as the drinking of beer.

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¹Page 1 and 2 are from photomicrographs taken from my slides by Dr. Henry Kreuder; figs. 5 and 6 by Dr. James Stebbins, to both of whom my indebtedness is acknowledged with thanks.

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214 WEST FORTY-FOURTH STREET.

THE ACCESSORY SINUSES OF THE NOSE FROM THE RHINOLOGICAL STANDPOINT.*

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Washington, D. C.

The consideration of the subject assigned to me is a broad one, and one which can only be treated in a general way in a paper of this character. One of the most constant of all symptoms arising as a result of chronic infection of the accessory sinus is the presence of pus in the nasal cavities. This pus is usually found in the anterior portion of the nasal chambers in the olfactory cleft, or issuing from these chambers into the nasopharynx. The presence of pus in the anterior portion of the cavities, coming from the immediate neighborhood of the middle turbinate would indicate disease of one of three sinuses, viz.: the maxillary or the frontal sinuses or the anterior ethmoidal cells. It is quite possible that pus in this neighborhood may indicate a pansinusitis involving all the sinuses mentioned. The differentiation of which sinus is diseased from the location of the purulent discharge, the physical character of the pus, and the method of its flow is not always easy. Pus flowing well anteriorly is indicative of frontal sinus infection, that which flows over the middle of the inferior turbinate points toward antral infection. Blocking off of the various sinus orifices and noting the arrest or continuance of discharge aids somewhat; as well as the influence of posture on the flow. Killian lays much stress upon the green color of the pus from the frontal, but in my experience little diagnostic value is to be placed upon the physical characters of the discharge. Hajek states, and it is also borne out by my experience, that the secretion from the ethmoid cells is very prone to incrustate. Discharges noted in the olfactory cleft, the posterior portion of the nasal cavities, or issuing from them into the nasopharynx is indicative of disease of the posterior group of ethmoid cells or of the sphenoid sinus. The purulent flow from the posterior group of ethmoid cells or the sphenoid sinus is usually observable, issuing just beneath the upper margin of the choanæ and accumulating on the vault of the pharynx. Occasional antral discharge takes a posterior course, due to a

large accessory antral opening, but then the discharge is noted coursing over the posterior extremity of the inferior turbinate and the upper surface of the soft palate. Intermittence in the flow of discharge being more copious when the patient assumes the Franckel posture is suggestive of its antral origin. Odor is a sign, appreciated by the patient alone, frequently intermittent in character, of disease of the sinuses. Odor is most constant in diseases of the maxillary sinus, comparatively rare in affections of the other sinuses. Oftentimes intermittent odor noted in one nasal cavity in which there is no observable lesion, without even the visible sign of purulent discharge, is a strong presumptive suggestive symptom of infection of the maxillary sinus upon the side in which the odor is appreciated. The nasal cavities do not usually show any alteration in their structural integrity, excepting that due to the hypertrophy of the mucous membrane, occasionally produced from the irritation of the purulent discharges and the obstruction sometimes produced by the presence of mucous polypi.

Pain is frequently present in sinusitis. Pain may be present throughout the history of any sinus infection or it may be as consistently absent; it may be constant or intermittent in character when present. Pain when present may be of neuralgic origin, may be due to accumulated discharges under pressure, or may be due to the evolution of gases from the purulent discharge within the sinus. The location of the pain forms very suggestive evidence of the sinus affected on many occasions, but at times it is very misleading. In chronic antral suppuration pain when present is most frequently a diffuse headache, supraorbital in location; in chronic frontal suppuration the pain is distinctly supraorbital, most frequently with its maximum of intensity over the inner border of the superciliary ridge radiating outward towards the temporal region; in chronic ethmoiditis the pain is frontal, deep orbital, and occasionally in the temporal region; in chronic sphenoidal suppurations, pain may be located at the vertex, but occipital headache or painful sensations referred to the back of the eyes may be noted. Tenderness is rarely elicited by pressure applied to the facial wall of the antrum. On the other hand, in diseases of the frontal and ethmoid, pain elicited by pressure made over the floor of the frontal or over the lacrymal bone are signs of considerable clinical value. Lack of time will prevent me from going into the various secondary symptoms, such as cough, mental depression, inability of mental concentration, impairment of memory, melancholia, mild sepsis with moderate febrile disturbances, indigestion, and asthma. The eye lesions are to be considered by Dr. Posey.

The evidences of the existence of disease of one or more of the sinuses communicating with the nasal cavity, as well as the locating of the particular sinus infected is through a process of exclusion. The methods of physical examination of the communicating sinuses is made by transillumination; by explorations through the natural orifices of the various sinuses; by exploration, where possible, through artificial openings surgically made; and by the uses of x ray.

I. Transillumination. I shall not attempt to ex-

*Read at the meeting of the Maryland Association of Physicians and Surgeons and Laryngological Society, Baltimore, Md., April 10, 1907.

plan the method or the procedure, as I feel convinced that you are all perfect adepts in its clinical application. A very dark room is essential for its perfect success. There is no doubt that transillumination is of great value in diagnosing diseases of the maxillary sinus. In my experience it has never failed to show a positive result in a positive case. There is no doubt that transillumination may lead us to err either way in its application to the maxillary sinus; but in the majority of our cases, with other evidences, it forms a most trustworthy auxiliary. As a diagnostic auxiliary in suspected frontal sinusitis transillumination is not of much value. One would hardly be willing to be guided either way by the evidences furnished through transillumination in suspected frontal infection. The reasons for the want of value of transillumination in frontal examinations is given by Logan Turner as follows:

1. One or both sinuses may be absent, and when this anatomical condition exists there is opacity on one or both sides of the skull.
2. A certain proportion of healthy sinuses fail to illuminate; this may occur on one or both sides of the skull.
3. A sinus on one side of the skull may illuminate with less brilliancy than its fellow, although both are perfectly normal.
4. Many sinuses containing pus, and with their mucous membrane thickened and often polypous, illuminate with considerable intensity. The anatomical position of the ethmoid and sphenoid sinuses makes transillumination practically impossible.

2. By explorations through the natural orifices of the various sinuses.

The Antrum.—The introduction of a suitably curved cannula into the natural orifice of the antrum in the hiatus semilunaris is not by any means an easy procedure. When the procedure is possible, and it is in a fair percentage of cases, it gives through the washing out of the cavity very positive evidence of the existence or nonexistence of purulent change therein.

Frontal Sinus.—The exploration and introduction of a cannula into the frontal sinus is not so difficult, and can be accomplished in a large majority of the cases brought under observation. Occasionally it may be necessary to remove the anterior extremity of the middle turbinate to carry out this procedure, but as this is frequently a necessary operation in the subsequent history of the case it is considered a permissible operation. To the proximal end of the rubber tube to which the cannula is attached we may either attach a Politzer's bag, thus driving pus mixed with air, or attach a syringe for washing out the sinus observing the presence or absence of pus in the return water. The positive evidence furnished in this examination is not always conclusive in itself of disease of the frontal sinus, as we can not eliminate the possibility of ethmoidal disease. The greater the quantity of purulent discharge the more likely is it that the larger sinus is infected.

Anterior Ethmoidal Cells.—Exploration of the cells of this region is greatly facilitated through removal of the middle turbinates. Often the middle turbinate contains an air cell which may contain pus or evidence a diseased condition of the mucosa, which will aid us in our diagnosis. Further exploration by pushing aside small polypi or granulation

tissue may liberate pus, thus evidencing disease of the group of cells. The removal of all polypi and granulation tissue should then be resorted to and at a subsequent sitting an attempt should be made to catheterize the cells lying above the bulla by passing the catheter upward and outward. The evacuation of pus is very strong evidence of purulent disease of these cells.

Sphenoidal Sinus.—Exploration of the sphenoidal sinus is comparatively easy at times before, and always after, removal of the middle turbinate. Inspection and probing of this cavity with the middle turbinate in situ is greatly facilitated through the use of cocaine and adrenalin. A probe or cannula may often be insinuated between the septum and middle turbinate by adroit manipulation until it slips into the orifice of the sphenoidal sinus. After removal of the middle turbinate the orifice of the sinus may be visible, and the issuing of pus from it may be detected should it be diseased. The introduction of a cotton covered probe into the sinus and noting its saturation or nonsaturation with pus; or finally the washing out of the sinus through the cannula will render the diagnosis positive or negative.

Posterior Ethmoidal Cells.—The exploration of these cells is from anatomical relationship almost impossible. Pus issuing into the olfactory cleft or flowing into postpharynx after obstruction of the sphenoidal orifice gives strong presumptive evidence of purulent disease of these cells.

3. By exploration, where possible, through artificial openings surgically made. This procedure is most frequently resorted to in suspected infection of the maxillary sinus, and when it is found impossible to introduce a cannula into the natural orifice of the sinus. The most frequently resorted to method is the penetration of the nasal wall of the sinus below the anterior extremity of the inferior turbinate. When the inferior turbinate hugs closely the nasal floor the point of penetration may be through the same wall into the middle meatus. Various forms of trocar and cannula have been constructed for this purpose. The facial wall in the canine fossa and the alveolar border through the socket of a removed bicuspid or molar tooth are also employed for this diagnostic purpose. In reasonable doubt as to the infection of the frontal sinus exploratory opening of this sinus through its anterior wall is recognized as a legitimate operative procedure. So also is similar exploratory procedure to be adopted in case of doubtful diagnosis with regard to the sphenoidal sinus. The opening in the sphenoidal sinus is made through its anterior wall.

4. By the use of the x ray.—During the past five or six years almost all writers upon the subject of sinusitis have indicated the possible diagnostic value of skiagraphs of the sinuses, but without indicating whether any satisfactory results had been obtained through their own labors or by the efforts of others. Dr. Coakley, I believe I am correct in stating, is the first experimenter along this line in our country to demonstrate through admirably taken skiagraphs the great diagnostic value of the x ray pictures in diseases of the accessory sinuses. At the meeting of the American Laryngological Association at Niagara Falls last summer he made his second exhibition of a great number of admirably prepared plates, which demonstrated to an exactness not only the disease of

the sinus, but which also completely mapped out the outline of the sinuses. Dr. Loeb, of St. Louis, has also done some admirable work along the same line. The sinuses which are demonstrated best through the use of the x ray are those which other methods of diagnosis often leave us still something to be desired to make the diagnosis complete, the frontal sinus and the ethmoid cells. The antrum is pictured as perfectly as the frontal and ethmoid cells in all skiagraphs. It is impossible to gain any assistance from the skiagraph as to the condition of the sphenoid.

1317 CONN. AVE. N. W.

THE ACCESSORY SINUSES OF THE NOSE FROM AN OPHTHALMOLOGICAL STANDPOINT.*

BY WILLIAM CAMPBELL POSEY, M. D.,
Philadelphia.

The subject of this address is still full of interest, for despite considerable discussion which has been aroused concerning it, since I last read a paper before a conjoined meeting of the Maryland Ophthalmological and Rhinological and Laryngological Societies in March, 1905, it may even yet be considered to represent a new phase of ophthalmology, and one replete with unsolved problems. In my last paper I reported a series of cases of various types of inflammation of the ocular tissues which seemed to me to have arisen as a consequence of disease in the accessory sinuses of the nose, inasmuch as in some patients symptoms of a nasal type preceded the outbreak of the ocular signs, while in all, the treatment of the conditions within the nose either cured or brought rapid and marked amelioration to the conditions within the eye. A few months later, at the meeting of the American Medical Association in Portland, I presented a paper before the Ophthalmological Section, in which I reviewed what had already been done by others in elucidating this subject, and endeavored, as far as I was able in the light of our knowledge at that time, to formulate a symptomatology of the ocular symptoms which diseases of the sinuses might give rise to.

In the eighteen months which have elapsed since the reading of that paper, I have had repeated opportunities to verify the observations which I referred to at that time, in my private and hospital practice. That sphenoiditis and ethmoiditis may excite retrobulbar inflammation of the optic nerve of varying degrees of intensity, and paresis and palsies of the ocular muscles, has been demonstrated by the occurrence of these conditions in cases very similar to those which I reported to you. That displacement of the globe and orbital abscess are occasioned by sinusitis is a matter of almost weekly experience, and despite the warning which was given of the ease with which mistakes in diagnosis may be made in this class of cases, abscesses which pointed in the lachrymal region and which were apparently simple mucocèles of the lachrymal sac, have proved at the operation to have originated in the lachrymo-ethmoidal cells and to be instances of prelachrymal abscesses in at least one case in my own practice. Edema of the lids has shown itself to be a frequent

index of the existence of sinus disease in many instances, and in my opinion the significance of this sign cannot be overestimated.

The conjunctiva has been turgid and studded with follicles in other cases, where the nasal disease seemed to have involved the nasopharynx rather than the sinuses; dendriform ulcer of the cornea appeared to be dependent upon an ethmoiditis in one instance, and change in the refraction of the eye, occasioned either directly by the pressure exerted upon the globe by the wall of a dilated sinus, or perhaps indirectly as a consequence of congestion and spasm of the ciliary muscle, has been observed not very infrequently.

I have not, however, been able to satisfy myself that ocular conditions other than these were actually dependent upon a sinusitis. One case of plastic uveitis in a young man, who was suffering at the same time from an acute purulent ethmoiditis did seem to give testimony to the truth of the statement of Ziem, Fromaget, Fish, and others that uveitis may be due to sinusitis, but repeated examinations of the nasal conditions by competent rhinologists in many other cases of iritis and chorioiditis failed to discover further evidence to substantiate the assertions of these observers. And this, upon reflection, seems strange, for if the sinuses and orbits are exposed by dissection, and the enormous extent of the mucous membrane which lines the nasal cavity is surveyed, and account taken of the intimate relationship which this highly vascular tissue has by means of bloodvessels, lymphatics, and nerves with the tissues of the eye, it does appear extraordinary that disease of this mucous membrane should not excite disturbances in the eye. There must be some controlling mechanism, some peculiar arrangement of the anatomy of the parts of which we are as yet unaware, which protects the eye from participating in these inflammatory conditions, just as there is some subtle mechanism which controls and regulates the intraocular circulation, and makes it more or less independent of that of the general system.

It has been perhaps by reason of this apparent immunity of the eye from involvement in inflammation of the sinuses, and upon account of the absence of ocular symptoms in so great a number of cases of sinusitis that many still doubt that there can be any connection between diseases of the eye and the nose. The extravagant claims which have been made by enthusiasts regarding such an association have also, no doubt, tended to render observers skeptical regarding it.

A fortnight ago I was asked to discuss Dr. Cutler's paper upon the subject under consideration before the Academy of Medicine in New York, and in talking the matter over with him and with others informally, as well as in the discussion of the paper during the meeting, I detected that there was a decided impression that too much had been asserted by certain authors for the connection between ocular and nasal conditions, and that there is a tendency to consider the matter from a very conservative standpoint. And with this spirit and feeling I am in hearty accord, but do not let us, while avoiding exaggeration and unproved conclusions, fail to appreciate what may be readily proved by close and skilled observation. It must be appreciated, however, that the connection between a sinusitis and an ocular inflam-

* Read by invitation before a conjoined meeting of the Maryland Ophthalmological and Rhinological and Laryngological Societies.

mation can often only be made after very skilful and repeated examinations. Until within a very short time many ophthalmologists dismissed the possibility that an ocular inflammation could have originated in a sinusitis, by the patient's declaration that he did not have at the time, or shortly before, a bad cold in his head, or by the statement of an assistant who took but a hasty view at the nares that there was no pus in the nose!

I am not a rhinologist myself, but from what my friends in that specialty tell me in Philadelphia, and from what I dare say the rhinologists who are present will be willing to testify, the diagnosis of a sinusitis is not to be made in that way, and if I am correctly informed, the only positive proof of the existence of a disease of one of these cavities is the discovery of pus in the sinus by catheterization. Then, too, it should be generally accepted that a simple congestion of the sinus without exudation is sufficient to occasion ocular symptoms, for I have seen all of the conditions referred to in the opening paragraphs of this paper, in cases where competent rhinologists had failed to discover any exudate in the sinus whatever.

There is no doubt in my mind that not only are there many ophthalmologists, but that there are rhinologists as well who are still unconvinced of the association which we are striving to establish, for they say, that while it is true that many of their patients who have sinusitis complain in a vague way of pain about the eye, pronounced or even actual signs of disease of these organs seem to be absent. It should, however, be appreciated that the vague symptoms of which the patient complains may refer to very definite ocular lesions, which an ophthalmologist would have no difficulty in discovering. The involvement of the optic nerve in cases of sphenoiditis and ethmoiditis has already been referred to. This complication is not by any means infrequent, and though it is the province of the rhinologist to cure the ocular condition by treatment directed to the sinus, yet it is of the greatest importance that the intraocular condition should be kept under surveillance by an ophthalmologist, so that in the event of the inflammation of the nerve not being relieved by ordinary cleansing treatment, operative opening and evacuation of the sinus may be performed. These are the cases of retrobulbar inflammation of the optic nerve which were observed in earlier years following grippe and in association with catching cold or rheumatism, and in place of the simple and effective treatment directed to the sinus, received active and often depressing and harmful general medication. As a consequence, blindness was the not infrequent result, whereas with a proper appreciation of the circumstances attending the origin of the neuritis, complete recovery might have been the question of but a few days. Such retrobulbar inflammations of the optic nerve as a consequence of sinusitis often follows bathing in cold sea water, and upon account of their frequency and the ease with which they yield to proper treatment and the serious consequences which may arise if the affected sinus is not drained, should not be permitted to escape detection.

Naturally, the ideal person to observe and diagnose the class of cases under discussion would be one who combines ophthalmology and rhinology

in his practice, and yet I feel that all will agree with me that the development of these specialties has attained such an extent that it is almost impossible for one person to be at the same time an astute and skilful specialist in both branches. It is far better for the patient, I think, that the ophthalmologist should refer him to a rhinologist for a suspected sinusitis, and that the rhinologist should seek the aid of an ophthalmologist for the observance of ocular symptoms. Both, however, should be conversant with the local conditions which may arise in the province of each specialty, though he may lack the skill to diagnosticate and treat the same, and there should be a mutual dependence and individual appreciation of every supposed case in which the allied conditions may be operating.

The problem presented by this class of cases is not an easy one, for there is but little except clinical manifestations upon which to found the assertion that diseased conditions in the structures of which we are speaking are in any way dependent upon one another, actual pathological proof being almost entirely lacking. For, although the anatomy and physiology of the region has been greatly developed during the past decade by a series of cross sections and dissections of the skull by skilful investigators, and their results graphically illustrated by plates and charts, the morbid anatomy of the sinuses and the tissues bordering upon them has received but little investigation. But few cases of sinusitis come to autopsy, and in the rare event when a patient can be followed until after death, the opportunity of mutilating the face and obtaining the requisite material for examination, is but seldom afforded. Until we can, therefore, by a process of slow accumulation, gather definite pathological details from autopsies, clinical observations will have to be relied upon. And here, caution and conservatism must be counselled, and what is coincidental or accidental should not be wrongly considered as cause and effect.

Within the past few weeks a young lady consulted me on account of a queer feeling in the left eye and the corresponding side of her face, designating the ophthalmic branch of the fifth nerve as the region involved. She complained at the same time of a sense of occlusion in the left nostril. Suspecting an attack of left herpes zoster ophthalmicus, she was advised to go to bed and obtain proper treatment, but before doing so, I asked Dr. Packard to examine her nose, to discover the cause of the nasal symptoms. A marked congestion of the ethmoidal cells upon the left side was apparent, but there was no deviation in the septum or other obstruction in the nares to indicate a marked static nasal disorder. Appropriate nasal treatment was ordered, the patient placed in bed and antifebrile treatment inaugurated. In a few days the characteristic blisters erupted upon the left side of her forehead and somewhat later a dendriform haze appeared upon the cornea. In this case it might well be said that the herpes was secondary to the nasal affection, and yet in my opinion such a hypothesis would be unwarranted, for the nasal as well as the ocular symptoms were both expressions of the inflammation of the nerve, which was induced not by the ethmoiditis, but rather by an anæmic and depressed condition from which the patient had long been suffering, and from other exciting causes operating at the time she was taken sick.

The erroneous assumption, therefore, that because an ocular inflammation occurs in conjunction with a

sinusitis it is necessarily dependent upon it, must be rigidly guarded against, and the supposition only made when all other sources of origin of the ocular affection have been dismissed, and perceptible improvement has followed the treatment of the intranasal affection.

In the discussion which followed the reading of Dr. Cutler's paper, which has just been referred to, Dr. Coakley said that it was not uncommon for patients with sinusitis to consult an ophthalmologist instead of a rhinologist, on account of the frequency with which headache was present in these cases, and by reason of the widespread knowledge in the community that headache is so often the result of eye strain. This fact was referred to by me in Portland, and I pointed out at that time that under such circumstances the ophthalmologist attributes the symptoms to eye strain and advises refraction, but that by good fortune, the error in diagnosis did not always work injury to the patient, for the refraction test not only often entirely relieves the symptoms, but actually cures the sublying condition, not, however, as was intended by the relief afforded the eye strain by correcting lenses, but by the atropine which was employed to put the ciliary muscle at rest drying up the secretion in the sinuses. In many cases, unfortunately, such desirable results do not follow, and the patient is subjected to a repeated series of examinations which fail to accomplish the purpose and permit the development of chronic conditions in the nose and sinuses, which become intractable to treatment and prolong the duration of the case indefinitely.

I have had the privilege of reading during the past few days the manuscript of an as yet unpublished paper by Dr. N. H. Haskell, of Boston, upon *Variable Ametropia, the Anomalous Subjective Symptoms Found with It, and the Causal Origin Common to Both*. In it he treats of a class of refraction cases where the usual symptoms of headache and eyeache appear in a form modified and distorted as a result of pressure contact existing in the nose. Sixty-five cases in all were observed, and of these the nose was reported normal in five patients, or in 8 per cent., and faulty in sixty patients, or in 92 per cent. Of these sixty cases, adenoids were present in two, and some form of pressure contact in fifty-two patients, or 86.33 per cent. of the total number in which some trouble was found. Operation was performed upon the nose of thirty-eight patients, entire relief to the symptoms was obtained in sixteen patients, partial in nineteen, while three patients were unrelieved. Of the cases operated in, thirty-one were refracted after the operation, in sixteen of them the error was unaffected, while in fifteen it was found to have changed in some way, the change involving either one or both eyes, and the change, as far as Dr. Haskell was able to determine, was a permanent one.

While I am ready to admit that the refraction of the eye may be altered by pressure upon its walls by an exudate or by a distended sinus, or by a change in the lens consequent upon a spasm of the ciliary body due to nervous or lymphatic influences which may possibly arise in the nose, it does appear to me that Dr. Haskell has exaggerated the importance of the nasal condition in refraction errors. Nor can I bring myself to believe that the operations

which were practised upon the nose were justified. Surely a better state of health alone would have relieved the turgescence of the turbinates. Careful estimation of the refraction error under prolonged atropine mydriasis would have definitely determined the refraction, and account would no longer had to be taken of the deviations from the normal in the nasal passages. It has never seemed justifiable to me to attack a local condition by radical measures, which was in all probability excited by some depressed or diseased condition of the system, until the general bodily health had been cared for and improved. There will be no difficulty in breathing through many clogged noses which have had their lumen contracted by a turgescence of relaxation, after the physical tone is improved, and the head and eyeaches will often be relieved just as readily by exercise, cathartics, and alteratives, as by operation. That there are nasal cases which demand the knife before suitable breathing room is obtained, of course goes without saying, but my experience leads me to think that the number is much smaller than Dr. Haskell's figures would lead us to believe.

Finally, I should like to refer very briefly to a class of cases of which I have seen four or five, and which to me at least is obscure. I refer to what appears to be a necrosis of the superior maxillary bone in infants. The children under my care have been about a year old, an abscess having appeared in the face when they were several months younger. The abscesses point in the orbit and in the mouth, and when they discharge leave sinuses which drain a copious discharge for weeks. The children are anæmic and badly nourished. In one instance other skin abscesses were found on the scalp and body. At the operation, extensive necrosis of the floor of the orbit is discovered, and in two instances the anterior surface of the bone was found to be extensively diseased. Although lacking confirmation by any proof of an initial lesion, for I have not made the necessary examination, it occurred to me that the mothers of these infants might have an infected nipple, and that in sucklings a sore developed upon the gums, which later involved the deeper structures of the bone. The condition may, however, arise in the antrum from other causes, and I should be glad to hear the opinion of others.

Such cases demand extensive orbital incision and drainage—and this brings up another point which is of interest to a meeting at which both ophthalmologists and rhinologists are present, and that is, who shall operate under such circumstances? Does it belong to the province of the ophthalmologist to make the incision into the orbit, to open the affected cells and establish drainage, into the nose perhaps if the ethmoidal cells be affected, or should the rhinologist, with his better knowledge of the anatomy and relationship of the sinuses and of the nose assume this responsibility? The rule which I adopt in my own practice is to deliver all cases of orbital abscess which my rhinological friends think they can relieve by operation and drainage through the nose into their hands, but when it becomes a question of incision into the orbit, then I assume the responsibility myself, for the danger of injury of important orbital structures is great. The extent of the dissection of the orbital tissue which may be necessitated can never be determined until the orbit is opened, and

if it be at all considerable, great difficulty is often encountered in its performance. The space between the walls of the orbit and the globe is very narrow and a thorough knowledge of the tissues is necessary before they can be properly differentiated. Under such circumstances, it seems to me at least, that all orbital incisions should be made by the ophthalmologist, though in all cases which might offer the probability of complications, it is highly desirable that he should have the counsel and aid of a rhinologist.

1835 CHESTNUT STREET.

ACID INTOXICATION.*

BY CHARLES G. L. WOLF, M. D.,
New York,

(From the Department of Chemistry, Cornell University Medical College.)

One of the most prominent topics in medicine today has to do with the matter of acid intoxication. I wish to discuss for a few moments the bearings of this view of metabolism on the diagnosis and treatment of certain disorders of nutrition. While I cannot present anything especially new, I can perhaps sift out from a very considerable mass of literature certain facts with which one has to reconcile the theory before it can be accepted either as a basis for future investigation or for clinical treatment.

In order to facilitate the discussion, it might be well to define precisely what is understood as acid intoxication. Acid intoxication may be defined as the toxic effects produced by the administration of acids or the elaboration through a faulty metabolism of certain products of acid character which in themselves produce toxic symptoms so severe as to often terminate fatally. A term which has been used synonymously with acid intoxication is *acidosis*. This is altogether wrong. Acidosis is in itself a distinct entity, and may be defined as the production through a faulty metabolism, or otherwise, of acid products which may, or may not, produce intoxication.

Returning to what is popularly known as acid intoxication one may mention the principal pathological states in which this condition is believed to be found. These are diabetes; acute yellow atrophy of the liver, pernicious vomiting in pregnancy, cyclic vomiting in children, the changes which often follow narcosis, and certain febrile states. It will be noted in passing that, with the exception of diabetes, all the conditions mentioned are associated with diminished food intake. In the case of diabetes one has to do with an incapacity of the assimilation of carbohydrates, so that here also one is dealing with a carbohydrate inanition.

In discussing the question, it is first of all necessary to ask what are the facts at our disposal which warrant one in assuming that acid intoxication is really a clinical state which must be reckoned with in treatment. For this purpose I shall take up the disease in which the findings are most clear in pointing to this type of toxæmia as playing an important part. This is diabetes mellitus.

It is to Naunyn especially that we owe the most of our conception of the present idea of acid intoxi-

cation, the greater part of which is outlined in his monograph on the disease. He was, however, preceded by numerous writers, Stadelmann, among others, who had taken the matter up in diabetes and other affections.

The facts which Naunyn brings forward to substantiate his view are: 1. The appearance of acetone in the urine and in the breath in cases of diabetes. 2. The appearance of acids such as acetoacetic (diacetic) acid and beta oxybutyric acid. 3. The elimination of these acids more or less in proportion to the severity of the symptoms. Coupled with this is: 4. The elimination of large quantities of ammonia necessary to neutralize these acids, and so render them harmless; and 5. the appearance of large quantities of fixed alkalies, potassium and sodium, in the urine. These alkalies are supposed to be derived from the cells, which, being deprived of these very necessary constituents, undergo pathological changes, of which a degeneration, observed on microscopical examination, is one.

Of the appearance of large quantities of ammonia, of organic acids, and of large quantities of potassium and sodium in the urine in cases of diabetes there can be no doubt. What, however, is not quite so clear is that the symptoms of diabetic coma or those which are supposed to make up the syndrome of acid intoxication follow directly on the appearance of these abnormal features in the urine. The facts which speak against these factors being the cause of acid intoxication are somewhat numerous, and the theory will undoubtedly have to be brought into line with these facts before it can be finally accepted.

The appearance of acetone, acetoacetic acid or beta oxybutyric acid in the urine is not confined to diabetes, or in those usually associated with acid intoxication. By the simple withdrawal of food, especially of carbohydrates, man reacts, as a rule, promptly with the excretion of these substances in the urine. The organism is so sensitive to lack of food that an increase in the amount of acetin in the urine may be observed during hours of sleep under ordinary conditions of diet. The amount of beta oxybutyric acid, for example, may be very considerable after simple abstention from food for forty-eight hours, reaching in one case 2.9 grammes in the twenty-four. By the further abstention from food and the consequent consumption of body fat, the amount of beta oxybutyric acid observed by Brugsch may be 12.8 grammes, and in the case of Augusta Viktoria Schenk, examined by Bonninger and Mohr, 24.84 grammes of acid may be eliminated. Moreover, in passing from cases of simple starvation to diabetes, one frequently observes very large amounts of these acids, such as 20 to 30 grammes, which may be excreted for days or weeks. These amounts of acids do not produce any symptoms which may be ascribed to acid poisoning. Moreover, many cases of diabetic coma are on record in which the amount of acid during or before the seizure was small or was sometimes absent. Here we are brought face to face with either denying the acids as being the cause of the coma or else postulating more than one type of coma, which, as a matter of fact, Naunyn has attempted to do.

The second point on which the theory of acid intoxication as the cause of diabetic coma does not hold is the following:

* Read before the Section in Medicine, New York Academy of Medicine, January 15, 1907.

Real acid intoxication is a well recognized experimental and also clinical process. It is produced by the introduction into the system of acids such as the strong inorganic acids. The symptoms which are produced are well known, and are also seen when large quantities of acids are taken in by the mouth. One gets dyspnea, cyanosis, irregularity of heart action, and if the dose is a large one, a fatal termination. As Benedict has shown, for a definite weight of animal and administering the acid at a constant rate, the amount of acid necessary to produce death is a constant quantity.

On closer investigation, one finds some very noteworthy facts. The alkalinity of the blood as measured by ordinary titration methods, had decreased to a definite point, and secondly the true alkalinity of the blood as measured by electrometric methods has decreased below the alkalinity of the purest distilled water. In other words, the blood has actually become acid. But one also comes to the most important difference between death from diabetic coma and death from acid intoxication. It is this. If, while these animals are succumbing to the action of the acid, sodium carbonate is administered intravenously, there is an immediate recovery of the animal. The remedy is in every case prompt and effectual.

What is the case in diabetic coma? An examination of the blood shows in many instances no decrease in the alkalinity as measured by titration, and no decrease in the concentration of the hydroxyl ions as measured by the electrometer. Moreover, in those cases in which a decrease has been found, cases are on record of other conditions in which the alkalinity was much below that of the diabetic cases without any toxic symptoms, resulting from this decrease in the alkalinity.

But the point in which true acid intoxication differs so essentially from diabetic coma is in the reaction to the administration of sodium carbonate. As we have seen the response in the former is immediate. In diabetic coma, although the use of alkalies, both intravenously, and by the mouth, has been so vigorously championed by Naunyn, and has been so extensively employed in clinical practice, no case is on record in which the treatment has proved effectual. That is to say, no case is recorded which will bear the test of strict scientific investigation, and in which all other factors which might have led to improvement have been ruled out. On the contrary, both in the literature and in the clinical experience of most practitioners who have had to deal with this type of coma, it is only too well known that the toxic agent is not affected by the alkali.

Von Noorden in his little brochure on autointoxications says "no one will seriously deny nowadays that the typical coma of diabetes is an autointoxication with beta oxybutyric acid, and that it is the acid character of the body more than any specific toxic property which determines the syndrome of coma." The facts of the case lead one to exactly the opposite conclusion. If the syndrome of diabetic coma were due to the acid property then we should obtain prompt relief by the administration of alkalies, which is notoriously not the case. Moreover, the action of the acid as an acid in diabetic coma is not borne out by the analyses of the blood already referred to. One must therefore seek for some ex-

planation of the cause of diabetic coma other than the action of the acetone acids which are produced.

In passing, a word might be said regarding the method which is commonly employed in speaking of these acids and their toxic effects. An acid owes its property to the number of hydrogen ions which it liberates when dissolved in water. Hydrochloric acid or the strong inorganic acids dissociate very completely in water, that is to say, they liberate a large number of hydrogen ions. Acetoacetic acid and beta oxybutyric acid on the other hand are feeble acids and do not dissociate at all to the extent of the stronger acids. It is therefore manifestly unfair to compare oxybutyric acid with hydrochloric acid either by weight, or molecular weight for molecular weight. This has repeatedly been done in estimating the toxic action of these acids. A gramme of hydrochloric acid might prove rapidly fatal, while on the other hand the same weight of beta oxybutyric acid would have no effect for the reason that this amount of acid in water would dissociate so incompletely that perhaps only one fiftieth of the amount of hydrogen ions would be set free as in the stronger acid.

I have taken up the case of diabetes for the reason that the facts upholding the theory of acid intoxication are most striking, and I have attempted to show the dilemma into which the adherents of this view are led by a consideration of the data at hand.

The facts which are available in other diseases, such as eclampsia and pernicious vomiting, are in no way so convincing as they appear to be in diabetes, and yet the idea has gained a very remarkable foothold in clinical teaching. Some have attempted to explain the presence of small quantities of acetoacetic acid or acetone in the urine as indicating acid intoxication, quite regardless of the quantity and quality of the food which the patient has had in the twenty-four hours previous to the examination of the urine. Others have based diagnoses on the amounts of ammonia and their relation to the total nitrogen. Other acids have been called in to account for the symptoms, among these lactic acid, which in itself is not more poisonous than the acetone acids. The work which has been done with this acid has never been viewed from the standpoint of being the effect of the dyspnea rather than the cause of it.

It seems to me that of all the acids which might be used to explain toxic symptoms, the one which has received the least attention and which is really the most toxic is oxalic acid. This acid is found in the urine and probably in the blood, and yet does not cause any symptoms of toxæmia.

Toxic as this acid is, one never hears it referred to as a causal factor in acid intoxication. Why this is I have not been able to understand. If one ascribes important symptoms to the presence of small quantities of lactic acid, as Zweifel has done, one is equally justified in accepting the same for oxalic acid.

The time allotted to me is insufficient to criticise thoroughly a theory which has such wide spread ramifications as acid intoxication. All I have endeavored to do is to take up one or two vital facts which, as I have said, place the advocates of the theory in a dilemma.

On the surface, the theory of acid intoxication is

altogether plausible, and it also has the advantage of fitting in with certain clinical data. When, however, it is subjected to strict criteria it fails to stand the test. It also has the very unfortunate property of leading one to diagnosticate as toxæmias clinical conditions the urinary symptoms of which are entirely due to insufficient food intake. From this standpoint it is in the hands of many a positive clinical menace. When one attempts to use as a means of diagnosis the detection of trifling amounts of acetone or acetoacetic acid in the urine, one can only say, as Thudichum once very rightly remarked in another, but similar, connection (the determination of urea by the hypobromite method): "It is in fact no analysis at all, but a ceremonious delusion."

NOTES ON APPENDICITIS.

By B. S. TALMEY, M. D.,
New York.

Clinicologist to the Metropolitan Hospital and Dispensary;
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In his paper on appendicitis, read before the Rochester Pathological Society (*New York Medical Journal*, November 10, 1906), Dr. W. D. Ward reports several cases of Koch, Sheen, Eisendrath, and others where abscesses in and near the liver and in other parts of the body were found due to the delay in the operation for appendicitis. That this occurrence is not so very rare is shown by the following two cases with delayed operation where abscesses were found in other parts of the abdomen.

CASE I.—In the first case of a young girl, 19 years of age, I was called in consultation on the ninth day of her sickness, May 30, 1905. The family physician reported that when he first saw the patient, nine days previously, he found her in great distress with high temperature, frequent pulse and severe pain in the cæcal region. His diagnosis was suppurative appendicitis, and he waited for the abscess to be walled off from the general cavity before recommending an operation. I found the patient in a very serious condition, with frequent, feeble pulse, high temperature and intense rigidity of the lower abdomen. I, therefore, advised an immediate operation. Two hours later on opening the peritonæum about a pint of thick fœtid pus gushed out. The appendix was found gangrenous, about two thirds having been dissolved by decay. The rest of the appendix was now removed, the wound drained with a rubber tube and gauze and left wide open. After two months the wound closed and the patient left her sickbed.

Fourteen months later the patient took sick again with pain in the lower abdomen. The examination per rectum, the girl supposed to be a virgin, revealed a mass in the Douglass pouch. This time I recommended her to go to the hospital, and July 14, 1906, I opened the posterior vault of the vagina, and about half a pint of pus rushed out. I drained the wound with two rubber drains. Two weeks later the patient left the hospital cured.

CASE II.—The second case was a boy eighteen years old. He took sick with pain in the back on the right side and in the right epigastrium, four weeks previously, and was treated all this time for rheumatism. His condition did not improve, on the contrary the sensitiveness spread all over the right side. Another physician was then called in who made the diagnosis of appendicitis and sent the patient to the hospital.

At the examination the entire abdomen was found very sensitive and rigid, especially in the lumbar region extending as far as the cartilage of the twelfth

rib and down to the iliac bone. The temperature was 102°, the pulse 108.

On the 30th of June, 1906, the patient was operated upon. On opening the peritonæum the omentum was found to wall off the front of the abscess and I had to ligate and remove a part of it to reach the abscess, which extended from the cæcum to the vault of the diaphragm beneath the liver. The entire appendix had decayed. No more than a piece of the organ, one centimetre long, was left which with the cæcum, omentum, and the loops of the other intestines formed one ulcerated mass. This mass walled off the abscess against the pelvic cavity.

The cavity of the abscess was flushed with normal salt solution and drained with gauze, which was put as high as the diaphragm. Only one suture was put in the lower angle of the wound to keep the intestines from bulging forward. In the first two days after the operation the temperature and pulse went down, but the meteorism increased. The wound was cleansed daily with hydrogen peroxide. On the fourth day diarrhœa set in and kept on until the patient died two days later.

No doubt in this case the abscess between the liver and diaphragm was caused by the delay of the operation for appendicitis, while in the first case the abscess in Douglas's pouch, fourteen months after the operation in an unmarried girl without any specific history may or may not be the result of the former appendicitis.

Now, these two cases would tend to show the desirability of an early operation. Still I cannot reconcile myself to the justice of the remorse Dr. Ward felt for having administered morphine and not having operated sooner upon his patient with severe pain in the epigastrium without tenderness or rigidity, with a pulse of 80 and temperature of 98.4°. I fail to see how he could have acted otherwise than relieve the pain and await developments. The case showed in the beginning less severe symptoms than any case of an everyday bellyache. Thousands of similar cases occur daily without the services of a physician being invoked, and general practitioners see daily hundreds of such cases without ever dreaming to call in a surgeon and submit their patients to a dangerous operation. If in Dr. Ward's unfortunate case, as it later turned out, an immediate operation was needed, that does not say that every bellyache needs one. Because we are not able to make the differential diagnosis between a simple every day indigestion and suppurative appendicitis in a great number of cases, our ignorance ought not to serve us as an excuse to open every painful abdomen in search for appendicitis. How easily a mistake in the diagnosis may be made is shown by the following two cases:

CASE III.—A medical student was suddenly taken sick on the street and had to be brought home in a cab. The pain in the cæcal region grew worse even after he had taken calomel and had had several good movements. I was called in the middle of the night and when I entered the sick room the patient himself had his diagnosis cut and dry and greeted me with the words: "Doctor, I have appendicitis." The pulse was 110; temperature 102° F., and sensitiveness over the appendix, i. e., a classical case of appendicitis. Since the patient had already taken calomel, and I did not think the case required an immediate operation in the middle of the night with all the inconveniences at that time I decided to wait until the following morning, and gave the patient in the meantime some opium to relieve the

pain. The next morning the patient went to college as usual. He is now a practicing physician here in the city for the last seven years, and is still waiting for his operation.

CASE IV.—The other case, pertinent to the subject in question that I wish to relate, is that of a young lady of eighteen years of age, who took sick with pain in the cæcal region. When I called on her the next day I found the region so sensitive that I could not touch it without evoking the most excruciating pains. Hence, the rigidity could not be tested. The temperature was 101° F., the pulse 100. She had taken cathartics with very good results. So I ordered ice on the abdomen and opium internally. Three days later she was well and out of bed. A month later I was called again and found the patient in bed with the same symptoms. I followed the same treatment with the same result. But this time my suspicion was directed upon the genital tract and I began to inquire about her genital functions. I was informed that the former as well as the present attack occurred just a few days before her menstruation. I then advised the patient to be treated with electricity, and a few days later she came to my office for this treatment. The cæcal region was still very sensitive to the touch of the finger when her attention was called to the examination, but I could press the electrode as much as I wanted, and she did not notice it. I then tried the experiment to press with the finger at the sensitive point while diverting her attention by conversation. This time the pressure of the finger also passed unnoticed. My diagnosis was now "antimenstrual neuralgia of the right ovary in a somewhat hysterical person," and I informed my patient in this sense. The result of my candor was that the next month when she again got her attack another physician was called in, and the patient was immediately taken to a hospital and operated upon. A healthy appendix was removed, and the patient still had her monthly attacks, until she got married.

These two cases, among many others, may best serve as an example of the diagnostic difficulties in appendicitis. With all my precaution since I began to devote myself exclusively to abdominal surgery I have still removed quite a few healthy appendices, and the presence of the colon bacillus within them which often serves as an excuse for the removal of an otherwise normal appendix, did not console me in the least. The bacillus being the usual inhabitant of the healthy colon has a perfect right to have its residence in the healthy appendix. In such cases I had always the impression of having uselessly subjected my patients to the dangers of a laparotomy, owing to the impossibility of an exact diagnosis. And I am not alone in this respect. I was present in Hôpital St. Louis in Paris when Richelot opened the abdomen and found a healthy appendix; I was present in the Red Cross Hospital in Munich when Schmidt opened an abdomen and removed a normal appendix, and I was present when the late Mundé, in Mount Sinai Hospital, opened the abdomen and found a healthy appendix. These were and are men with great diagnostic acumen, yet they found conditions they did not expect before the operation.

Therefore, it seems to me, that as long as we surgeons are not always able to make the differential diagnosis between a common bellyache and suppurative appendicitis, as long as we are at a loss to differentiate between gravel in the right ureter and appendicitis, typhoid fever and ap-

pendicitis, fæcal impaction in the cæcum and appendicitis, gallstones and appendicitis, ovarian neuralgia and appendicitis, colitis and appendicitis, etc., we have no right to assume the airs of superiority and scold the general practitioner for not calling us in consultation in every case of bellyache, and lecture our fellow surgeons for having different opinions than ours in regard to the best time for the operation. The conservative surgeon has a perfect right to his claim that in the long run he can show the same amount of success as the radical. The latter may, through an early operation, save a patient whom the conservative surgeon would have lost through his waiting for the diagnosis to become clear. But the conservative surgeon will subject fewer patients to the unnecessary dangers of a laparotomy and to all its sequels. This has been proved by a statistical study of cases of appendicitis made by Dr. Chauvel, the medical inspector of the French army. In 1902, 668 patients apparently suffering from appendicitis were received in the military hospitals of France. Out of this number 188 were treated according to the surgical rite and 480 received purely medical treatment. Of the number operated upon 23 died, while out of the 480 not operated upon there were but three deaths.

Hence, what we need are not lectures when to operate and how to operate in appendicitis, but good instruction to increase our diagnostic skill. As long as the best of us, through the limitations of our medical science not our own fault, may confound appendicitis with a simple bellyache we ought to devote our energies to discover reliable pathognomonic characteristics of suppurative appendicitis. When we will have discovered these desirable pathognomonic signs and they have become common property of the medical profession then, and not until then, will the general practitioner send every appropriate case to the surgeon, and there will be no difference of opinion among the surgeons themselves, when to operate and how to operate.

62 WEST ONE HUNDRED AND TWENTY-SIXTH STREET.

Correspondence.

LETTER FROM LONDON.

The Death of a Great Physiologist.—The Royal Commission on Tuberculosis.

LONDON, February 18, 1907.

By the death of Sir Michael Foster, who died on January 29th, we have lost our foremost physiologist and a man who had done much for the promotion of scientific research in various directions and for the recognition of science by the state and by the people. He had been in failing health for some time, but his death was unexpected. He was in his seventy-first year, an age at which, *pace* Professor Osler, many leaders of thought are doing most useful work. Sir Michael Foster came of a medical family. His father was a country doctor in the district which gave Oliver Cromwell to England, and a brother was for many years assistant

to Sir Henry Thompson, and at the time of his untimely death had won for himself an independent reputation as a specialist in urinary diseases.

Michael Foster was a pupil of William Sharpey at University College, London, and after spending a few years in general practice in his native place he determined to make physiology his life work. He returned to University College, and after two years as demonstrator he was appointed professor of practical physiology in 1869. In the same year he succeeded Huxley as Fullerian professor of physiology in the Royal Institution. In 1870 he accepted the invitation to teach physiology at Cambridge. The medical school of Cambridge at that time was not so much in a state of decay—for it never had been flourishing—as in an embryonic condition. Sir George Murray Humphry, who was professor of anatomy and surgeon to Addenbrooke's Hospital, had begun to breathe life into the study of medicine in the university where so many famous physicians, among them Caius, William Harvey, and Francis Glisson, had received their degree, but not their professional training. The creation of the Cambridge Biological School was, however, mainly the work of Michael Foster; and to him, too, belongs the credit of having given the medical school the impulse which has made it the largest in England.

His own work in original research was limited; the Royal Society's catalogue of scientific papers contains only fourteen entries under his name. It was his stimulating influence as a teacher that made him one of the greatest intellectual forces in Cambridge. From him a large proportion of our modern biologists received their training. He was the author of a well known textbook of physiology; of *Lectures on the History of Physiology*, delivered at the Cooper Medical College, San Francisco, in 1900, of a life of Claude Bernard in the *Masters of Medicine* series, and of some other works written in conjunction with his successor, Dr. J. N. Langley, in the chair of physiology. He was the founder and for many years the editor of the *Journal of Physiology*.

Michael Foster's writings have a charm of style rare indeed in our scientific literature; in this gift he rivalled Huxley. He was for many years one of the secretaries of the Royal Society, a position which places in the hands of the holder a somewhat dangerous amount of power; he can to a large extent not only control the direction of research, but hinder the acceptance of work of which he does not approve or which comes from unacceptable quarters. Complaints used to be heard among the younger pathologists not belonging to Cambridge that, owing to Foster's opposition, they could not get a hearing. There could be no question of Foster's integrity, but if his judgment was sometimes at fault and if he was occasionally swayed by prejudice, this is to say no more than that he had some flaw of human infirmity in his composition.

In 1900 Foster was elected Member of Parliament for the University of London. In the House of Commons he represented science rather than any definite form of political opinion. This of course did not please those who thought that a man should not, as Goldsmith said of Edmund Burke, "to party give up what was meant for mankind." Hence at

the last election he lost his seat. To the medical profession this meant the disappearance of the only man who could hold the fort against the banded powers of opportunism and fanaticism in such matters as antivaccination and antivivisection. Sir Michael Foster did excellent service to the public health as a member of a Royal Commission on Sewage Disposal, and as chairman of that on Tuberculosis. Only two or three days before his death he was working in the laboratories attached to the Experimental Farms at Stansted, where the research work of the Tuberculosis Commission is carried on.

It is a pathetic coincidence that the second interim report of that commission was issued almost on the very day of the death of its chairman. Appointed in 1901, it has now been at work for five years and a half, and does not seem yet to be within sight of the end of its labors. In the report the much debated question of whether tuberculosis is or is not transmissible from animals to human beings is answered in the affirmative, so far as bovines are concerned. Thirty different viruses, isolated from cases of tuberculosis spontaneously occurring in the bovine, were used in the investigation. The bacilli were introduced into the animals used for experiment in the form either of an emulsion of a tuberculous lesion or of a culture grown on an artificial medium. In five of the viruses both emulsion and culture from the same lesion were used, and it was possible to compare the results of the two. The two chief methods of introducing the bacilli were (1) feeding, (2) injection into the tissues. The methods of injection into the tissues in the case of bovines were (a) subcutaneous, (b) intravenous, (c) intramammary; and of these three the main reliance was placed on the subcutaneous method. In some cases the inoculation of bovine bacilli into calves resulted in an acute, generalized, progressive tuberculosis, ending fatally within a few weeks. It was also shown experimentally that, with large doses given subcutaneously, tubercle bacilli were found within twenty-four hours in the blood stream; they were thus carried to all parts of the body, and set up a widely distributed disease.

In other cases the effects of injecting the bovine bacillus were different. There was very much less clinical evidence of disease, and when the animals were eventually killed they were apparently in good health. Post mortem, both the locality and the adjacent prescapular gland, presented lesions evidently in a retrogressive condition. Between these two extreme cases, that of the rapidly fatal, widespread, progressive tuberculosis and that of the scantily disseminated and decidedly retrogressive disease, various intermediate stages were observed. Instances also occurred in which bacilli from the same source gave rise to acute and fatal infection in one animal and to no more than a mild retrogressive disease in another animal. In intramammary injections the material was introduced through the teat canals into two quarters of the udder, the other two quarters being left for comparison. The main results were as follows: 1. A very large amount of disease may be set up in the injected quarters, and yet the infection may not spread to the other quarters or be disseminated beyond the neighboring supramammary lymphatic gland. 2. In other cases the disease may spread to the uninjected quarters and over the body

generally, causing death by general progressive tuberculosis.

The cows thus affected with tuberculosis of the udder were utilized in obtaining tuberculous milk for experiments. Six calves were allowed to suck the tuberculous udders of cows. In only one case was general tuberculosis produced. In the five other cases the lesions were limited for the most part to the neighborhood of the intestinal tract and "had the retrogressive character of being calcareous." In another group of experiments fourteen calves, varying in age from three weeks and a half to two months, were fed with tuberculous milk from various sources, but none of these calves, when killed, showed anything more than tuberculosis limited to the intestine and to the mesenteric or ileocolic glands.

The commissioners conclude from their experiments that feeding with the bacillus of bovine tuberculosis does not so readily set up general progressive tuberculosis in the calf as inoculation does. The commissioners also conclude that there can be no doubt that in a certain number of cases the tuberculosis occurring in the human subject, especially in children, is the direct result of the introduction into the human body of the bacillus of bovine tuberculosis; and there also can be no doubt that in the majority at least of these cases the bacillus is introduced through cows' milk. Cows' milk containing bovine tubercle bacilli is clearly a cause of tuberculosis, and of fatal tuberculosis, in man. Of the sixty cases of human tuberculosis investigated by them, in twenty-eight there were clinical histories indicating that in them the bacillus was introduced through the alimentary canal. The facts seem to them to indicate that a very large proportion of tuberculosis contracted by ingestion is due to tubercle bacilli of bovine source. They add that a very considerable amount of disease and loss of life, especially among the young, must be attributed to the consumption of cows' milk containing tubercle bacilli. They go on to say: "The presence of tubercle bacilli in cows' milk can be detected, though with some difficulty, if the proper means be adopted, and such milk ought never to be used as food. There is far less difficulty in recognizing clinically that a cow is distinctly suffering from tuberculosis, in which case she may be yielding tuberculous milk. The milk coming from such a cow ought not to form part of human food, and, indeed, ought not to be used as food at all. Our results clearly point to the necessity of measures more astringent than those at present enforced being taken to prevent the sale or the consumption of such milk." It should be mentioned that the commissioners who signed the report are, in addition to Sir Michael Foster, Dr. Sims Woodhead, professor of pathology at Cambridge; Dr. Sidney Martin, professor of pathology in University College, London; Sir John McFadyen, principal of the Royal Veterinary College, London; and Sir Rubert Boyce, professor of pathology in the University of Liverpool.

Medical Students in Switzerland.—The *Münchener medizinische Wochenschrift* states that 2,102 medical students (96.2 m., 1,171 f.) are matriculated at the Swiss universities, of which number only 561 (538 m., 23 f.) are native. Basel has 150 m., 5 f.; Bern, 176 m., 350 f.; Geneva, 206 m., 268 f.; Lausanne, 146 m., 323 f.; Zurich, 253 m., 225 f.

Therapeutical Notes.

Chorea Treated by Scopolamine.—At a meeting of the Société de neurologie, held January 10, 1907. Babinski presented a case of chorea, which had been cured by injections of scopolamine hydrobromate.—*La Clinique*, January 18, 1907.

Hypodermic Injections of Cocaine for Facial Neuralgia.—Scherle and Fenari have employed an alcoholic solution of cocaine in the treatment of trigeminal neuralgia (*Bulletin médical de l'Algerie, La Tribune médicale*, January 5th). The injections are made deeply in the tissues around the trunk of the affected nerves. They are painless and harmless. Local anæsthesia is produced. The muscular spasm may occur from time to time, but is not attended with pain.

Borosalicylic Acid as a Surgical Dressing.—Carcarro and Césarís recommend the following as a disinfectant, or antiseptic, agent to take the place of corrosive sublimate:

R	Boric acid,	12 grammes;
	Salicylic acid,	6 grammes;
	Water,	1,000 grammes.

This solution has no offensive qualities, it is an efficient microbicide, and may be freely used without fear of accidents.—*La Quinzaine thérapeutique*, November 25, 1906.

Ointment for Scabies.—Blount (*Bulletin général de thérapeutique*, November 23, 1906) recommends the following application for itch in the better class of patients, which will not prevent their attending to business:

R	Glycerini,	20.0 grammes;
	Acacie,	0.5 gramme;
	Sulphuris sublimatis,	10.0 grammes;
	Potassii carbonatis,	3.5 grammes;
	Olei lavandule,	} aa 15 grammes.
	Olei menthæ piperitæ,	
	Olei camille,	
	Olei caryophylli,	

M.

The Nasal Chambers and Nasopharynx in Recurrent Erysipelas of the Face.—Larrand, of Lille (*Echo médical du Nord*, through *La Quinzaine thérapeutique*, November 25, 1906), as the result of his studies of recurrent facial erysipelas, has found that the majority of these cases have for their origin an infection in the nasal fossæ from which the disease spreads either through the lachrymal puncta or the nostrils. The point of departure may be the mucosa of the nasal fossæ, but much more frequently it is located in the adenoid tissue of the pharynx, which may be more or less hypertrophied. The preventive, and likewise curative, treatment of recurring erysipelas of the face, therefore, consists in cleaning the nasal chambers and nasopharynx, and principally in removing the adenoid hypertrophies of the nasopharynx.

The Action of Blisters in Pneumonia.—Segret (*Marseille médical*, and *Bulletin général de thérapeutique*, November 23, 1906) has formulated the following conclusions based upon his personal experience in the use of blisters in acute pneumonia: 1. In patients treated by the application of blisters there is certainly a sedative action upon the painful phenomena. 2. In three cases the defervescence

(crisis) was early. 3. Of forty-five pneumonia patients treated by blisters, there were ten deaths, whereas there were nine deaths in thirty-five cases treated differently. 4. Ordinary cleanliness is sufficient to avoid inflammatory or septic complications of the blistered surface, which only rarely happens anyhow. 5. As regards the effect upon the kidneys, renal disorders do not seem to be more frequent in cases treated with cantharidal vesication than in other cases. 6. The proportion of chlorides in the urine is only slightly modified. 7. In only two cases was there observed a slight, painful cystitis.

The Failure of Copper Sulphate as a Purifier of Water.—Moore and Kellermann having (in 1894) proved the destructive power of copper sulphate upon the algæ, of which several species are killed by solutions of one millionth, next sought to extend this action to pathogenic microbes. Having ascertained from their laboratory experiments that the typhoid bacilli are destroyed by a dosage of one to one hundred thousand, they tried to make use of this observation upon a large scale for the sterilization of the drinking water of cities. Lacomme and Lancelot, at first, and Clark and Gage subsequently, have shown that the use of such weak solutions only gives a false sense of security. Experiments made with colon bacilli, Eberth's bacillus, the bacillus of paratyphoid, bacillus subtilis, a bacillus isolated from these waters and the yellow staphylococcus, have proved that the addition to such infected waters of copper sulphate does not give any adequate security against infection, and indeed the solution does not become toxic to the microbes except in solutions too strong to be used for drinking water.—*Bulletin général de thérapeutique*, November 23, 1906.

Treatment of Pernicious Anæmia.—Courtois-Suffit and Marcel Ferrand (*Bulletins et mémoires de la Société médicale des hôpitaux de Paris*, January 17, 1907), in treating a case of pernicious anæmia of the icteric type, but of unknown origin, made use of opotherapy (bone marrow preparation with glycerin) and arsenic:

R Potassii arsenitis,0.20 grammes;
Sodii chloridi,0.27 grammes;
Aque destillatæ,20 c.c.

M.

Of this solution six drops were given the first day, and this quantity daily increased until twenty drops were used in twenty-four hours. In addition to this treatment six séances of radiotherapy were given at weekly intervals, each lasting ten minutes. The skin was at a distance of fifteen centimetres from the tube; the dose was three Holzknecht units; the penetration of the rays 7 to 8 (Benoist). The effects of the latter were not very striking; after three irradiations there was a gain of 50,000 red blood cells to the c.mm., but this was not permanent. The polynuclear leucocytes were a little reduced. No effect was observed on eosinophiles.

Vinegar as a Hæmstatic in Gynæcology.—Gilly (*Écho médical de Cevennes*, 1905; *Gazette de gynécologie*, January 15, 1907) reminds obstetricians that in every cottage there is a valuable hæmstatic which can be utilized in an emergency. A pint of vinegar, a tablespoonful of table salt, and a

couple of clean handkerchiefs, are always at hand. In a profuse hæmorrhage following a miscarriage or after labor, the patient is made to drink half a glassful of pure vinegar, and the vagina is tamponed with the handkerchief moistened with the vinegar and salt. This is done with the patient in the obstetrical position lying across the bed with her head low, the thighs and legs strongly flexed, and the hips at the edge of the bed. The vagina is cleared of clots before introducing the tampon. The bleeding stops immediately, but the patient is kept for a time in this position until reaction takes place, which is hastened by an enema of a quart of normal salt solution. The simultaneous internal administration of vinegar by the mouth, he regards as an important aid to the local hæmstatic. This agent, although having a flora of its own, is known to be bactericidal to pathogenic varieties of microorganisms. It may be given in its ordinary state, or, if there is time, it may be filtered and boiled previous to use.

A New Method of Producing General Anæsthesia by Ethyl Chloride.—Hoton (*Revue pratique d'obstétrique et de gynécologie*, January, 1907) describes a new method of administering ethyl chloride for the production of general anæsthesia without the aid of a mask or other apparatus. In 1894, Carlson, of Gothenburg, wishing to produce local analgesia in order to extract a tooth, used the ethyl chloride spray, and found that his patient became anæsthetized, thus accidentally discovering the narcotic properties of ethyl chloride. The same result has been since reported by others. Acting upon this experience, Hoton found that by directing the spray into the patient's mouth, while nasal breathing was suppressed by compressing the nares between his finger and thumb, he obtained complete general anæsthesia, with a minimum expenditure of the ether. The patient may be sitting up or lying down, he may be fasting or not. Artificial dentures are removed from the mouth, and the clothing loosened so as not to interfere with respiration. The patient is told to breathe through his mouth, while his nose is closed by pressure for a few minutes before administering the anæsthetic. Into the partly opened mouth the operator projects a jet of ethyl chloride, so that it is directed towards the base of the tongue. If a frost bite of the lips is feared, the end of the tube may be introduced as far as the line of the teeth if the patient is docile. If he is refractory and closes his mouth, then it is directed through any vacancy caused by loss of teeth, or even between the cheek and the gums. At the end of ten to thirty seconds narcosis is produced. The spray is at once discontinued and the operation performed. If the patient revives before the operation is concluded, the spraying of the mouth may be repeated. The author considers this plan much more convenient than with the ordinary methods with the use of chloroform. He asserts that it is almost entirely without danger. Recovery is rapid and is rarely accompanied by vomiting. Some patients, however, seem to have some hysterical or nervous excitement for a time. Ordinarily, after five minutes the patient can get up and go about his business. It is important that the tubes shall contain pure ethyl chloride when used for this purpose. Failures have resulted from an inferior product.

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NEW YORK, SATURDAY, MARCH 2, 1907.

DENATURED ALCOHOL.

The passage of the denatured alcohol bill by Congress is an important matter for the entire people of the nation. Professor Albert P. Sy (*Journal of the Franklin Institute*, January) contributes an interesting paper on the alcohol industry and the history of the bill which has just become a law. The wood alcohol men were strongly opposed to the bill on the ground that it would ruin their industry—the old, old cry—although they used many other arguments against its passage, particularly that of the possible increase of drunkenness. Professor Sy shows numerous reasons why the wood alcohol industry will not be destroyed by the production of ethyl alcohol free of tax. Denatured ethyl alcohol can be produced from corn, potatoes, and other vegetables; from low grades of molasses which cannot be sold as molasses; from the molasses made in the manufacture of sugar from beets; from the pulp of the coffee berry; and from cornstalks and corn cobs.

It costs about 10.78 cents to make a gallon of fifty per cent. alcohol from corn, including the price of the corn, and about 18.4 cents for a gallon of ninety per cent. alcohol. About 130 gallons of absolute alcohol can be made from an acre of corn and about 255 gallons of ninety-five per cent. alcohol from an acre of potatoes. Eleven gallons of alcohol may be made from a ton of green corn cobs, and six gallons from a ton of green cornstalks. It is understood, of course, that in order to be able to sell this alcohol free of tax, it must be mixed with methyl

alcohol or some other suitable substance in such proportion that it cannot be used as a beverage or for making liquid medicinal preparations. Among the chemical industries which will profit by this untaxed alcohol are the production of aniline colors, of organic chemicals, of transparent soaps, of celluloid, of smokeless powder, of fulminates, of photographic materials, and of varnishes and paints. It is a matter for regret that the provisions of the law could not have covered its use for medicinal purposes, but the denaturing materials would then have to be left out, and those in charge of the bill considered that the temptation to fraud would be too great.

This alcohol will be used for illuminating and heating purposes and for power engines. Alcohol is cheaper, more trustworthy, and more efficient than other fuels; it is much cleaner to handle and to use; there is no danger from poisoning as there is in the use of natural or manufactured gases; it has no disagreeable odor; its products of combustion are not objectionable; and it is less volatile and less dangerous to use, handle, and store than gasoline. An alcohol fire is easily put out with water. The laboratories should be able to reduce expenses by the use of this form of alcohol. There seems to be no objection to such a spirit for preserving specimens, hardening tissues for imbedding, and dehydrating sections for mounting.

HÆMATURIA IN CHILDREN.

Hæmaturia in children results from various causes. In the first place, renal congestion of a rheumatic nature may certainly arise, having hæmaturia as one of its symptoms. Hæmaturia from rheumatism is not infrequent, according to Méry, and it may also be met with in amygdalitis, in other forms of sore throat, and in adenoids, but it usually disappears without leaving any trace. It may be met with in all degrees of severity, and in some cases it may be the only symptom present, but when it is accompanied with albuminuria, the latter disappears with the hæmaturia. These are instances of slight renal lesions where congestion plays the principal part. It is in influenza that these accidents are most frequently observed, but they are also met with in rheumatism, in sore throat, and in the so called glandular fever. In the simplest cases, even when there is a slight elevation of temperature, the albuminuria is merely due to the presence of blood in the urine. Renal congestion, without nephritis properly speaking, is not infrequent, but there are cases where tuberculous disease is the cause, and, as is well known, hæmaturia may occur at the very beginning of the process. The loss of blood alone is not common, but far more

frequently the urine is purulent at the same time.

Essential hæmaturia may also be observed in children, or at least, if not essential, it seems to occur without any apparent cause. Cases have been met with in purpura, and the albuminuria disappeared along with the loss of blood; Renault has reported such cases, although albumin was wanting. In these various conditions it may be admitted that there is renal congestion, without any permanent lesion, but the hæmaturia may also be due to nephritis, appearing with the same clinical aspects. In this case it differs from the other types, because the albuminuria is more or less persistent even when all trace of blood has disappeared from the urine. The hæmaturia is then only a symptom, while the nephritis is the cause. Instances of acute nephritis occurring during whooping cough have been recorded, the renal lesion being produced by the latter, and under these circumstances the liver should be carefully examined, because in the more serious forms of nephritis it is frequently increased in size. Nephritis may also arise under very special circumstances, as in cases of scabies. This has been described especially when secondary infections arose. Sometimes the drugs used for the treatment of the skin infection may give rise to the renal lesion.

To sum up, it may be said, without referring to calculous hæmaturia, which has its own special symptomatology, that purely congestive hæmaturia may be met with in children, the prognosis of which is usually excellent. Cupping over the renal region and calcium chloride in daily amounts of fifteen grains, with a milk diet, are usually sufficient to cause this symptom to disappear rapidly. But it may also be indicative of a nephritis which is very superficial and also rapidly disappears, although the prognosis is more serious than in the former case. The persistence of albuminuria after the blood has disappeared from the urine is the distinguishing sign of nephritis.

CRANIOTOMY AND THE CÆSAREAN OPERATION.

A country practitioner, Dr. Franz (*Monatsschrift für Geburtshilfe und Gynäkologie*, September, 1906; *Berliner klinische Wochenschrift*, January 7, 1907), records two consecutive instances of the successful performance of the Cæsarean operation, and argues that it is not always necessary to transport a patient to a hospital when that operation has been decided upon. Indeed it is not. The conditions in a rural home are generally much more favorable than in a city tenement house, but in the squalid tenements of

great cities the procedure has now so many times been carried out, and with such beneficent results, that it should not be regarded as a thing beyond the resources of the modern country practitioner. We feel sure that it is not so regarded by progressive physicians, though the fact of their being unaccustomed to the performance of major operations may in many instances make them hesitate to undertake one of such apparent magnitude, one calling for coolness and resolution rather than for unusual technical skill.

Dr. Franz thinks that the performance of craniotomy on a living child should be much less frequently resorted to than it is at the present time, and never without a consultation. We think he puts it very mildly. Craniotomy is much more difficult to perform properly than the Cæsarean operation, and, unless done with consummate skill, it is highly dangerous to the mother. But there is a higher consideration than that; it is necessarily destructive of a human life under the condition specified. The Cæsarean operation, on the contrary, almost surely saves the child's life, and, done with the modern precautions, does not greatly imperil that of the mother. Every general practitioner, therefore, should be prepared to perform the Cæsarean operation when he cannot delegate its performance to a professed surgeon, and he who, quailing before its magnitude, resorts to craniotomy as an alternative proves recreant to the confidence felt in him by his community.

In reality the young graduate of the present day is presumed to be possessed of the skill needed for any surgical operation, save in the narrow fields of a few specialties, and as a general thing it is not altogether his fault if he does not preserve his skill and his confidence in himself. These attributes, however, are pretty sure to slip away from him as a result of circumstances that are not within his control, chiefly the blind devotion of the laity to specialists. We know of no good reason why a practitioner who has shown himself wise in the management of cases of disease that are to be met with medicinal and hygienic measures should not be held capable of performing major surgical operations. The layman's ordinary dissent from this view ought to be susceptible of being overcome.

THE MIDWIVES OF NEW YORK.

If John Ruskin's saying that "every child has a right to be well born" were interpreted to mean that every child had a right to be born well, then many of the children in New York fall far short of their privileges. The least that should be expected is that they be brought safely into the world, with such skill and precaution that they shall not contract

disease at birth. It has been officially stated by one who is in a position to know that no fewer than 100,000 abortions are committed annually in New York. There is little doubt that midwives are the chief agents in producing these abortions, and some even hold that in New York the terms midwife and abortionist are synonymous. Probably about one third of the criminal abortions are fatal to the mother. The midwives of the class who advertise their willingness to undertake such cases have unbounded confidence in their own powers, and they know well how to trade upon the credulity of the ignorant women who come to them. They give drugs in innumerable cases that need a physician's care, and not only ruin the health of the newly born child by their lack of cleanliness and treatment, but ruin the lives of many women.

And, yet, because there are many evil practices, as well as there is much crass ignorance on the part of some midwives, it would be not only unfair, but foolish to condemn the practice of midwives. From the earliest ages women have called upon the midwife to assist in childbirth. For hundreds of years they had no other care, unless dangerous complications arose and a physician was called in. Not until the seventeenth century, when France set the fashion by patronizing the "man midwife," as he was at first contemptuously called, do we hear of the physician including obstetrics in his curriculum. Since then the scientific treatment of the parturient woman has made such strides that the midwife has, in this country at least, fallen into contempt, her vocation has been thought presumptuous, her ignorance has been taken for granted, and she has been allowed the opportunity to degenerate into a menace to society if she chooses.

This is the situation that New York has been facing with apparent indifference. An admirable bit of work has, however, been recently done by the Public Health Committee of the Association of Neighborhood Workers, represented by Miss F. Elizabeth Crowell (*Charities*, February).

She has investigated the condition and status of the midwives of New York by personal visits and by examinations of their homes and their methods, with results that are startling, and she has given suggestions that are keenly to the point. These she presented at a special meeting of the committee, held at the New York Academy of Medicine, where representatives of various medical boards were present.

She found, for instance, that forty-two per cent. of the total number of births reported in Greater New York in 1905 were attended by midwives, and that to meet this demand there were in the borough of Manhattan alone between nine hundred and a

thousand practising midwives. Miss Crowell visited 500 of these, most of whom lived in the lower part of the city. They were for the most part of foreign birth, and two thirds of them had not lived here more than ten years. Nearly all showed very decided illiteracy. Two hundred and one had foreign diplomas, showing that they had been properly trained and had had at one time a certain degree of proficiency, but many of them, in the absence of all legal restriction, had degenerated into careless and often criminal practitioners. The diplomas of the remainder were from so called schools of midwifery in New York, or from a certain class of physicians who find it useful to have such women associated with them. Some of these women were unable to read or write, but they had had the price, \$66.00. The diplomas which they held were utterly worthless as evidence of training or proficiency.

Such women Miss Crowell found ready to undertake any normal and most abnormal cases. They would in many cases go without the slightest preparation, with a bag equipped with rusty scissors, dirty string, a bit of cotton, and other articles that would make fit decorations for a chamber of horrors. Out of 303 bags which she inspected, only 34 were even ordinarily clean. As a result of ignorance so generalized, it is no wonder that ophthalmic troubles continue, that the percentage of deaths from puerperal fever has increased, and that the number of still births in New York is so large.

The midwives practising in New York have no legal status under the laws of the State. Shall the trained and competent midwife be legally recognized by the State, and those too ignorant to obtain a diploma be prosecuted for practising without it? In the beginning of the nineteenth century Europe seems to have accepted the fact that midwives as an institution were an inevitable part of the social order, and that it would be wiser to recognize and educate them than to ignore them. Consequently efficient instruction was provided for them. They are admitted to the lying-in hospitals, they are taught the anatomy of the organs of generation, and the physiology of labor theoretically and practically. They are then licensed, but remain always under supervision, and in case of neglect may be prosecuted and their license revoked.

England has been the only European country to refuse to enact legislation affecting the midwife and her practice. England, however, has been able to overcome the prejudice which we fear is the cause of our own inertia in the matter, and in 1902 set in operation a Midwife's Act which we are led to believe has proved of service. For ourselves the problem is a pressing one, and work such as Miss Crowell has offered promises to lead us to a solution.

A NEW CHEMICAL JOURNAL.

The American Chemical Society, which already publishes a monthly journal, has undertaken in addition the publication of a semimonthly periodical devoted to reviews of the literature of the entire field of chemistry and pharmacy. The second number of this important publication is dated January 20th, and some idea of the character of its contents may be gathered from an enumeration of the subjects which receive treatment in its pages. The classified table of contents shows treatment of the following subjects: Apparatus, electrochemistry, inorganic chemistry, analytical chemistry, mineralogical and geological chemistry, metallurgy, organic chemistry, biological chemistry, foods, nutrition, water, sewerage, sanitation, solids and fertilizers, fermented and distilled liquors, pharmaceutical chemistry, glass, pottery, cements, structural materials, dyes, textile fabrics, fats, soaps, and leather—surely a most comprehensive array. The work is edited by Dr. William A. Noyes, with the assistance of a corps of specialists in the different branches under review. The abstracts are compendious but unusually thorough, and the names of the abstractors are attached to each abstract. The new journal should prove of great value to workers and students who aim to keep abreast of the literature of chemistry and the allied arts and sciences, and the American Chemical Society is to be congratulated on the issue of so worthy a periodical.

Obituary.

HENRY W. ELMER, M. D.,

OF BRIDGETON, N. J.

Dr. Elmer died at his home on February 13th after a long illness. He was graduated from Princeton in 1866, received his medical degree from the University of Pennsylvania in 1869, and served on the house staff of the Philadelphia Hospital. He was afterward appointed a member of the State Board of Health, in which capacity he served until his last illness. He was for many years chairman of the executive committee of the Medical Society of the State of New Jersey, and was recently the president of the society. He was actively engaged in practice until the onset of his illness. He leaves behind him a memory which will ever be cherished by his professional colleagues who had the good fortune to know him and who were associated with him in his work.

News Items

NEW YORK CITY AND STATE.

Personal.—Dr. Seymour Oppenheimer has been appointed laryngologist and otologist to the Sydenham Hospital.

The Harvey Society Lectures.—The tenth lecture in the Harvey Society course will be delivered at the New York Academy of Medicine, on Saturday evening, March 9th, by

Professor Friedrich Muller, Subject, *Nervous System of the Heart*. All persons interested are cordially invited to be present.

The Jewish Hospital for Deformities and Joint Diseases.

A charity benefit performance for the building fund of this non-sectarian institution, will be held at the New York Academy of Music on Sunday evening, March 17th. An auction sale of tickets for this performance was held on February 28th, the proceeds of which will be used for the enlargement of the present hospital.

The Buffalo Academy of Medicine.—The following programme was arranged for a meeting of the *Section in Obstetrics and Gynaecology*, held on Tuesday, February 26th: Presentation and report of a case of mela neonatorum following Caesarean section, by Dr. William G. Taylor; Unnecessary Operation, Especially in the Female, by Dr. J. Henry Dowd.

The Hospital Conference of the City of New York.—The following programme was arranged for a meeting of this conference, held at the Academy of Medicine, on Wednesday, February 27th: The Milk Supply of a Hospital, by Dr. Samuel T. Armstrong, General Medical Superintendent of Bellevue and Allied Hospitals; How Should the Ambulance Service of Greater New York be Organized? by Mr. Homer Folks, secretary, State Charities Aid Association.

The Rochester (N. Y.) Academy of Medicine.—The following programme was prepared for a meeting of the *Section in Public Health, Hygiene, Climatology, etc.*, held on February 27th, in conjunction with the *Rochester Pathological Society* and the *Hospital Medical Society*: Recent Observations on the *Ætiology of Cancer*, Present Status of Researches in Immunity of Cancer, by Dr. H. R. Gaylord and Dr. G. H. Clowes (by invitation), Cancer Laboratory, University of Buffalo.

The Tri-Professional Medical Society.—A special meeting of this society will be held at the Madison Avenue Hotel, Ninety-second Street and Madison Avenue, New York, on Tuesday evening, March 5th. The following programme will be presented: Presentation of Specimens, Instruments, Apparatus, Patients or Cases; Paper of the evening: A Symposium on Diet, arranged as follows: Diet: Its General Principles, by Professor Christian; Diet During Infancy, Adolescence, and Old Age, by Dr. Heinrich Stern; The Suggestion Factor in Diet, by Dr. E. R. Eliscu; Diet a Factor as the Causation of the Use of Stimulants and Narcotics, by Dr. S. S. Wallian. Discussion: Diet in Nervous Diseases, Dr. J. Monroe Lieberman; Diet in Gynaecology, Dr. B. S. Talmey; Diet a Factor in Dental and Oral Disease, Dr. W. J. Lederer; Diet in Genitourinary Diseases, Dr. G. Morgan Muren; general discussion.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending February 23, 1907:

	February 23		February 16	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	45	12	42	12
Smallpox	1	..	2	..
Varicella	76	1	91	..
Measles	259	10	248	6
Scarlet fever	298	13	263	21
Whooping cough	66	5	52	6
Diphtheria	277	46	282	52
Tuberculosis pulmonalis	360	220	356	191
Cerebrospinal meningitis	13	12	13	13
Totals	1,395	319	1,349	301

Society Meetings for the Coming Week:

MONDAY, March 4th.—Practitioners' Club, Newark, N. J.; Utica, N. Y., Medical Library Association.

TUESDAY, March 5th.—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Medical Association of Troy and Vicinity; Hornellsville, N. Y., Medical and Surgical Association; Long Island, N. Y., Medical Society; Buffalo Academy of Medicine (Section in Surgery); Ogdensburg, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Hudson, N. J., County Medical Society (Jersey City).

WEDNESDAY, March 6th.—Society of Alumni of Bellevue Hospital, New York; Harlem Medical Association, New York; Elmira, N. Y., Academy of Medicine.

THURSDAY, March 7th.—New York Academy of Medicine.

FRIDAY, March 8th.—New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York; Saratoga Springs, N. Y., Medical Society.

PHILADELPHIA AND THE MIDDLE STATES

An Address on Chronic Diseases of the Heart.—On Saturday, February 23rd, at Westfield, N. J., Dr. Theodor Schott, of Bad Nauheim, Germany, delivered an address on this topic. The address was listened to and enjoyed by a large number of Union County, New Jersey, physicians.

Philadelphia Personals.—Dr. William H. Craig, of Richmond, Va.; Dr. F. P. Gengenbach, of Denver, Colo.; Dr. M. J. Holloran, of Worcester, Mass.; Dr. John Dunlap, of Goldbutte, Mont.; and Dr. A. L. Lehman, of Wallace, Idaho, are registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

Scientific Society Meetings in Philadelphia for the Week Ending March 9, 1907.—*Monday, March 4th*, Philadelphia Academy of Surgery; Biological and Microscopical Section, Academy of Natural Sciences; West Philadelphia Medical Association; Northwestern Medical Society. *Tuesday, March 5th*, Academy of Natural Sciences; Philadelphia Medical Examiners' Association. *Wednesday, March 6th*, College of Physicians; Association of Clinical Assistants of Wills Hospital. *Thursday, March 7th*, Obstetrical Society; Medical Society of the Southern Dispensary; Section Meeting, Franklin Institute; Northwest Branch, Philadelphia County Medical Society. *Friday, March 8th*, Northern Medical Association; West Philadelphia Branch, Philadelphia County Medical Society.

Philadelphia County Medical Society.—At the regular semimonthly meeting of the Philadelphia County Medical Society, held on Wednesday evening, February 13th, Dr. E. J. G. Beardsley read a paper on Pneumothorax, a Report of Six Cases and a Review of the Literature. Dr. W. Wayne Babcock read a paper on Surgical Treatment of Brachial Palsy by the Transplantation of Portions of the Opposite Brachial Plexus. Dr. S. W. Newmayer read a paper on Acute Idiopathic Pulmonary Edema. Dr. John T. Krall read a paper on Severe Orbital Pain Associated With Grippe. At the annual meeting of the Northeast Branch of the society the following officers were elected for the year 1907: Dr. W. Ekwurzel, chairman; Dr. William Harmar Good, clerk; committee on scientific business, Dr. Albert C. Buckley, chairman; Dr. William H. Morrison, Dr. S. Raughley, Dr. William Harmar Good; committee on increase of membership, Dr. Boyer, chairman; Dr. George C. Hanna, Dr. E. L. Drake. In future the Northeast Branch will hold its meetings in the auditorium of the Frankford Branch of the Philadelphia Free Library, Frankford Avenue and Overington Street.

The Health of Philadelphia.—During the week ending February 16, 1907, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Scarlet fever	405	39
Diphtheria	29	4
Whooping cough	49	1
Tuberculosis	98	16
Measles	3	3
Mumps	22	0
Smallpox	19	3
Typhoid fever	98	90
Enteric fever	73	92
Paratyphoid fever	4	2
Cholera	1	6
Disentery	15	22
Salmonella	2	0
Shigellosis	6	0

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lung, 9; diarrhoea and enteritis, under two years of age, 15. The total mortality was 656, in an estimated population of 1,500,595, corresponding to an annual death rate of 22.73 in 1,000 population. The total infant mortality was 130; under one year of age, 110; between one and two years

of age, 20. There were 33 still births, 18 boys and 15 girls. The temperatures were low, 8 degrees being recorded as a minimum, on the 12th. The total precipitation was 0.04 inch.

BOSTON AND NEW ENGLAND.

The Mortality of Boston.—The number of deaths reported to the Board of Health for the week ending February 23rd was 225, as against 261 the corresponding week last year, showing a decrease of 36 deaths, and making the death rate for the week 19.48. The number of cases and deaths from infectious diseases was as follows: diphtheria, 41 cases, 2 deaths; scarlatina, 53 cases, 2 deaths; typhoid fever, 3 cases, no deaths; measles, 11 cases, no deaths; tuberculosis, 39 cases, 20 deaths; smallpox, no cases, no deaths. The deaths from pneumonia were 44, whooping cough 3, heart disease 15, bronchitis none, marasmus 3. There were 11 deaths from violent causes. The number of children who died under one year of age was 37, under five years of age 53, persons over sixty years of age 73, deaths in public institutions 73.

The Boston Medical Society.—The tenth annual banquet of this society was held at the American House, on Monday, February 18th. Previous to the banquet a business meeting was held, when officers for the ensuing year were elected as follows: President, Dr. William D. Kelley; vice-president, Dr. N. M. Hurwitz; treasurer, Dr. Rufus K. Noyes; financial secretary, Dr. Frederick J. Bailey; corresponding secretary, Dr. D. B. Gleason; directors, Dr. Dixwell, Dr. Lockhart, Dr. Stackpole, and Dr. Goodman. Following the banquet there was a discussion on the topic, Abuse of Medical Charities. It was the general opinion that more stringent measures might be adopted in order to limit those who were able to pay for hospital services from taking advantage of free treatment. It was stated that there were many who were well able to pay the charges who were constantly accepting this form of charity, this method being largely exercised by those who were constantly acquiring wealth and concealing the fact. The best method for overcoming these difficulties was believed to lie in more stringent hospital rules and a rigid enforcement of them.

BALTIMORE AND THE SOUTH

The Craighead County, Arkansas, Medical Society.—At a recent meeting of this society, held at Jonesboro, the following officers were elected: President, Dr. Charles M. Lutterloh, of Jonesboro; secretary, Dr. W. C. Halton, of Jonesboro. Dr. Halton was also elected delegate to the State society and Dr. Hugh Rains was elected alternate.

The Richmond (Va.) Academy of Medicine and Surgery.—The following programme was presented at a meeting of this academy, held on Tuesday, February 26th: The Diagnosis and Treatment of Cerebral Traumatism, by Dr. J. Shelton Horsley; A Plea for the Operative Cure of Hernia, by Dr. G. Paul Laroque; discussion led by Dr. Stuart McGuire.

The Mississippi County, Arkansas, Medical Society.—A meeting of this society was held at Blytheville, on February 14th. Officers for the ensuing year were elected as follows: President, Dr. C. C. Stevens, of Blytheville; vice-president, Dr. O. Howton; secretary-treasurer, Dr. T. G. Brewer (reelected), of Osceola; delegates to the State medical society, Dr. T. G. Brewer and Dr. S. P. Martin. The next meeting of the society will be held on March 14th, at Osceola.

The Mortality of Baltimore.—According to the report of the health department for the week ending February 23rd, there were 248 deaths, as compared with 217 the corresponding week of last year, 216 in 1905, and 231 in 1904. The annual death rate in a thousand of population was: Whole, 22; white, 19.05; colored, 37.60. The principal causes of death were:

Measles	1	Pneumonia	42
Diphtheria	1	Bright's disease	22
Influenza (la grippe)	9	Congenital debility	16
Consumption	32	Lack of care	3
Cancer	8	Old age	7
Apoplexy	9	Suicides	6
Organic heart diseases	20	Accidents, etc.	14
Bronchitis	5		

The majority of those who died were United States whites, 1,291, foreign born, 634, 1, 62, and 1 new S. Eleven deaths occurred at Bellevue Asylum, 13 in hospitals, and 17 in other institutions. Twenty-nine coroners' inquests were held. The following number of cases of infectious diseases were reported, as compared with the corresponding week of last year:

	1906	1907		1906	1907
Smallpox	4	1	Measles	3	13
Diphtheria	16	23	Whooping cough	18	5
Scarlet fever	9	0	Cholera	4	18
Typhoid fever	6	4	Consumption	16	20
Measles	4	78			

CHICAGO AND THE WEST

Statement of Mortality of Chicago for the Week Ending February 16, 1907, compared with the preceding week and with the corresponding week of 1906. Death rates computed on United States Census Bureau's figures of midyear population, 2,407,020 for 1907, 2,400,185 for 1906.

	Feb. 16, 1907.	Feb. 9, 1907.	Feb. 17, 1906.
Total deaths, all causes.....	698	783	527
Annual death rate in 1,000.....	17.27	19.38	13.41
Sexes—			
Males.....	371	419	301
Females.....	327	364	226
Ages—			
Under 1 year of age.....	124	193	108
Between 1 and 5 years of age.....	94	89	40
Between 5 and 20 years of age.....	47	52	35
Between 20 and 60 years of age.....	270	295	243
Over 60 years of age.....	167	154	101
Important causes of death.			
Apoplexy.....	9	13	18
Bright's disease.....	37	52	29
Bronchitis.....	40	28	11
Consumption.....	72	70	72
Cancer.....	24	17	23
Convulsions.....	10	13	15
Diphtheria.....	11	15	10
Heart diseases.....	60	56	49
Indigestion.....	16	8	2
Intestinal diseases, acute.....	28	28	29
Measles.....	4	11	0
Nervous diseases.....	22	30	26
Pneumonia.....	156	153	80
Scarlet fever.....	39	44	13
Suicide.....	1	8	10
Typhoid fever.....	7	9	4
Violence (other than suicide).....	21	28	27
Whooping cough.....	8	9	2
All other causes.....	133	191	107

Reports for the week show a continued decrease in the number of infectious diseases. The number of cases of diphtheria reported was 150, being 60 fewer than was reported the previous week. Scarlet fever cases reported numbered 386, a reduction from the previous week of 234. Of measles 130 cases were reported—a decrease of 14. The total number of infectious diseases for the week was 704—324 fewer than was reported the preceding week.

GENERAL

The Thirty-sixth Congress of the German Surgical Society will be held at Berlin on April 3-6, 1907. Notice of intention to read papers or make demonstrations should be sent to the secretary, Dr. B. Riedel, Jena, not later than March 31st.

The German Roentgen Society will hold its third congress at Berlin on April 1, 1907. Announcement of papers to be read should be in the hands of the secretary, Dr. Max Immelmann, 72 Lützowstrasse, Berlin, W. 35, not later than March 1st.

The Craggs Research Prize of the London School of Tropical Medicine. A prize of £50, or at \$250, will be awarded in October, 1907, to a past or present student of the London School of Tropical Medicine, who, during the year, October, 1906, to October, 1907, has made the most valuable contribution to tropical medicine. The fact of the work having already been published will not disqualify. Contributions, which must be written in English, must be in the hands of the medical superintendent of the school, Dr. C. W. Daniels, on or before October 1st.

The National Association for the Study and Prevention of Tuberculosis.—The third annual meeting of this association will be held at the New Willard Hotel, Washington, D. C., on May 6, 7, and 8, 1907. The organization of the sections for the meeting is as follows: Sociological Section, Mr. Paul Kennaday, New York, chairman; Mr. Christopher Easton, New York, secretary; Clinical and Climatological Section, Dr. George Dock, Ann Arbor, Mich., chairman; Pathological and Bacteriological Section, Dr. F. F. Westbrook, Minneapolis, chairman; Surgical Section, Dr. W. S. Halsted, Baltimore, chairman; Dr. Hugh H. Young, Baltimore, secretary; Section of Tuberculosis in Children, Dr. T. M. Rotch, Boston, chairman.

The Medical Society of the Missouri Valley.—The semi-annual meeting of this society will be held at Omaha, Neb., on March 21 and 22, 1907. The preliminary programme includes the following papers: Thyroid Surgery (oration in Surgery), Dr. Alexander Hugh Ferguson; Oration in Medicine, Dr. R. T. Sloan; Acute Ascending Paralysis, Dr. Frederick S. Clinton; Membranous Croup, Dr. E. T. Shelly; Popliteal Aneurysm, Dr. W. J. Frick; Hereditary Degeneracy, Dr. L. L. Uhls; Nephrolithiasis Urica, Dr. A. C. Croftan; The Morphine Habit, Dr. W. F. Waugh; Non-poisonous Embalming Fluids, Dr. Frederic Cliff; A Clinic, Dr. F. E. Coulter; Hernia, Dr. David C. Hilton; Echinatea, Dr. C. S. Chamberlin; title not announced, Dr. J. E. Moore. A pleasant feature of the programme will be the presence at this meeting of nearly all of the presidents of the various State medical associations in the Missouri Valley, a number of whom will contribute papers. Regular programme will be issued March 1st.

Army Medical Corps Examinations.—Preliminary examinations for appointment of assistant surgeons in the army will be held on April 29 and July 29, 1907, at points to be hereafter designated. Permission to appear for examination can be obtained upon application to the Surgeon General, U. S. Army, Washington, D. C., from whom full information concerning the examination can be procured. The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice. The examinations will be held concurrently throughout the country, at points where boards can be convened. Due consideration will be given to the localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible. In order to perfect all necessary arrangements for the examinations of April 29th, applications must be complete and in possession of the Surgeon General on or before April 1st. Early attention is therefore enjoined upon all intending applicants. There are at present twenty-five vacancies in the medical corps of the army.

An Enlarged Hospital Corps Needed for the Navy.—The Navy needs a Hospital Corps of not less than one thousand men for the proper care of the sick and injured of the Navy. To secure the men required the Naval Bureau of Medicine and Surgery asks for the passage of the bills now on the calendar of the House, No. 12846, and the corresponding bill, S. 2206, now before the Naval Committee of the Senate. The increase in the warrant grade of the Hospital Corps proposed by this bill, says the *Army and Navy Journal* for February 2nd, would encourage the most desirable hospital stewards to reenlist, and the authorization of the grade of chief pharmacist would give pharmacists the opportunity, now enjoyed by boat-swains, gunners, carpenters, and warrant machinists, of promotion to the lowest commissioned grade. As it is now, a large number of the Hospital Corps refuse to reenlist and the Navy thus loses the services of many desirable men who have had four years' training and experience. While the demand for men of the Hospital Corps has increased, their number has decreased. There is a shortage of thirty in the hospital stewards, twenty-six in the apprentice, first class, and 156 in the apprentices, not allowing for the commissioning of new ships or providing for exigencies. It is estimated that the total increased expense resulting from the passage of the bill would be \$17,820.

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

February 23, 1907.

1. The Factors of Safety in Animal Structure and Animal Economy, By S. J. MELTZER.
2. Clinical Physiopathology, By L. HARRISON METTLER.
3. Hysteria in Children, By D'ORSAY HECHT.
4. The Treatment of Simple Chronic Glaucoma by Myotics, By WILLIAM CAMPBELL POSEY.
5. The Care and Treatment of Inebriates, By GEORGE F. BUTLER.
6. The Psychic Treatment of Inebriety and Its Relation to So Called Cures, By L. D. MASON.
7. The Plague in American Cities, By N. K. FOSTER.
8. The Physician and the Nostrum, By EDWARD BOK.
9. Study of Tropical Diseases in the Philippine Islands, By P. M. ASHBURN and CHARLES F. CRAIG.

3. **Hysteria in Children.**—Hecht gives the treatment in hysteria in children as follows: Just as hysterical symptoms are ushered in with slight provocation, so they may be made to disappear with slight but appropriate treatment. As soon as the nature of the ailment stands revealed to the physician the parents must be made to understand the crux of the situation and be entirely governed by it. They must be told that a dispassionate interest, or, better, no interest at all, is the most wholesome thing for the child. Moral suasion is desirable, especially in cases with purely psychic manifestations, and, together with a firm yet gentle order of discipline, initiated early, will result in great and lasting good. When one is denied the intelligent and obedient cooperation of parents, and this is only too often the case, isolation becomes an imperative measure. Isolation to be complete and effective means no visitors, no letters, no messages; in short, no reminders of the past. With no intent to deprecate the talent and skill of the trusted family physician, the author thinks that he is not the best nor, as a rule, the last adviser in hysterical cases. This disease is not a grateful one for the family physician to treat. Strange surroundings, strange people, and the strangest physician will exert the greatest good and effect the quickest cure. The principle involved in the method of surprise (*Ueberrumpelungs Methode* of Bruns) is at once simple and logical. To emancipate the child from a deep rooted obsession and do it quickly and completely (in one trial, if possible) is the purpose of the method. Give such children a chance to reflect and deliberate, and it means almost certain defeat for the cure. In conjunction with isolation and these clever mental devices, all methods of avail in adult functional diseases are of use here, such as diet, massage, electricity, the lukewarm bath and cold spinal douche, or the cold drip sheet. Hydrotherapy and electrotherapy are in the main extremely unpleasant and in part painful, hence successful. Hypnotism has met with growing disfavor, and is by many regarded as dangerous to children, if for no other reason than its being a form of induced hysteria. After a cure in isolation has been effected, children should not be returned to their old surroundings too soon. They should be given plenty of time in which to forget all the circumstances attending their former disabilities.

4. **The Treatment of Simple Chronic Glaucoma by Myotics.**—Posey treats the subject under three heads: (1) Beginning cases; (2) advanced cases; and (3) pronounced glaucoma in one eye, the other being unaffected, or with only a glaucomatous tendency. 1. Beginning cases are those which have possessed the tendency to glaucoma for a number of months or years and are now manifesting some positive signs of the disease, the tension being, perhaps, more or less elevated, the cupping demonstrable, or some restriction or scotoma having appeared in the visual field. The

author has had about 12 such cases under his care for a number of years. His treatment is eserine in one grain doses, increasing the strength gradually, as the iris and ciliary muscles become tolerant to its action. The proper correcting lenses are also selected and careful instructions are given regarding the restricted use of the eyes at near work. Alteratives and tonics are prescribed and the regimen of the patient's life carefully outlined. It is true that the disease has progressed despite the constant use of myotics and diligent care directed to every source which could influence the ocular condition, but the progress has been so slow that in all fairness it may be stated that the disease has been at least controlled. 2. Under advanced cases is considered the not uncommon type where vision in one or both eyes has been seriously compromised by the marked restriction of the visual field, either peripherally by cutting, or centrally by scotoma. The author cites a case in which iridectomy being apparently out of the question, on account of the marked limitation of the field, treatment with myotics was inaugurated, though it was felt that but two or three months would suffice to obliterate the small portion of the visual field which remained. Eserine was administered with good results. At the end of six months pilocarpine nitrate in twice the strength was substituted for the eserine, and during the past thirteen years there has never been a day that either eserine or pilocarpine has not been instilled three or four times daily. Slight conjunctival irritation has arisen at times during this interval, but has always readily yielded to treatment. 3. For the third series the author again gives the history of a case in which a solution of eserine gr. 0.125 to the ounce was prescribed, this strength being rapidly increased until the pupil was brought to almost pin point contraction. Despite this treatment, however, the field still further deteriorated and vision sank to $\frac{2}{100}$. An iridectomy was accordingly performed on the left eye, the right being kept under the full influence of eserine, both before and after operation. The progress of the case since the iridectomy was performed has been favorable, vision in the operated eye remaining about the same ($\frac{2}{100}$), while that in the right eye was still normal. At this time, two and one half years after the operation, the right eye still remains free from any pronounced signs of glaucoma, no pathological excavation having appeared and tension being apparently normal. The anterior chamber, however, is somewhat shallow. Eserine has been persisted in continuously and the strength of the drug gradually increased.

6. **The Psychic Treatment of Inebriety and Its Relation to So Called Cures.**—Mason observes that the so called "cures" or specifics for alcoholism or inebriety do not attain their effect through the action of drugs, but through the influence of psychic law, which is the primal factor in the cure. The action of drugs is indirect and secondary, but by mental suggestion may have a psychic value. The class of alcoholics or inebriates who are susceptible to such influences is limited to such persons as are responsive and in the earlier or formative stage of the disease. The originators of the so called cures are illogical in their use of remedies and, therefore, untrue in their assertions, and in their practice are not in accord with rational therapeutics or the theory and practice of medicine. They are not ethical nor in any sense humanitarian and, therefore, should be excluded from all the protection afforded legitimate or regular medical practice and should be placed under the laws which regulate and control proprietary or patent medicines. There is not any medicine, drug, preparation, or "cure all" which is a specific in the treatment of alcoholism or inebriety in the same sense that quinine is a specific for malaria or mercury for syphilis. In a certain class of selected cases of inebriety it is proper to use psychotherapy as a therapeutical agent, especially in the earlier stages

before complications develop and when the patient is responsive to such treatment. In cases complicated with organic disease appropriate medical treatment should precede or accompany psychotherapy if the latter be deemed advisable.

7. The Plague in American Cities.—N. K. Foster, of Sacramento, in writing on this subject, treats the prophylaxis in the following way: Our only safety is an active interest in the disease and a solution of the many questions pertaining to it. The lack of exact knowledge as to its means of dissemination and avenues of inspection often make the efforts at controlling it ineffective, and severe epidemics result. Still, much is known that is useful in preventing an outbreak and in limiting it in its early stages. Every health organization, whether State or city, should be in possession of these facts and ready to use them at all times. In cases of great exposure they should constantly watch the rats, and all found dead should be examined. Their entire extermination is a question of the near future. On the physician, however, must always rest the great responsibility of discovering and recognizing the disease in men, and this is no easy matter. Often, in the beginning of an epidemic, the disease easily passes for some other, especially in the pneumonic form. Even the bubo may not excite suspicion, and naturally would not, in one who had not given the subject especial study. The disease is widespread over the world and may infect any port at any time, and our only safety lies in an early and public recognition of the disease, and immediate active measures for its suppression.

9. Study of Tropical Diseases in the Philippine Islands.—Ashburn and Craig state that from the work which has already been accomplished, and that which they have in view, they hope to be able to demonstrate the following concerning the aetiology of dengue fever: 1. That the cause of dengue is present in the blood of the infected individual, as the intravenous inoculation of healthy men with blood from a patient suffering from dengue is followed by a typical attack of the disease. 2. That the organism causing the disease is probably ultramicroscopic in size, as the inoculation of infected blood into healthy men after it has been passed through a filter which retains the smallest known organism, produces a typical attack of dengue. 3. That the incubation period is four days whether filtered or unfiltered blood be used in inoculation. 4. That the disease is not contagious. 5. That dengue is transmitted by at least one species of mosquito (*Culex fatigans*), as proved by experiment.

MEDICAL RECORD.

February 23, 1907.

1. Brachial Neuralgia and Arm Pains, By CHARLES L. DANA.
2. The Treatment of Acute Diffuse Peritonitis, By RICHARD DOUGLAS.
3. Koch's Emulsion of Bacilli in the Diagnosis of Incipient Thoracic Tuberculosis, By WILLIAM MEYER.
4. Observations on an Ideal Local Anæsthesia for Submucous Resection, By F. E. MILLER.
5. The Treatment of La Grippe, By P. J. McCOURT.

1. Practical Neuralgia and Arm Pains.—Dana states that neuralgia of the brachial plexus is a disease characterized by severe pains centring in the upper arm and usually involving the whole upper extremity and shoulder; it runs a course of several months and is due to irritation or inflammation of the trunks of the brachial plexus and its roots of origin. This irritation does not usually reach the degree of neuritis, and the disease does not show the paralysis and atrophy, anæsthesia, and vasomotor symptoms of neuritis as a rule. The onset is rather sudden, but there may be severe preliminary aching in the arm for a few days, and sometimes there are short preliminary or abortive attacks. Usually, however, the patient wakes at night

or notices in the morning a distinct and severe pain involving the upper arm and shoulder, or perhaps the whole arm. The pain usually is most acute, however, on the inner and front side of the arm and in the back between the shoulders. It is very intense and runs down the forearm and into the fingers, involving sometimes the whole hand, but usually only the first, second, and third fingers. It is not a darting, shooting pain, but seems to be one that is general and diffuse, involving for a time the whole arm with a pain of paralyzing intensity. The pains exacerbate, coming on usually at night more severely, or more in the morning, and always more after exertion. Movement makes the suffering worse; but the arm can be handled gently without much pain. Some suffering is present nearly all the time, often robbing the patient of sleep; but it may let up for a few hours during the day and then comes back again with paroxysms of great intensity lasting for one or two hours. The chief point in treatment is rest. This must be secured by a sling, and, if necessary, by splints. In a good proportion of cases some relief is gotten by the salicylates, especially aspirin, but they must be given in very large doses, just as for acute rheumatism. Neither massage nor hot baths should be given at first. But after two or three weeks hot applications of mud or flannel can be used. The patient must understand that, as a rule, it takes ten or twelve treatments to accomplish results. After a course of salicylates, tonics can be given. The author does not know any drug that is of any special value, unless it is strychnine, in massive doses. Some patients rush off to Hot Springs at Virginia or elsewhere when they find their neuritis coming on. The treatment here is not abortive, however, and sometimes not especially helpful in the acute cases. The trouble is that at the beginning patients need most of everything rest, and this is not obtained satisfactorily at our American bath resorts or by a trip to Europe. Arm pains, which once were due to neuritic conditions, sometimes become habit pains; the patient has a "constitutional armache," just as some have constitutional headache. The best and only treatment for these patients is to ignore the trouble absolutely. When the pains are rather chronic, *i. e.*, after four to six weeks, massage and electricity do some good. The patient gets well anyway in three to six months as a rule. The disease may recur, but this is rather rare, and only in about ten per cent. of his cases. It is rarely double, and when so is invariably an exhaustion neuralgia, rather than a pure neuritis.

4. Observations on an Ideal Local Anæsthesia for Submucous Resection.—Miller advocates the following as a local anæsthesia for submucous resection: The mixture consists of about 20 to 25 grains cocaine crystals placed in a shallow dish and dropping sufficient adrenalin chloride solution, 1 to 1,000, to dissolve the crystals. The method of applying this solution is as follows: By wetting cotton on the applicator so that there will be no excess of solution, thereby avoiding paralyzing the constrictors of the pharynx, swab over the entire field of operation with applicator. With this solution the author has been able to operate for three quarters of an hour without the slightest discomfort to the patient. In the last forty cases of submucous resection of the septum, this mixture was used with greatest comfort to his patients, being absolutely free from pain and with minimum of hæmorrhage; reducing the former cocaine toxic symptoms, the bane of the nasal surgeon's operations, without general anæsthesia. Formerly, he used a solution of 2 per cent. resorcin and 4 per cent. cocaine as a spray so that the nostrils could be, as it were, prepared for internal treatment without hurting or irritating them by instrumentation. The resorcin also had the effect of not only enhancing the anæsthetic power of the cocaine, but

changed its excessively bitter and nauseous taste, thus relieving to a large degree its psychic effect. To further remove this last named phase and to better the patient's self control, he uses immediately before the cocaine-resorcin solution a nerve sedative and vaso-motor controller, of:

R Sodii bromidi,)
Potassii bromidi,) āā gr. x;
Ammonii bromidi,)
Spts. ammon. aromat., ʒi;
Aquæ q. s. ad, ʒiii.
Sig.: At one dose.

BRITISH MEDICAL JOURNAL

February 9, 1907.

1. The Toronto Hospital for Advanced and Far Advanced Cases of Consumption, By Sir W. H. BROADBENT.
2. A Retrospect of a Thousand Consecutive Cases of Abdominal Surgery, By J. SWAIN.
3. The Claim of the Surgeon to Conduct the After Treatment of Operation Cases; with Some Remarks on Position and Flatulent Distension After Abdominal Operation, By C. A. MORTON.
4. The Dissemination of Intraabdominal Malignant Disease by Means of the Lymphatics and Thoracic Duct, By W. M. STEVENS.
5. On the Temperature in Malignant Disease of the Liver and Bile Passages, By J. W. RUSSELL.
6. A Forceps in the Abdominal Cavity for Ten and a Half Years, By E. F. STEWART.

2. **Abdominal Operations.**—Swain's paper is based on a series of one thousand consecutive abdominal operations. The chief sources of infection during the operation are the skin of the operator and that of the patient. The surgeon's hands should be thoroughly scrubbed with soap and hot water, and then immersed in a 1 to 500 solution of biniodide of mercury in 70 per cent. alcohol. Rubber gloves should always be used. The skin of the patient should be shaved, treated with turpentine, ether, soap and water, and then covered with a weak antiseptic dressing. Just before the operation it should be covered with a cloth wet with the alcoholic biniodide solution. All incisions should be as short as possible, consistent with freedom of manipulation; if in the lateral parts of the abdomen, the muscular fibres should be separated after McBurney's method, and not divided. Marine sponges should be discarded in favor of swabs of dry sterile gauze, and all swabs placed in the abdomen should have long tapes attached to them. Boiled silk or cellulose thread should be used inside the peritoneal cavity, the former for intestinal suture, the latter for ligatures. Irrigation of the abdomen has been practically abandoned, except in some cases of rupture of the intestine or perforation of an ulcer. When resorted to, it should be free. In nonsuppurative cases two or three pints of hot normal saline solution may be put in the abdomen and left there to be absorbed; this prevents subsequent thirst and relieves pain. Superficial stitches are removed at the end of a week; deep ones are left in a week longer. When the incision is over two inches long, the patient should wear an abdominal belt and pad for six months or a year. **Ovaries and Fallopian Tubes.**—Of 101 operations on these organs, fifty-six were for adenocystoma of the ovaries, and forty-five for solid tumors. Attacks of pain and vomiting with collapse, in association with ovarian cysts are frequently due to twisting of the pedicle, and if not speedily relieved by operation may prove fatal. Solid ovarian tumors are usually characterized by free mobility. The performance of salpingoophorectomy is often an operation of great difficulty, owing to the many adhesions. Not every case of abscess or chronic inflammation of ovary and tube call for it. We must be guided by the frequency and severity of the attacks of pelvic inflammation. **Uterus and Broad Ligaments.**—The majority of the operations were for fibromyomata. The widespread belief that the occurrence of the meno-

pause has a beneficial effect on these tumors, often leads to trouble. The menopause is often delayed for many years, and in some cases the tumor grows more rapidly after the menopause has been passed. Indications for operation are large size of the tumor, hæmorrhage, pain, rapid growth, and pressure symptoms. Myomectomy is the operation of choice and should always be done if possible. Hysterectomy for cancer is very unsatisfactory in its remote results. For cases diagnosed early, colpohysterectomy is the best operation. **Liver and Bile Ducts.**—In over half the cases cholecystotomy was the operation performed. The following points seem noteworthy: 1. A painless enlargement of the gallbladder without jaundice suggests catarrhal cholecystitis. 2. A painful enlargement without jaundice suggests empyema of the gallbladder. 3. A painless enlargement with jaundice suggests an obstruction of the common duct by a malignant tumor. 4. Remittent jaundice, with chills and pain, occurs with stone in the common duct. 5. Jaundice is less common in cholelithiasis than is generally supposed. The surgeon is entirely justified by his anxiety to operate while the stones are still in the gallbladder, when the mortality is very low. The occurrence of acute diffuse peritonitis in the neighborhood of the gallbladder requires immediate operation. The writer does not approve of cholecystectomy as a routine measure in operations for gallstones; the wounds, however, heal more rapidly than in cases of cholecystotomy. **Kidney.**—In all cases of movable kidney, before operation is resorted to a belt should be tried. Nephropexy is more likely to relieve painful symptoms than nervous phenomena. Operation gives good results where there are gastric crises or symptoms of torsion of the renal vessels. **Hernia.**—Of eighty-seven patients operated upon for the radical cure of hernia, none died. The author prefers a modification of Kocher's method for ordinary cases, Bassini's method being reserved for large herniæ of old standing with widely dilated external rings. **Appendicitis.**—The writer invariably endeavors to remove the appendix in any case of operation for acute appendicitis, unless it adds to the patient's risk. The removal of the focus of mischief is always highly desirable. Almost all the remaining intestinal operations were associated with intestinal obstruction. In intestinal resection simple suture is to be preferred to the use of mechanical appliances. In early cases of malignant disease of the intestine the ideal treatment is resection and simple suture. Colotomy for irremovable malignant disease of the large gut is an unsatisfactory operation at the best. **Stomach.**—Of the twenty-seven operations about one half were gastrojejunostomies. Gastrorrhaphy for perforating ulcer is most successful when performed within twelve hours of the perforation. **After Treatment.**—A pillow placed under the knees relieves the strain on the abdominal muscles. Morphine may be given for pain during the first twenty-four hours, but not later on. Should the onset of peritonitis be suspected, a dose of calomel should be given. Hot water by the mouth is useful to relieve thirst and check vomiting. Nutrient enemata should be given when vomiting is present, as they promote the voluntary expulsion of flatus—one of the best signs of recovery from shock. No raw milk should be allowed, as it forms a coagulated mass, which upsets the majority of patients.

4. **Lymphatic Dissemination of Malignant Disease.**—Stevens states that the thoracic duct undoubtedly plays an important rôle in the dissemination of intra-abdominal malignant disease and of tuberculosis. This duct may act as a "simple carrier" of infective material, or it may be directly involved, and in some cases it may be actually obstructed. In connection with such obstruction it is remarkable that chylous ascites is so rare. The supraclavicular glands on the left side are

more frequently involved in intramalignant disease than is generally supposed. In many cases careful percussion will reveal the presence of such enlargement in the clavicular and infraclavicular regions. These glands may become infected through "regurgitation," but in most cases it is by direct communication of the disease along the walls of the thoracic duct, extending to the lymphatic vessel coming from these glands. It is probable that many cases of so called primary mediastinal growths may really be of secondary origin, as cancerous disease, especially of the stomach, may be very latent, and a small growth of the stomach may be readily overlooked.

5. Fever in Cancer of the Liver.—Russell's conclusions are based on the observation of fifty-two cases of malignant disease of the liver or bile passages. Nearly two thirds of the cases show some degree of pyrexia, at any rate in their later stages. It may reach a considerable elevation, but rarely shows genuine intermissions. It is common for successive periods of fever to alternate with apyrexial intervals. Rigors do not occur in uncomplicated cases of growth of the liver. Fever is especially common in cases of growth of the gallbladder and bile ducts. The condition is frequently complicated by the presence of gallstones. Rigors apparently only occur when calculi are present. In hepatic abscess the chart shows little that is characteristic of suppuration.

6. Forceps in the Abdomen.—Stewart reports the case of a woman, aged forty years, who had suffered from diarrhoea alternating with constipation, sudden acute abdominal pain, and pains in the legs, ever since an operation ten years previously for the removal of an ovarian tumor. Abdominal examination showed the presence of a hard body in the left iliac region, which the x rays showed to be an artery forceps. Abdominal section was performed and a forceps removed, five inches long, the handles being two inches wide. Recovery was uneventful.

LANCET.

February 9, 1907.

1. The Diagnosis and Localization of Cerebral Tumors (*Lettsomian Lectures, I*), By C. E. BEEVOR.
2. Portal Cirrhosis of the Liver, By Sir D. DUCKWORTH.
3. Affections of the Lachrymal Apparatus, By S. STEPHENSON.
4. A Case of Sarcoma of the Scapula in a Child Aged Four Years, with Notes on Sarcoma in the Bones of Young Children in General, By L. B. RAWLING.
5. Fibroids of the Uterine Cervix, By J. R. MORISON.
6. Appendicitis in Typhoid Fever, By C. A. LEEDHAM-GREEN.
7. Sanitary Conditions in Relation to Infantile Mortality, By T. DIVINE.
8. The Role of the Blood Plasma in Disease. II., By H. CAMPBELL.

2. Portal Cirrhosis.—According to Sir D. Duckworth, portal cirrhosis or fibrosis of the liver is the result of alcoholic excess. Alcohol only acts indirectly on the liver by setting up gastroenteritis, which gives rise to specific poisons which on reaching the liver produce the change in the cells and connective tissue. Portal cirrhosis is most frequently met with in middle life, few patients being over fifty years of age. It is a chronic interstitial hepatitis, a monolobular cirrhosis. In the earlier irritative stage there is dyspepsia, morning vomiting, enlargement of the liver, diarrhoea, and loss of strength. Copious hæmatemesis may occur, leaving profound anæmia, and melæna may occur for a day or two. Subsequently hæmorrhages may prove fatal. The second stage is established when abdominal dropsy begins. The hepatic condition is but part of a widely spread change in all the tissues of the body. The small capillary enlargements on the skin of the arms, neck, and trunk, the "stigmata" or spider-like angiomas, are practically peculiar to portal mono-

lobular cirrhosis, especially the alcoholic variety. A general hæmorrhagic condition may be present. Jaundice is not present to any extent. When the liver is contracting and ascites is progressing, the fluid must be removed by tapping, and the earlier this is done the better. Talma's operation to prevent further accumulation of fluid consists in setting up adhesive inflammation between the peritoneal surfaces of the liver and the diaphragm by scraping these surfaces. Another operation is epiploxy, in which the greater omentum is stitched to the anterior abdominal wall. Either of these operations should be carried out in the early stage of ascites, and then only if the patient is in good condition. The results so far have not been very encouraging. The best drugs are compound jalap powder, and mercury, squill, and digitalis pill.

4. Osseous Sarcoma in Children.—Rawling reports a case of sarcoma of the scapula in a child, aged four years, and also gives a tabulated summary of twenty-three cases of sarcoma of the bone in young children. The condition is comparatively rare in young children. Heredity appears to have no place, trauma is the exception rather than the rule, and age is immaterial. Boys are more prone to the disease than girls, in the proportion of three to two. No part of the osseous system is exempt from primary sarcomatous invasion, but certain bones show a special liability; among them may be mentioned the bones of the skull, especially of the frontal and orbital regions, the femora, especially the lower end, the scapulæ, and the upper jaw. Microscopically any form of sarcoma may be present; the round celled variety being the most common. In nearly all cases the tumors are highly malignant, involving early the adjacent parts and the corresponding lymphatic areas. Metastases are common. About one half the cases are inoperable from the first.

6. Appendicitis and Typhoid Fever.—Leedham-Green reports three cases of appendicitis occurring in association with typhoid fever. The differential diagnosis may be very difficult. Typhoid may give rise to appendicitis in one of two ways: First, a true typhoid inflammation and ulceration, possibly going on to perforation may affect the lymphoid tissue of the appendix just as it may any other portion of the intestinal tract; and, secondly, appendicitis may develop in typhoid fever from general œdema and hyperæmia of the gut. In addition typhoid fever may rouse into activity a latent or chronic appendicitis.

LA PRESSE MEDICALE

January 20, 1907.

1. Fatty Acids and Tubercle Bacilli, By JEAN CAMUS and PH. PAGNIEZ.
2. The Disinfection of the Japanese Soldiers on Their Return From Manchuria, By P. DESFOSSES.
3. Treatment of Hæmorrhoids by Injection of Carbolized Glycerin, By J. D.
4. The Sleeping Sickness According to the Report of Professor Koch, By R. ROMME.

2. Disinfection of the Japanese Soldiers on Their Return from Manchuria.—Desfosses describes elaborately the process of disinfection to which the men of the Japanese army and their effects were subjected at the end of the Manchurian campaign before they were allowed to return to their mother country. The purpose was to guard against any possibility that pathogenic germs might thus be introduced into the country in spite of the excellent sanitary condition of the troops.

3. Treatment of Hæmorrhoids by the Injection of Carbolized Glycerin.—J. D. speaks highly of this method of treatment. A 60 to 80 per cent. solution of carbolic acid and glycerin is injected under complete narcosis. The needle of the syringe is introduced into the base of the external hæmorrhoid through the skin and then, under the guidance of the finger, which has been inserted into the anus, one or two drops are

injected into each hæmorrhoid. Usually a single puncture suffices.

BERLINER KLINISCHE WOCHENSCHRIFT.

January 14, 1907.

Dedicated to Johannes Orth on his sixtieth birthday.

1. Contribution to the Action of Intravenous Injections of Suprarenin on the Aorta of Rabbits,
By C. KAISERLING.
2. Concerning the Course of Inoculated Tuberculosis in Guinea Pigs,
By H. BEITSKE.
3. Concerning Muscular Cirrhosis of the Lungs,
By C. DAVIDSOHN.
4. With Regard to the Question of Latent Tubercle Bacilli,
By L. RABINOWITCH.
5. Concerning Experimentally Produced Meteorism,
By A. BICKEL.
6. Is the Concentration of the Reflex Secretion of the Fundus of the Stomach Dependent on the Concentration of Solutions Introduced Into the Stomach?
By O. SCHLOSS.
7. The Question of the Mucus Secretion of the Stomach,
By M. PEWSNER.
8. Pellotin,
By L. PINCUSOHN.
9. Investigations Concerning the Human Pancreas,
By L. WOHLGEMUTH.
10. Chyluria,
By E. SALKOWSKI.
11. Lipolysis, Agglutination, and Hæmolysis,
By C. NEUBERG and E. ROSENBERG.

1. **The Action of Intravenous Injections of Suprarenin on the Aorta of Rabbits.**—Kaiserling injected intravenously a number of rabbits with a 1 to 1,000 solution of suprareninum hydrochloricum, and examined their aortas after death in search of the changes which have been described by other authors as produced in this manner, but he found neither macroscopically nor microscopically necrosis, calcification, or degeneration in any of the coats of the vessels. No trace of any process could be found which resembled sclerosis, atheroma, or ossification of human arteries. The only positive condition found, aside from the macroscopically great dilatation of the aorta, was a marked stretching of the elastic lamellæ of the dilated vessels. He propounds the following questions as demanding answers before positive knowledge can be obtained on this subject: 1. In what percentage of rabbits does calcification of the aorta occur without the introduction of toxic substances? 2. Has age, race, and mode of life any influence on this spontaneous affection? 3. How is it that this action upon the aorta takes place only after intravenous (intratracheal?), and not after another forms of introduction? 4. Can other methods of increasing the blood pressure produce similar changes, if so, with what certainty, and by what conditions of life are they favored and hindered? 5. How are other animals affected? A great mass of evidence must be accumulated before these questions can be answered, in the author's opinion the examination of not less than 10,000 rabbits will be necessary to answer the first two, and he concludes that our knowledge on this subject, the influence of adrenalin upon the arteries in general, and on the aorta of rabbits in particular is extremely minute.

2. **The Course of Inoculated Tuberculosis in Guinea Pigs.**—Beitske disagrees with Weleminsky, who advanced the theory that the infection always passes first through the bronchial glands before it enters the circulation, and states that the bacilli are carried from the point of infection through the lymphatics to the thoracic duct, or the lymphatic trunks, thence into the blood, by which they are carried to the lungs and the bronchial glands.

3. **Muscular Cirrhosis of the Lungs.**—Davidsohn describes a very interesting autopsy in which was found a malignant ulcerative endocarditis of the pulmonary valve, septic infarct, and abscess of the left lung, dry pleurisy on the left side, carnification of the right lower lobe, chronic parenchymatous nephritis, intestinal hæm-

orrhages, hyperplasia of the spleen, gallstones, chronic fibrous epididymitis, and chronic fibrous perihepatitis. The carnification of the lung was a proliferation of muscular substance between thin fibrous septa. The author suggests that the name carnification should be applied to cases of interstitial development of muscular tissue, while the term muscular cirrhosis should be applied to those in which the muscular fibres are mixed with or permeated by connective tissue fibres.

4. **Latent Tubercle Bacilli.**—Rabinowitch obtained tubercle bacilli from the swollen lymphatic glands of a child, fourteen months old, who had died of bronchopneumonia, and from the calcareous glands of four adults, none of whom had exhibited any other signs of tuberculous disease. The bacilli were proved to be virulent by inoculation into rabbits.

5. **Experimentally Produced Meteorism.**—Bickel observed that after injections of sugar into the veins of dogs the abdomina of these animals were apt to become greatly distended with gas, and found that this meteorism did not follow if the œsophagus was ligated before the solutions of sugar were injected.

6. **Is the Concentration of the Reflex Secretion of the Fundus of the Stomach Dependent on the Concentration of Introduced Solutions?**—Schloss answers this question in the negative and asserts to have shown by his experiments that the concentration of the secretion is entirely independent of that of the solution introduced.

8. **Pellotin.**—Pincussohn describes the action of pellotin, an alkaloid obtained from one or more species of cacti, on the heart in frogs, turtles, and mice.

9. **Investigations Concerning the Human Pancreas.**—Wohlgemuth states that the secretion of the pancreas is slight when the diet is albuminous, and particularly so when it is fatty, but that the ingestion of carbohydrates calls it forth in abundance. Hence he recommends that in cases of pancreatic fistula the diet should be wholly of fat and albuminous substances, while carbohydrates should be absolutely avoided. The secretion may be still further lessened by the daily administration of modern doses of sodium bicarbonate, preferably with meals. When it seems desirable to make restitution for the pancreatic juice which has escaped from the economy pancreon may be given several times a day.

10. **Chyluria.**—Salkowski reports a case of chyluria in which no parasites could be found, and describes very fully the tests employed to determine the origin of the fat with which the urine was loaded. The urine suddenly became clear about six weeks later.

LA RIFORMA MEDICA

January 19, 1907.

1. Methods of Treatment and Prescriptions (*Concluded*),
By AUGUSTO MURRI.
2. The Aggressives of the Typhoid and of the Colon Bacillus,
By FRANCESCO FEDE.
3. The Aggressives of the Bacillus Coli,
By PASQUALE SCARANO.
4. Multiple Lymphosarcoma at the Age of Seventy-six,
By F. FAZIO.
5. The Diazo Reaction in Children After Chloroform Narcosis,
By A. B. GIANASSO and V. OVAZZA.

2. **The Aggressives of Typhoid and of Colon Infection.**—Fede found that while the aggressives of these two infections presented noteworthy differences in cellular composition of the exudates from which they were obtained, the aggressives of both, the colon and the typhoid bacillus, produced nearly the same effects. Usually the pleural exudate was much less abundant than the peritoneal, but the aggressive properties of both were approximately the same. Immune serum was capable of neutralizing the aggressive properties of the exudate of the same germ, which served to prepare the serum. This neutralizing power may be explained by the occurrence of a noteworthy phagocytosis

which occurred in the inoculated animals. The aggressins contained substances which were precipitated *in vitro* by the corresponding immune sera.

3. The Aggressins of Bacterium Coli.—Searano found that the quantity of exudate produced by the inoculation of the *Bacterium coli* into the peritoneal cavity was in proportion to the mass of germs injected. Their aggressine, prepared according to Bail's technique, did not kill the animals, but produces in the long run a cachexia. The aggressive power of the exudate from *Bacterium coli* varies in proportion to the virulence of the germ: By the repeated inoculation of an aggressine of the bacterium we could produce a feeble degree of immunity against the various types of this germ.

5. The Diazo Reaction After Chloroform Anæsthesia in Childhood. Granasso and Orazza found the diazo reaction in the urine of seventeen out of thirty-six children after chloroform narcosis. In ten cases it was very marked; in six cases, faintly marked. The reaction did not seem to have any connection with the duration of the anæsthesia. Nor could any relation be found between the reaction and the presence of fever, as cases occurred in which there was an intense reaction, but no fever. In nine of the positive cases there were undoubted evidences of tuberculosis. The reaction did not seem to have any prognostic value.

January 26, 1907.

1. Twenty-three Echinococcus Cysts of the Liver, By NICOLÒ COLETTI
2. The Rapid Absorption of Iodine Into the System by Means of Iothion, By G. A. AUVERGNY.
3. The Origin of the Vesicular Respiratory Sound, By G. POLACCI.

3. The Genesis of the Vesicular Respiratory Murmur.—Polacci discusses the various theories held as to the origin of the respiratory sound known as "vesicular." Some writers located the origin of this sound in the larynx, others in the large bronchi, etc. Researches on patients in whom a total removal of the larynx had been performed were published by Coats (1886) and by Queirolo (1888). In both cases the vesicular murmur continued to be heard over the entire chest. The present author records his observation in a third case of laryngectomy in a woman, aged seventy years. In this case he was able to hear the vesicular sound over the peripheral portions of the lungs, while the central portions gave harder breathing sounds. His observation, therefore, confirms those of Coats and of Queirolo. The vesicular murmur, therefore, has but one origin, namely, in the alveoli themselves, and not in the larynx or the trachea.

ROUSSKY VRATCH.

January 6, 1907.

1. The Fundamental Principles of Medical Thinking (*An Inaugural Lecture*), By M. B. ZILE.
2. Obstruction of the Intestine Due to Meckel's Diverticulum, By B. K. FINKELSTEIN.
3. The Chemical Analysis of Human Blood, By A. I. VINOGRADOFF.
4. Resection and Gastroenterostomy for Ulcer of the Stomach, By S. I. SPASSOKUKOTSKI.
5. The Dosage of the Röntgen Rays, By S. N. BORMANN.
6. Report of the St. Petersburg Municipal Lying-in Asylums for 1905 (*to be continued*), By L. A. KRIVSKI.

1. Medical Thinking.—Zile, in an elaborate analysis of the processes of modern medical thinking, divides our methods of arriving at a clinical conclusion into, (1) anatomical thinking, (2) functional, (3) constitutional, and (4) psychological. The physician must study the psychology of disease, and must individualize in both diagnosis and treatment.

2. Meckel's Diverticulum Causing Obstruction.—Finkelstein reports two cases of intestinal obstruction due to Meckel's diverticulum. One of the patients recovered. In the first case, which was fatal, the in-

testine was compressed by a ring formed by the adherence of the end of the diverticulum to the mesentery. The gut was found to be gangrenous. Early operation is urgently advocated in these cases.

4. Surgical Treatment of Gastric Ulcer.—Spassokukotski reports five cases of gastric ulcer in which he performed gastroenterostomy and five in which he performed resection of the ulcerated gastric wall. The former operation is indicated when a healing ulcer produces a cicatricial contraction of the organ. Even after gastroenterostomy the ulcer may continue to give rise to pain, and may perforate. Resection is to be preferred in a choice between the two operations, especially when the fundus of the stomach is involved. Resection is, however, much more dangerous operation than gastroenterostomy.

5. Dosage of Roentgen Rays.—Bormann recommends the use of Klienboeck's dosimetre for the determination of the dosage of the x rays. The vacuum tube must be properly "loaded," and under these conditions has a constant "hardness." The ordinary method of determining the hardness of a tube by transilluminating the bones of a hand is very crude and a number of appliances have been devised to improve this mode of measurement. Of these the best is that of Klienboeck, which determines the general dose of the rays, i. e., the hardness of the tube, the distance of the latter from the patient, and the time of the exposure. The method consists in exposing strips of sensitized paper enclosed in light proof envelopes to the rays at the same distance and for the same length of time as the patient is exposed. The strips are developed in a dark room and the shade of color obtained varies with the exposure, etc. This shade is compared with a scale, and thus the dose is measured.

THE JOURNAL OF NERVOUS AND MENTAL DISEASE

February, 1907.

1. On Herpetic Inflammations of the Geniculate Ganglion. A New Syndrome and Its Complications, By J. RAMSAY HUNT.
2. Brain Tumor Symptom Complex with Termination in Recovery, By HERMAN H. HOPPE.
3. After Care and Prophylaxis and the Hospital Physician, By ADOLPH MEYER.
4. The Insane Commission of the St. Louis City Jail, an Experiment in Civic Medicine, By SIDNEY I. SCHWAB.
5. Consciousness in the Brutes (*Concluded*), By GEORGE V. N. DEARBORN.

1. On Herpetic Inflammations of the Geniculate Ganglion. A New Syndrome and Its Complications.—Hunt comes to the following conclusions: The facial nerve like the trifacial is a mixed nerve. Its sensory ganglion is the geniculate. The motor root of the geniculate is the facial nerve proper and its sensory root is the nerve of Wrisberg. Below the ganglion the peripheral divisions are the facial nerve proper, the great and lesser superficial petrosal nerves, the external petrosal, and the chorda tympani. This ganglion is of the spinal ganglion type, and therefore in common with other ganglia of this type, comes within the realm of true herpes zoster. The zoster zone for the geniculate is found in the interior of the auricle and in the external auditory canal. The only neural connections existing between the geniculate ganglion and this cutaneous area are the auriculotemporal branch of the fifth through the medium of the small superficial petrosal nerve and otic ganglion and through the facial nerve proper. One or both of these routes may be taken by the afferent fibres from the auricle in their central course; in his opinion the facial route is the more probable one. The ear zone of the geniculate is intercalated between the zone for the Gasserian in front and the cervical ganglion behind, so that the zoster zones of the cephalic extremity are represented by the Gasserian (face and forehead), the geniculate

(ear), the second and third cervical ganglia (occiput and neck). The zoster inflammations while attacking chiefly one, not infrequently involve more than one ganglion, milder changes showing in a series of ganglia above and below, diminishing in intensity from the central focus. For the same reason zoster in any of the zones of the cephalic extremity, may be accompanied by inflammatory reaction in the other ganglia of this group. The pathology underlying the affection is the specific hæmorrhagic inflammation of the ganglion as found in zona. As the geniculate is lodged in a narrow bony canal and stands in close relation to the seventh and eighth nerves, the characteristic syndrome is produced, which may be divided into three clinical groups: (1) Herpes zoster auricularis; (2) herpes zoster in any of the zoster zones of the cephalic extremity (herpes auricularis, herpes facialis, and herpes occipitocollaris) with facial palsy; and (3) herpes zoster of the cephalic extremity with facial palsy and auditory symptoms (tinnitus, deafness, vertigo, vomiting, nystagmus, and disturbances of equilibrium).

2. Brain Tumor Symptom Complex with Termination in Recovery.—Hoppe gives the history of three such cases, and observes that, in the first place we should not be too pessimistic in our prognosis of brain tumors, especially in cerebellar cases, until a considerable period of time has elapsed; and in the second place we should not be too hasty in the recommendation of surgical interference both in children and in adults, until therapeutical measures have been given a long and complete test.

AMERICAN JOURNAL OF OBSTETRICS

February, 1907.

1. The Management of Bowel of Doubtful Vitality in Operations for Relief of Strangulated Hernia and Intestinal Obstruction, By R. B. HALL.
2. Abdominal Sinuses, By L. R. PIERCE.
3. Pyelitis Complicating Pregnancy, By H. MEEK.
4. Should the Appendix be Removed as a Matter of Course When the Abdomen Has Been Opened for Other Conditions? By A. LAPHOIN SMITH.
5. Vaginal Cæsarean Section and Its Application, By G. T. HARRISON.
6. The Ætiology and Treatment of the Neuroses of Infancy and Childhood, By G. N. ACKER.
7. The Immediate Results of Conservative Operative Measures on the Tubes and Ovaries, By H. ROBB.
8. Do Present Results Justify Partial Removal of the Uterine Appendages When Operating for Inflammatory Diseases? By F. KRUG.
9. Do Present Results Justify Partial Removal of the Uterine Appendages When Operating for Inflammatory Diseases? By L. G. BALDWIN.
10. Maternal Dystœcia From "Right Posterior Ileum" Producing Persistent R. O. P. Position, By M. E. BATES.
11. Strangulated Hernia, By A. R. SHAULS.

1. The Management of Bowel of Doubtful Vitality in Operations for Strangulated Hernia.—Hall thinks it well to divide cases of injured bowel in hernia and obstruction operations into three groups: (1) Those in which it is evident that resection is unnecessary; (2) those in which it is certain that resection must be performed; (3) those in which the vitality of the bowel is a matter of doubt. It is to the last of these that especial attention is called. The author's method of treatment consists in placing a layer of iodoform gauze, three inches in width, against one side of the mesentery, contiguous to the bowel of doubtful vitality, passing it over the bowel, and down the side of the mesentery opposite the first. The loop of bowel thus covered is placed just under the abdominal wound. One or two of the ligatures of the wound are left untied, and the end of the gauze, for the length of a foot or more, is allowed to hang out of the wound. The gauze will quickly adhere to the peritonæum, adhesive exudate will be thrown out in abundance, and if perforation occurs the

discharge will not contaminate the peritoneal cavity. After a few days the gauze may be removed without force and a rubber drainage tube substituted. The fistula which results usually heals spontaneously.

2. Abdominal Sinuses.—Pierce observes that the cure of such conditions is often very difficult. He is of the opinion that medical treatment offers the best results. Absolute rest in bed is essential, the diet should be concentrated, giving as little residue as possible, and free from fermenting elements. Absolute cleanliness is also a prerequisite. The object sought is firm closure at the entrance of the sinus through the intestinal wall by granulation tissue. If this is accomplished a simple serous sinus will remain. As soon as the fistula occurs it should be cleansed with a suitable antiseptic, and the canal packed with iodoform gauze dipped in balsam of Peru. This should be repeated at short intervals, and when the opening has become very small the bowels should be thoroughly evacuated by the aid of a cathartic. Peristalsis should then be checked by morphine for a week and the bowels then opened by an enema. No instrument should be passed into the sinus until the persistent absence of gas and fæces shows that the intestinal fistula has healed. The use of the Paquelin cautery to the wound is sometimes advisable. If the fistula does not close it may be necessary to dissect it out and possibly resect the bowel.

Letters to the Editors.

BARBARISM IN MEDICAL LANGUAGE.

126 EAST TWENTY-NINTH STREET,

NEW YORK, February 11, 1907.

To the Editors: In *La Semaine médicale*, 1906, No. 52, appeared an article by M. Sakorrhaphos, professor of medicine in the University of Athens, entitled *Comment on doit former les néologismes médicaux du Grec*, in which not only all I have been saying on this subject these thirteen years is stated, but also many striking examples mentioned of incorrect medical terms which I myself had exposed in numerous writings.

Littre, more than half a century ago, wrote: "Medical language, which in its first composition is almost entirely Greek, has not ceased to fall back on this source when the inevitable necessity presents itself of coining new terms, but in many instances nomenclators of modern times have gone astray by creating unnecessary words and by violating the laws of analogy and orthography."

Corrections of this evil are useful under all circumstances for teaching as well as for thinking. Sakorrhaphos has apparently not read my own remarks in which I refer to the beautiful words of Lavoisier on the necessity of correct scientific language:—

"Onomatology furnishes the real instruments for the operation of the mind; it is important that these instruments should be of the best, and it is indeed working in the interest of science, for the progress of science, when we exert ourselves to improve our onomatology.

... In science we have to distinguish three things: The series of facts which constitute the science, the ideas which recall the facts, and the words to express the ideas. The word has to develop the idea, the idea has to embrace the fact; these are three impressions with the same seal. Since the words preserve the ideas and transmit them, perfection in science is impossible without perfection in language. ... However true the facts may be, however correct the ideas developed by facts, only wrong impressions will be transmitted so long as the expressions by which they are communicated are not exact."

The current excuse for retaining barbarisms in our nomenclature, "*usus est tyrannus*," might be translated "Darwin is right." G. H. Roger, quoted by Sakor-

rhapsos, says numerous technical terms in medical nomenclature are so incorrectly formed that the Greeks must find it difficult to recognize the origin and the meaning of such terms supposed to be Greek. The incessant progress in medicine, especially since the introduction of bacteriology, has necessitated the coining of new names for new conceptions; investigators and discoverers, in giving new terms, have done so without regard to grammar; they are in the habit of consulting a lexicon, pasting two or three words together, no matter if the new formations correspond with grammatical rules or give the correct meaning.

Irregularities in the formation of new medical terms have been permitted an extensive field because physicians of recent periods have more and more abandoned grammatical studies. While grammarians have thus far done very little in presence of an existing animosity against scientific language in medicine, the innovators have carried their audacity to the last limits, to such a point that medical onomatology threatens to become before long entirely unintelligible. I fully agree with Sakorrhaphos when he speaks of the animosity of medical men when medical slang is attacked. Every true man of science will agree with him when he says it would be well to check the abuse of language. Medicine progressing all the time, we are menaced, if the abuse of language continues, with finding ourselves at short notice before a chaos which will compel the medical student to a long and ungrateful study.

The author illustrates the condition of our onomatology by some examples: Amyotrophia, amyatrophia. These two synonyms, of which the former is more frequently employed than the latter, have not been constructed according to grammatical rules. They do not derive from *μῦς*, muscle, and *τροφή*, nutrition, as medical dictionaries point out, but from *μῦς* and *ἀτροφία*. The latter comes from *ἄτρωσις*, without nutrition, which is formed of a privative and *τρέφωμαι*, to nourish one's self. Therefore the term amyatrophia, exactly like amyotrophia, where the privative has been taken out of its regular place to be carried before the prefix *μυο-*, figures, as the grammarians call it, as hyperlate, i. e., inversion, but the Greek language does not utilize in compounds what is contrary to syntax and incorrectly constructed. Two privatives constitute a perissology, or contradiction—two negatives are equal to an affirmation—and for this reason Sakorrhaphos suggests, in place of two incorrect terms, the word myatrophia, and corresponding with this he offers as substitutes for the incorrect terms amyataxy and amyastheny the words myataxy and myastheny. This would, besides, be in conformity to the name neurastheny, which is grammatically well composed.

Anophthalmy is generally employed to designate congenital absence of one eye. In Greek, however, this word indicates complete absence of the eyes. Congenital absence of one eye is called in Greek monophthalmy, from *μόνος*, alone and *ὄφθαλμός*, the eye. The ancient Greeks called the cyclopes monophthalmes and not anophthalmes.

Abrachia has been mentioned by me already. The translation is not absence of arms, but absence of rocks, from a privative and *ἀράχος*, a rock. I have found the term abrachionia, from a privative and *βραχίων*, the arm. Sakorrhaphos gives lipobrachionia, from *λείπω*, being absent, in analogy with lipolephary, lipoglossy, lipotrichy, but he uses also abrachionia. He says we should not designate congenital absence of the arm and head by abrachiocephalia, but abrachionocephalia, and says this word might appear difficult on account of its length, but it would, from the standpoint of etymology, be unjust to mutilate a word for the sake of saving one or two syllables; for the same reason we should not say brachiotomy (cutting of rock), but brachionotomy, according to the

principle which is to be considered here: Compound words are formed from the genitive, which contains the root, or, according to grammatical language, the theme, of the word, not tenotomy, tenorrhaphy, but tenotomy, tenontorrhaphy. The genitive of *βραχίων* is *βραχίωνος*, that of

Acromegaly, chiromegaly, and splenomegaly have been formed contrary to the principles which govern word formation in Greek. In my own writings I pointed out these examples several years ago, and I gave as correct terms megalacria, megalochiria, etc., or for those who like a shorter word megacria, etc. Sakorrhaphos says: When the Greeks form a compound with the aid of a substantive and one of the adjectives *μεγρός*, *μικρός*, *πολύς*, etc., they always give the adjective as first component. In accordance with this rule there exists already a certain number of medical terms, such as macrocephaly, macroglossy, microcephaly, polydactyly, and acinesia. I had retained this word because grammatically it is correct. Sakorrhaphos shows, however, that it is too indistinct. He says Romberg has employed it as a synonym of paralysis. The word exists, indeed, in Greek, but its meaning is so extensive that it could not be applied usefully in medical nomenclature. It has been employed, for instance, to mean difficulty in performing certain movements in consequence of atrophy of corresponding muscles, but also to designate the interval which separates the systole from the diastole of the heart. Of these, the first interpretation is incorrect, for difficulty of movements cannot be called acinesia, but should be named dyscinesia, corresponding with dysarthria—from the particle *δύς*, and *ἄρθρον*, articulation, dyspnoea, *δυσπνοία*, difficulty of respiration, dyspepsia, *δυσπεψία*, difficulty of digestion. The term acinesia should, if employed at all, be reserved for complete absence of motion, and the name of the organ which is at fault should be added, for instance, cardiac acinesia.

Now Sakorrhaphos comes to speak about an incorrectness which has grieved me very much these last seven years. In a lecture on Atonia Gastrica, which was published in the *New York Medical Journal* for May 11, 1900, I placed stress on the fact that the word gastroptosis was ungrammatical, and gave the etymology, according to which we should say gastrop-tosia; notwithstanding the conclusive evidence I had given some editors of medical journals not only changed my spelling gastroptosis into gastrop-tosis, but in quoting my papers changed the spelling of my title Gastrop-tosis into Gastrop-tosis. The etymology which I had given in the paper quoted corresponds exactly with the one given by Sakorrhaphos. He says: Indeed, as is known, the abstract names in Greek which end in -sis remain unchanged when they enter into composition with a preposition, as, for instance, stasis, anastasis, katastasis; but when these abstract names in -sis enter into composition with another word which is not a preposition, they change the ending into -sia, like stasis, astasia—pepsis, dyspepsia, I mentioned, in order the better to demonstrate the difference, sepsis, asepsia, and sepsis, antiseptis. Sakorrhaphos gives the following illustrations: Arthrolysis, not arthrolisis; gastrop-tosis, not gastrop-tosis; nephroptosis, not nephroptosis; thyreo-ptosis, not thyreo-ptosis; hæmostasia, not hæmostasis; histolysis, not histolysis.

We have in our onomatology a great many words which are construed correctly according to grammatical rules; for instance, paralysis, not paralytia, diagnosis, not diagnosis, antiseptis, not antiseptia.

Sakorrhaphos says: "We have spoken at some length of the composition of words ending in -is and -ia, in order to show that a great number of this kind exist which are incorrect and which can be easily rectified." Then he gives some words which do not convey the meaning intended. Anæmia. In order to designate poverty or small quantity of blood we should employ

the term oligamia, from *olig-*, little, and *ama*, blood. It may appear exacting too much to suggest a correction in this case, but it is best not to refrain when the question arises of giving expression of the proper sense instead of falsifying the base of medical study.

We are in favor of short words, and at the same time we say diplocephalia and diplosomia instead of retaining the shorter and only correct Greek terms. The Greeks call one who has two heads dicephale, and not diplocephale, one with two bodies disome and not diplosome, from whence they give as substantives dicephalia and disomia. This correction is the more imperative, since medical onomatology contains already correctly formed analogous terms, as, for instance, didelphe, dicrote, didyme.

Athetosis comes from the weak radical of the verb *τιθημι*, but, entering into composition with a privative, it has been changed into *αθησία*. The word atnesia, existing already in the ancient literature, should therefore take the place of the barbarous term athetosis.

Allochiria, allocinesia.—To express duality, the pair, the couple, the Greeks do not use the adjective *ἄλλος*, but *ἑτερος*. We should, therefore, say in this case heterochiria, heterocinesia, heterogenia, heteromorphia, etc.

Actinomyces.—This incorrect term was criticised by me years ago. The genitive of *μύκης* is *μύκητος*. We have to say, therefore, mycetosis instead of mycosis, and call the disease in question actinomycetosis. For the same reason the terms saccharomycosis, trichomycosis, botryomycosis, should be saccharomycetosis, etc.

Anorchidia.—A man without testicles is called in Greek anorchos, and this pathological condition is anorthia and not anorchidia.

What Sakarrhaphos writes about -phobia, I am unable to understand; it does not correspond with what I have learned from Greek onomatology. However, in case -phobia is not distinct enough, we can call the morbid fear phobopathia.

Hyperacouria, hypacouria.—The Greeks give to one who has the sense of hearing very well developed the denomination *εὐήκοος* from *εὖ*, well, facile, and *ακοή*, hearing; from this is formed, according to grammar, *εὐηκοία*, exactly as one who is hard of hearing is called *δυσήκοος*; consequently we should say euecoia and dysecoia instead of hyperacouria and hypacouria. There exist many analogous words in medical language, such as eupepsia, dyspepsia, eutocia, and dystocia.

Pollakiuria.—Dieulafoy has given this term to designate frequency of emission of urine, not knowing that the Greeks never employ the adverb *πολλάκις* as a first component of a word. Laboulbène has suggested sychnuria, from *συχνός*, often.

About the unfortunate habit of some authors of forming new technical terms by combining a Latin and a Greek component, Sakarrhaphos says that this habit has brought about a bizarre mosaic which will finally make medical language impossible, and that this deplorable condition can only be remedied by returning to Greek language. He gives some examples which are comparatively tame when compared with many which I have given in numerous publications.

What he suggests in order to secure a reform of onomatology, the appointment of an academy *ad hoc*, is impracticable. I have pointed out the way to secure a reform without difficulty: we have simply to adopt the correct scientific terms used by the professors of the University of Athens. As soon as these terms are only known by the men in our profession who have true science at heart, there will be no question but good writers will introduce them.

The paper of Sakorrhaphos, of which I have given here an extensive abstract, shows what we can accomplish if we communicate with our Greek brethren on this great language question.

A. ROSE.

Proceedings of Societies.

PHILADELPHIA NEUROLOGICAL SOCIETY.

Meeting of October 23, 1906.

The President, Dr. D. J. McCARTHY, in the Chair.

Motor Paralysis as an Early Symptom of Tabes Dorsalis.—Dr. C. D. CAMP, after presenting two illustrative cases, said that the motor nerves of the eyes were frequently affected in the beginning of a case of tabes, but the fact that other motor nerves might be affected was not well recognized. The pathogenesis was the same as in other cases of tabes, but the toxine acted more extensively. The affection might be due to degeneration of the anterior horn cells, owing to a default of the habitual excitations upon which the vitality of the cells depended.

Dr. F. X. DERCUM said that it was well known that motor involvement might occur in well advanced tabes, but it was not, as Dr. Camp had noted, well known that these palsies might occur early in tabes. It was very common to see palsies in connection with the eye muscles in tabes; there is nothing commoner than a transient diplopia or a ptosis. Sometimes these palsies were temporary; at other times they were permanent. In both of Dr. Camp's cases the ordinary etiology of tabes had been wanting. Both syphilis and addiction to alcohol were present in one case, and the part possibly played by alcohol had to be considered; in the second case there was no history of specific disease. Dr. Dercum also called to mind the palsies met with in primary neurotic atrophy, in which disease there might also be organic changes in the chord, such as degeneration of the posterior columns. Dr. Dercum, however, agreed with Dr. Camp that the cases shown were true tabes.

Dr. ALFRED GORDON stated that a year and a half before he had reported a case in which he discussed the pathogenesis of lead intoxication. The patient presented during his life the picture of tabes, but, questioning closer, he found the patient had been a painter. He examined the peripheral nerves of all the extremities, also the chord. He found posterior sclerosis as well as degeneration of the nerve trunks.

Dr. J. HENDRIE LLOYD thought it hardly fair to criticize these cases after only a brief reference to the notes. He was skeptical about the diagnosis of locomotor ataxia in the first case presented by Dr. Camp, which was more suggestive of alcoholic neuritis. One point that raised a doubt, however, was the condition of the eyes. His ideas had been considerably enlarged and modified on the subject of the possibility of the ravages of alcohol on the nervous system. He had seen a number of cases in which the classical symptoms were not all present, but there was a clear and distinct history of alcoholism. Two years before he had a young man under his care, with alcoholic multiple neuritis, in whom the symptoms were confined to the lower extremities.

The second patient of Dr. Camp's, he thought, had a suspicious history of exposure to lead, although he had not been thus exposed for a good many years. One of the most marked cases of pseudotabes that Dr. Lloyd had ever seen had been reported from his Blockley clinic ten or twelve years before. On making a careful microscopical examination, he had found no trace of degenerative changes in the cord. The man had followed painting for many years, but also had a history of alcoholism. This, he thought, was the only matter of doubt about such cases, and it raised a very interesting question: Another interesting question was that of the possibility of locomotor ataxia beginning as a multiple neuritis. He had seen cases which suggested this possibility. There was nothing inconceivable in it.

Dr. CAMP replied that, in reference to the case in which there was a history of alcoholism which had

perhaps given rise to alcoholic neuritis, the patient had been drinking for only two or three years, and the symptoms dated back nine years. As regarded the ætiology in the second case, where there was no history of syphilis or alcoholism, there was only the one fact of the man having been a painter, twenty years before. That was a long time to go back, but he supposed that, if we had to theorize, there might be some connection between the two. Lead intoxication had been considered to be one cause of tabes.

As to Dr. Spiller's reference to a statement of Cole's, quoted by Dr. Camp, Cole's exact words were that he "could find no record of any case of multiple neuritis, in which the spinal cord was examined by the Marchi method, in which it was stated that the posterior columns were free from degeneration."

Trauma Preceding Probable Syringomyelia and Tabes.

—Dr. S. D. LUDLUM presented cases illustrative of this sequence.

Dr. DERCUM thought one important point should be insisted on in these cases; the relation of trauma should be clearly defined. He did not think too much stress should be laid on the fact of trauma in either of the cases presented by Dr. Ludlum. The relation of trauma to tabes had been gone over a great many times, and none had ever been shown. He understood that Dr. Ludlum disclaimed an ætiological relationship with trauma in the cases presented.

Dr. GORDON said that the cases did not impress him as in any way extraordinary. Traumatic syringomyelia, as understood in its broadest sense, a hæmorrhage or anything which involved Gowers's tract, was a possibility. Dr. Gordon recalled that he presented before the Neurological Society a few years ago that of a woman who had a distinct history of trauma and had distinct syringomyelic symptoms and atrophic disturbances. So far as the tabes was concerned, he thought this a question of some importance. At the last congress of French neurologists and alienists the question of traumatic paresis came up, and observations were brought up to show that the symptoms of paresis developed immediately after trauma. The general opinion, nevertheless, was that the trauma was simply an accidental cause. We knew nothing of the previous condition of the patient in regard to his knee jerks or his ocular symptoms, so it was difficult to draw even the slightest inference as to trauma as a factor in the causation of tabes.

Dr. SPILLER said he did not believe trauma had been the cause in either of the cases presented. He did not believe that trauma was ever a cause of syringomyelia, unless the trauma directly affected the spinal column and spinal cord. Many writers had tried to show that trauma of the peripheral part of a limb, such as the hand, as in the boy presented, might be the cause of syringomyelia. He thought the case of the boy very interesting from the fact that his symptoms developed after the giving of a blow. He was not injured by the blow, although immediately after receiving it his hand began to swell, and continued to swell for two years. The boy probably had syringomyelia before the trauma occurred. He presented the Brown-Séquard type of paralysis; i. e., he had disturbance of sensation in the left lower limb and of motion in his right upper and lower limbs.

Dr. A. R. ALLEN stated that the boy had given him, upon questioning, a history of excessive work for two years prior to this condition, carrying as much as a ton of coal a day in hods up to the third story of a building. Dr. Allen mentioned this point as possibly having something to do with his condition.

A Case of Adiposis Dolorosa.—Dr. G. E. PRICE presented the case of a woman, a widow, aged fifty-four. She complained of severe pain about the knees, rarely spontaneous, but induced by motion, by palpation, or

by contact of her flesh with any object. She had marked paræsthesias (numbness, burning, tingling, and crawling sensations,) variously distributed. Her flesh would bruise without adequate cause and she manifested extreme fatigue upon slight exertion. She was nervous, irritable, and anxious. Her weight was 225 pounds. Her symptoms developed a year and a half ago. There were nodular lobulated masses of adipose tissue, exquisitely painful when palpated, about the knees, the elbows, and the back of the arms. The face, hands, and feet were unaffected, and the trunk was but slightly involved. The thyroid gland was not palpable. There was no muscular atrophy about the hands, but marked deformity of both little fingers and nodular deposits about many of the joints. Large varicose veins were present upon both legs. The skin was dry and the reflexes were diminished. The eyes were negative, except for hyperæmia of the discs. A few granular casts were found in the urine, which was otherwise normal. The patient had shown distinct improvement following five and a half months' treatment with thyroid extract. Attention was called to the common history of antecedent syphilis or alcoholism in *adiposis dolorosa*.

Dr. DERCUM thought the case a typical instance of *adiposis dolorosa*. The pathology of this disease was an interesting matter. Unfortunately, it was largely speculative still, although in a number of cases at autopsy changes had been found in the thyroid gland, the pituitary body, and the suprarenal capsules. There was probably some disturbance of the internal secretions. It was not improbable that changes of the thyroid secretion led the way, and that the disturbances of the other glands were probably secondary in character. However, whatever the original cause was, patients were benefited by the use of the thyroid extract, though Dr. Dercum thought it going too far to say that they were cured. He had seen several greatly and persistently relieved.

The PRESIDENT called attention to the fact that the case of *adiposis dolorosa* reported by Dr. Dercum and himself had later revealed a very marked hypertrophy of the suprarenal capsules. He also alluded to an interesting case recently brought to post mortem at the Philadelphia General Hospital. A German with multiple adipose tumors scattered mainly over the upper extremities, although there were a few over the lower, shortly before death had areas of painful swollen fat in the legs with what appeared to be forming tumors. This was of interest because the other tumors had not been painful. It might have been that the previous tumors developed many years before as areas of painful fat.

Another matter was in connection with syphilis, where widespread changes in the lymphatic system occurred as an ætiological factor in *adiposis dolorosa*. In the case studied by Dr. Dercum and himself there were extensive hæmolymph tissues, not only scattered throughout the body, but in the adipose tumors, and he thought perhaps it represented an attempt by Nature at compensation for disturbance of lymph tissue elsewhere in the body.

A Case of Probable Tumor of the Brain of Temporo-occipital Location was presented by Dr. J. W. MCCONNELL.

Astereognosis Without Motor or Sensory Involvement.—Dr. T. H. WEISENBURG presented the patient, and said that he had been under the care of Dr. R. S. Dorsett, of Philadelphia, with whom he was seen in consultation by Dr. Weisenburg, and subsequently by Dr. Mills, after his admission into the hospital of the University of Pennsylvania.

The man was thirty-two years old, with no history either of alcoholism or of syphilis; had been perfectly well until three weeks before coming under observation.

when he awoke during the night with a pain in the left side of the back of the head and in the same side of the neck, this pain disappearing the following morning. Two days after this he began to complain of a numb, dead feeling in his left arm, followed in a day by similar sensations over the left chest and abdomen and the left leg. These sensations had persisted. About two weeks after the onset of these sensations he noticed that the grip in his left hand was not so good as before when his attention and eyes were directed elsewhere than to the object grasped. He had never had headache, nausea, vomiting, or any disturbance in his eyes.

When he was examined, his eyes and cranial nerves were found to be in a normal condition. The grip of the left hand, when his attention was called away, was not so good as when he was looking directly at his hand, in which case it was normal. The left leg, like the face and arm, showed no weakness. The reflexes were somewhat prompt, especially on the left side, but no Babinski phenomenon was present. Sensation for touch, pain, and temperature and tone sensation were normal everywhere. The senses of position and movement were lost or greatly impaired in the fingers of the left hand, the loss becoming less as the thumb and forefinger were approached. To a less extent the sense of location was disturbed, more so as the radial side of the hand was approached. The sense of pressure was normal. He could not recognize any object placed in or manipulated by his left hand, the astereognosis being absolute. The hardness or softness of an object and its surface contour could, however, be recognized, but only by the tips of his forefinger and thumb, especially the latter.

The patient was placed upon the use of daily mercurial inunctions, with increasing doses of iodides. He seemed to improve almost immediately, and in the course of six weeks all the symptoms above detailed disappeared. The numbness of which the patient had first complained disappeared first, and as the patient improved he was first able to recognize objects placed between the thumb and forefinger and later between the other fingers. At the present time, several months after the patient had been placed upon treatment, no neurological symptoms of any sort could be found.

Dr. MILLS said that, with regard to the second case presented by Dr. Weisenburg, the man had been carefully studied by him. He had taken him into the lecture room and demonstrated the facts spoken of by Dr. Weisenburg, namely, the presence of astereognosis and the absence of motor paralysis and of all sensory symptoms. He had studied the patient on several occasions, and the facts remained the same, with the exception that the astereognosis gradually receded until he now was practically normal. He thought the case important from the standpoint which Dr. Weisenburg referred to, that which he had personally held and taught, namely, that there were separate cortical centres for movements for cutaneous and muscular sensibility and for stereognostic conception.

With regard to the first case, that presented by Dr. McConnell, Dr. Mills stated that he had also lectured on this man at his clinic at the Philadelphia General Hospital, having previously studied him in the nervous wards. The man's symptoms, when first seen by him, had been much as they were now, with one possible slight exception. He believed that the patient at first had some slight retention of tactile sense. He now had loss of tactile and pain sense, not equally in the entire extremity, but with receding intensity as you passed from the distal to the proximal portion of the limbs. The reverse, as was well known, was frequently seen in hysterical cases. He had no motor paralysis. If you eliminated the awkwardness which resulted from impairment of sensation, the muscular sense and stereognosis, there was slight if any true motor weakness. The

absence of motor paralysis was interesting in connection with the fact that he had had typical Jacksonian spasms. He had lateral homonymous hemianopsia. It might be a case of tumor of the parietotemporooccipital region. It might, however, be a case of arteriosclerosis with gradual necrosis of brain tissue. He did not believe that the case could be explained as one of hysteria, though possibly the patient had some hysterical epiphenomena. Hemianopsia in Dr. Mills's experience was extremely rare, if it ever occurred in hysteria.

Dr. DERCUM asked whether the sense of position of the fingers had been tested. Astereognosis was made up of a great number of factors, not only cutaneous impressions, but also muscle sense impressions and impressions received from the joints. As Dr. Mills had said, there might be entire loss of the tactile sense and, notwithstanding, preservation of the astereognostic sense.

Dr. C. W. BURR thought it very difficult to determine in Dr. McConnell's case whether the inability to distinguish objects by handling them was due to astereognosis or to anæsthesia. Though a man might be able to recognize objects in the presence of slight tactile anæsthesia, yet, if there was complete anæsthesia to touch and deep pressure, he would be unable to tell what he had in his hand. Dr. Burr also thought that a distinction should be made between the inability to recognize objects because of the loss of sensibility, whether it was of space sense, the sense of the position of the hand itself, or any other sensory disturbance, and inability on account of loss of memory of tactile sensations. This last condition, tactile amnesia, was comparable to word deafness and mind blindness.

Dr. MILLS thought, with regard to the relations between stereognostic conception, sensation, and movement, that the first was an independent function, although there was a sensory pseudoastereognosis, also a motor pseudoastereognosis. It was possible for a patient to have entire loss of cutaneous sensibility (for touch, pain, and temperature) and yet retain stereognostic power; in other words, to retain the ability to recognize objects by manipulation. This had been demonstrated by himself and others in a well known case at the Philadelphia General Hospital.

Dr. McCONNELL said that he had brought his patient before the society more particularly for diagnosis. Upon the question as to whether or not the case was originally thrombotic or arteriosclerotic, these were matters on which he wanted the opinion of the society. The man had an attack seven years ago, and he stated that he had loss of power following that attack. Whether what he took for loss of power was ataxia or peculiar sensory disturbances, which he now had, was the question which had come to Dr. McConnell's mind. The fact that he had improved must be given due weight. He said he had been under treatment for a long time previous to coming into the hospital. Perhaps the treatment was the same as he was now obtaining. Since his last Jacksonian attack he had distinctly improved. He was still taking mercury and iodides.

Dr. WEISENBURG thought all agreed that a man might have astereognosis without sensory or motor involvement. In regard to Dr. Dercum's query as to sense of position, the patient had presented involvement of the sense of position, but less of the sense of localization. The question arose as to whether one could have a case of pure astereognosis without involvement of the senses of position, pressure, movement, and localization. The fact that in this case there was involvement of all these senses seemed to show that in astereognosis there was involvement of the senses of position, movement, pressure, and localization.

(To be concluded.)

Book Notices.

A Treatise on Orthopædic Surgery. By ROYAL WHITMAN, M. D., Clinical Lecturer and Instructor in Orthopædic Surgery in the College of Physicians and Surgeons of Columbia University, New York, etc. Third Edition, Revised and Enlarged. Illustrated with Five Hundred and Fifty-four Engravings. Philadelphia: Lea Brothers & Co., 1907. Pp. xii, 17-871.

This well known treatise reappears with a large increase in the number of its pages and many more (107) new illustrations. It gives a complete survey of the subject of which it treats, the object of the writer evidently having been to present in a practical shape the points of interest and importance which call for attention in the diagnosis and treatment of orthopædic affections. It is adapted to the wants of the general practitioner and the specialist.

Hygiene. By J. LANE NOTTER, M. A., M. D., Examiner in Public Health to the Universities of Cambridge, Manchester, and Liverpool, etc., and R. H. FIRTH, Lieutenant Colonel in the Royal Army Medical Corps, Professor of Hygiene in the Royal Army Medical College, etc. Sixth Edition. London: Longmans, Green, & Co., 1905.

When a book has reached its sixth edition its usefulness has been definitively proved. It would indeed be hard to find a better elementary work on hygiene or one which contains so much for the student in a small compass as this excellent manual. Whatever criticism is suggested is due chiefly to the English standpoint from which the subject matter is considered. In their own country, fortunately, the authors are not obliged to take up some modern problems which are peculiarly American. Thus, in the chapter on food there is no mention of the deleterious effects of prolonged cold storage and refrigeration. In the sections dealing with pathology there are a few doubtful statements. Some sanction is apparently given to the idea of a *de novo* origin of certain epidemics of typhoid fever, and an importance is assigned to heredity as an element in the ætiology of tuberculous disease which is not warranted by the best recent opinion. The unqualified declaration that "to many the cares and worries of business and existence are such that to them, after the labors of the day, a moderate amount of alcohol in some form or other is not only an advantage, but almost a necessity," will meet with much disapprobation in this country. Especially noteworthy are the chapters on plumbing, disposal of sewage, sanitary building construction, including schools and hospitals, and vital statistics. The last chapter contains an excellent digest of the sanitary law of Great Britain.

How to Suppress a Malpractice Suit, and Other Medical Miscellanies. By THOMAS HALL SHASTID, A. M., M. D., LL. B. Marion, Ill.: Marion Publishing Company, 1906. Pp. 128.

Dr. Shastid has had the rather unusual advantage of an education in both law and medicine, and in this modest little volume has endeavored to assist his fellow practitioners by sound advice as to malpractice suits, which are usually brought in bad faith and in collusion with an unscrupulous doctor. After all has been said, probably the best protection against malpractice suits is that afforded by insurance. Few such suits would be brought if it were known that the cost of defending them was assumed by a large and influential society of the accused physician's colleagues. Interspersed with the author's serious medicolegal studies, there are several excursions into the realm of fancy which reveal his versatile literary taste, and depict with

fidelity various familiar scenes of pathos and humor occurring in rural and village practice.

Traité des maladies du nez. Par le docteur A. MÈNIER, ex-interne des hôpitaux de Paris, ancien chef adjt. de clinique chirurgicale à l'Hôtel Dieu, etc. Introduction de M. le professeur S. Duplay. Préface de M. le docteur A. Castex. Avec 178 Figures. Paris: A. Maloine, 1906. Pp. xv-661.

This volume is divided into three parts, the first devoted to an exposition of the different methods of exploration of the nasal fossæ. The second has for its object the general therapeutics of nasal diseases, with the technique of methods of application and the use of electrolysis and the galvanocautery. The third part treats of the symptoms and special therapeutics of diseases of the nose and nasal fossæ.

Modern methods are described in detail, and the treatment recommended seems excellent. The chapters on syphilis and tuberculous disease of the nose are praiseworthy, as is the section on neoplasms of the nasal fossæ. There are several chapters on disorders of olfaction, and these include a description of the interesting researches of Toulouse and Vasside. The book is well illustrated and affords a comprehensive survey of the actual state of our knowledge of diseases of the nose.

BOOKS, PAMPHLETS, ETC., RECEIVED

Plaster of Paris and How to Use It. By Martin W. Ware, M. D., Adjunct Attending Surgeon to Mount Sinai Hospital, etc. New York: Surgery Publishing Company, 1906.

Paraffin in Surgery. A Critical and Clinical Study. By William H. Luckett, B. S., M. D., Attending Surgeon, Harlem Hospital, and Dr. Frank I. Horn, Assistant Surgeon, Mount Sinai Hospital Dispensary. With Thirty-eight Illustrations. New York: Surgery Publishing Company, 1907.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending February 22, 1907:

Smallpox—United States			
Places.	Date.	Cases.	Deaths.
Florida—Lakeland	Jan. 26-Feb. 2	6	
Florida—Lakeland	Feb. 9-16	3	
Georgia—Augusta	Feb. 5-12	3	
Illinois—Chicago	Feb. 9-16	1	
Indiana—Indianapolis	Feb. 3-10	1	
Maryland—Baltimore	Feb. 9-16	1	
Minnesota—General	Dec. 1-Jan. 28	277	1
Missouri—St. Louis	Feb. 9-16	1	
Montana—Helena	Jan. 1-31	1	
North Carolina—Charlotte	Feb. 9-16	1	
Utah—Ogden	Jan. 1-31	3	
Washington—Spokane	Feb. 2-9	13	
Ohio—Cincinnati	Feb. 8-15	2	
Smallpox—Foreign			
Argentina—Buenos Aires	Dec. 29-Jan. 5	1	
Brazil—Bahia	Dec. 29-Jan. 12	6	
Canada—Toronto	Jan. 9-26	2	
China—Shanghai	Jan. 6-13	1	
France—Paris	Jan. 19-26	19	
Great Britain—Cardiff	Jan. 19-Feb. 2	2	1
Great Britain—Hull	Jan. 19-26	1	
Great Britain—Liverpool	Jan. 19-Feb. 2	2	
Great Britain—Southampton	Jan. 26-Feb. 2	1	
India—Calcutta	Dec. 29-Jan. 5	12	
India—Rangoon	Dec. 29-Jan. 5		Epidemic.
Mexico—Vera Cruz	Jan. 26-Feb. 2	1	1
Netherlands—Rotterdam	Jan. 26-Feb. 2	5	1
Russia—Moscow	Jan. 5-26	11	8
Russia—Odessa	Jan. 12-19	1	7
Turkey—Constantinople	Jan. 20-27	1	1
Yellow Fever—Foreign			
Mexico—Tuxpam	Jan. 22-29	1	1

Cholera—Insular.			
Philippine Islands	Deaths	Dec. 15-22	19
Philippine Islands	Deaths	Dec. 22-29	20
Philippine Islands	Deaths	Dec. 29-Jan. 5	21
Cholera—Foreign.			
India—Bombay	Deaths	Dec. 8-15	3
India—Calcutta	Deaths	Dec. 29-Jan. 5	76
India—Cochin	Deaths	Dec. 28	1
India—Rangoon	Deaths	Dec. 29-Jan. 5	18
Typhoid—Foreign.			
India—Bombay	Deaths	Dec. 25-29	1
India—Calcutta	Deaths	Dec. 24-29	1
India—Rangoon	Deaths	Dec. 29-Jan. 5	10,363
India—Bombay	Deaths	Jan. 8-15	33
India—Calcutta	Deaths	Dec. 29-Jan. 5	18
India—Rangoon	Deaths	Dec. 29-Jan. 5	18
India—Cochin	Deaths	Jan. 1-19	9
Malaya	Deaths	Dec. 13-Jan. 3	65
Siam—Bangkok	Deaths	Nov. 21	1

Public Health and Marine Hospital Service:

Official List of Changes in the Stations and Duties of Commissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending February 23, 1907:

BANKS, C. E., Surgeon. Granted leave of absence for fourteen days, from February 21st.

CORPUS, G. M., Passed Assistant Surgeon. Directed to proceed to Austin, Texas, for special temporary duty, upon completion of which to rejoin station at Galveston, Texas.

GRIBBLE, B. G., Acting Assistant Surgeon. Granted leave of absence for five days, from February 14, 1907, under Paragraph 210 of the Regulations.

LUMSDEN, L. L., Passed Assistant Surgeon. Granted leave of absence for a period of thirty days, from February 18th, on account of sickness.

ROBERTS, N., Assistant Surgeon. Granted leave of absence for seven days, from February 11th, under Paragraph 191 of the Regulations.

SCHWARTZ, J., Acting Assistant Surgeon. Granted leave of absence for five days, from February 16th, under Paragraph 210 of the Regulations.

WHITE, J. H., Surgeon. Directed to proceed to Baton Rouge, La., for special temporary duty, upon completion of which to rejoin station at New Orleans, La.

WILLIAMS, L. L., Surgeon. Directed to report at the Bureau for special duty, upon completion of which to rejoin station in Baltimore.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending February 23, 1907:

BRADLEY, ALFRED E., Major and Surgeon. Upon completion of duty at Fort Slocum, N. Y., ordered to proceed to Fort Sheridan, Ill., for the purpose of packing and shipping public property, and then to proceed to Jefferson Barracks, Mo., for station.

HAVARD, VALERY, Colonel and Assistant Surgeon General. Detailed to represent the Medical Department of the United States Army at the convention of the Interstate National Guard Association, to be held at Columbia, S. C., March 25, 1907.

JONES, PERCY L., Captain and Assistant Surgeon. Granted two months' leave of absence.

MORSE, CHARLES F., First Lieutenant and Assistant Surgeon. In addition to present duties at Fort Howard, Md., will attend Fort McHenry, Md., during the temporary absence of Captain Kent Nelson, assistant surgeon.

STEPHENSON, WILLIAM, Major and Surgeon. Upon being relieved from duty at the Presidio, San Francisco, Cal., and upon arrival of 25th Infantry at San Francisco, Cal., will report to the commanding officer for duty to accompany that command to the Philippine Islands; upon arrival at Manila, will report to the commanding general, Philippines Division, for assignment to duty.

USHER, F. M. G., Captain and Assistant Surgeon. Appointed a member of the examining board to meet at St. Paul, Minn., for the examination of officers of the Quartermaster's Department for promotion.

WEBB, WALTER D., Captain and Assistant Surgeon. Appointed a member of the examining board to meet at

St. Paul, Minn., for the examination of officers of the Quartermaster's Department for promotion.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending February 23, 1907:

BACON, S., Acting Assistant Surgeon. Ordered to duty at the Naval Hospital, Norfolk, Va.

FURLONG, F. M., Surgeon. Detached from the Boston Hospital; ordered to duty in connection with fitting out the *Vermont* and to duty aboard that vessel when it is commissioned.

GRIEVE, C. C., Passed Assistant Surgeon. Commissioned a passed assistant surgeon, from June 2, 1906.

MCLEAN, N. T., Assistant Surgeon. Discharged from treatment at Boston Hospital and ordered to duty at the Navy Yard, Boston, Mass.

MOORE, J. M., Surgeon. Ordered to Norfolk Hospital.

RYDER, C. E., Passed Assistant Surgeon. Commissioned a passed assistant surgeon, from June 26, 1906.

Births, Marriages, and Deaths.

Born.

MUNDORFF.—In New York, on Monday, February 18th, to Dr. George Theodore Mundorff and Mrs. Mundorff, a daughter.

Married.

HEWSON—CHENEY.—In Wellesley, Massachusetts, on Tuesday, February 12th, Dr. William Joseph Hewson, of Baltimore, and Miss Alice P. Cheney.

HUGHES—SMITH.—In Washington, D. C., on Saturday, February 16th, Dr. Thomas J. Hughes and Miss Mary Smith.

HYMAN—DANIELS.—In Philadelphia, on Wednesday, February 20th, Dr. D. D. Hyman and Miss Edna S. Daniels.

WHEELER—DENBY.—In Washington, D. C., on Thursday, February 21st, Dr. William Mackall Wheeler, U. S. Navy, and Miss Laura Forbes Denby.

Died.

ALLEY.—In Atlanta, Georgia, on Thursday, February 21st, Dr. A. R. Alley, aged sixty-three years.

BARKER.—In Woodbridge, Connecticut, on Saturday, February 16th, Dr. John Barker, aged seventy-two years.

BENSON.—In Baltimore, on Sunday, February 10th, Dr. Charles Wesley Benson, aged sixty-nine years.

BIDAMAN.—In Buffalo, N. Y., on Friday, February 15th, Dr. Weston D. Bidaman, aged fifty-five years.

BLISS.—In San Antonio, Texas, on Wednesday, February 20th, Dr. L. W. Bliss, aged seventy-one years.

BOLTE.—In Baltimore, on Saturday, February 16th, Dr. John E. Bolte, aged forty-one years.

BURWELL.—In Salem, Virginia, on Friday, February 15th, Dr. Curtis Burwell, aged twenty-eight years.

COLES.—In Essex, Connecticut, on Tuesday, February 12th, Dr. Frederick Stanley Cowles, aged thirty-seven years.

ECKLES.—In Shippensburg, Pennsylvania, on Thursday, February 14th, Dr. G. M. D. Eckles, aged sixty-two years.

GUNNELL.—In Bush Hill, Virginia, on Sunday, February 10th, Dr. James Samuel Gunnell, aged seventy-seven years.

IVES.—In New Mexico, on Saturday, February 16th, Dr. Sherwood B. Ives, of New York, aged thirty-seven years.

NICHOLS.—In Stamford, Connecticut, on Sunday, February 17th, Dr. George Herbery Nichols, of Williamsburg, N. Y., aged forty-three years.

O'SHEA.—In Paterson, N. J., on Wednesday, February 20th, Dr. Joseph O'Shea, aged thirty-three years.

TALLEY.—In Philadelphia, on Sunday, February 17th, Dr. F. W. Talley, aged forty-one years.

THOMAS.—In Los Angeles, California, on Wednesday, February 20th, Dr. J. Clark Thomas, of New York, aged sixty-two years.

WORKMAN.—In Keyser, West Virginia, on Monday, February 11th, Dr. Rosencrans G. Workman, aged thirty-five years.

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Original Communications.

ACADEMIES OF MEDICINE.*

By CHARLES L. DANA, M. D., LL. D.,
New York.

The feelings which centre about the simple and undramatic ending of an official career are not of a kind to interest very much an audience or inspire an affecting address. "The king is dead, long live the king." This is the formula which experience has developed and custom adopted as expressing the usual sentiment felt on occasions of a retirement.

I have enjoyed in full measure the honor that was conferred upon me by my election, and have done the best I could do to deserve it. It is impossible for me to leave a post like this and drop back into the ranks without some real regret. This fact forms the most genuine appreciation of the distinction conferred on me which I can offer you, for there are a good many things in the quiet of private life to offset the pomp of the presidential chair.

The custom of having a retiring address is not a widely prevalent one, but it is not an unwise one if the president retires without too much forensic effort, and uses the opportunity chiefly to tell you what his experience as an executive officer has suggested for guidance and inspiration.

Bearing upon the latter, I must say that the dominant feeling created in me by my two years' association with this body is one of enthusiastic conviction that this academy does extraordinarily important work for the profession and community, and has the capacity to do much more.

The work and the functions of this body have gradually grown and expanded until few can realize, as I think I do, how far reaching and effective our organization has been made. Its library keeps us informed of the scientific progress of the world, its meetings afford opportunity to bring the profession into harmonious working bodies, before which the yearly work of the clinician, the pathologist, the educator, the hygienist can be brought. The personal contact at our meetings teaches us to measure and understand each other, so that we work together in amity; we have no politics and no quarrels. The management of so complex a body, with its thirteen constituent societies, its building, its books, involves no small amount of anxiety and responsibility.

But there has been, as I have found, such loyalty,

* Address of the retiring president, read at the annual meeting of the New York Academy of Medicine, January 5, 1907.

and pride, and interest, that the pleasure of working with such willing cooperation has abundantly offset the labor. Indeed, I confess after these years of rather strenuous attempt to bring out all that is possible in this academy, there has come to me a real affection for what is technically only a soulless corporation. I think one must learn to love it as he does the college he is bred in, or any other material agency which has responded readily and unselfishly to his efforts. There is, I have found, here no undercurrent of small ambitions or petty strifes. We are all human, to be sure, and sparks of contention occasionally break out from the friction of contending but equally sincere views. They are soon extinguished.

So this is my feeling as I leave the presidency: That the New York Academy of Medicine is an organization wisely planned, and unselfishly and effectively organized to bring out what is best in scientific and practical medicine in this community, and I cannot finish my task without expressing my awakened enthusiasm in the New York Academy of Medicine, knowing so well the work it does for our professional progress and the betterment of the entire community.

I have found myself turned in a way into a missionary of the academy idea. I believe all communities large enough to form a nucleus of physicians will be much better for getting together and organizing, not necessarily a formal academy, but a medical body having the basic academy principles. These are: To have a place of meeting of their own, to have a small or large library, to have scientific and social meetings, and to have no politics and no creeds, except those which guide all upright men. In the cities and towns which I have visited of late, I have always inquired into the status of the physicians, and I find that if there is an academy or its equivalent, there is peace and pleasantness—relatively, at least, among the doctors. If there is not, well, Dr. Smith and Dr. Jones are found speaking ill of each other, as compared with saying kind things in a percentage that is almost immoral.

I do not mean to belittle the regular and necessary State and county organizations. These are, perhaps, fundamentally even more important. We must have them almost as we must have diplomas and licenses and a legal status. But medical organization should not stop there. For this supplies chiefly the material and industrial needs. The doctor is a very human being; more human than any other kind of animal. He needs to have his social instincts properly satisfied. He is very sensitive; he is easily hurt, and has alas! too many chances

of hurting, and being hurt by, his fellows. But on the whole, doctors are a very amenable and amiable class. Get them together in the right way, they do not quarrel, but form easily warm friendships and loyal attachments even to their rivals. It is the academy or its equivalent that humanizes and elevates the medical profession more than books, or papers, or preaching. And it is as a kind of object lesson of this kind which the New York Academy of Medicine stands for and thereby fulfills one of its highest functions.

It cannot be denied that there is power in a name. Twenty-four hundred years ago Cimon gave a public park to Athens. It lay about a mile north of the city, and it was called the Academy, because it once belonged to an old Greek hero of that name, whose deeds are now totally forgotten. Plato taught there for fifty years, and he made it the first Academy and gave the name to the world. It has since been used to indicate an institution where knowledge and learning are prized and even speculative thought encouraged. It set itself off from the practical, the godless, common sense of the School of Epicurus and from the stern idealism of the Stoics; Socrates, Julius Cæsar, and Cato stand out as the olden types of these three schools.

But we, in these later years, have applied the magic methods of the new world to the ancient systems of the old, and have Americanized the term *Academy*. The name for us now indicates not only a learned body, and one that prizes knowledge and seeks to keep the record of its progress; it stands also for something of the idealism of the Stoics and the practical unimaginative sense of the Epicureans. Remembering that Greece fell while Plato talked, we are seeking in our modern academies to do things which shall benefit and elevate mankind, as well as inform it. And we also try to cultivate the social side of human life and promote the material interests of the Fellows, and provide for their corporeal enjoyment by collations which, if they may not be all that a Lucullus would provide, are all that our Jacobus will allow.

Thus the modern academy while extolling and encouraging learning, takes also account of the good and the useful, and the presidential chair should be occupied, as it will be, by one who has in his soul something of the philosophical spirit represented by Plato, Cæsar, and Cato Junior blended in a happy physiological anastomosis. But the modern academy has some serious problems to meet, along with its enlarged activities. The change in the conditions which affect medical societies and their work is a matter that must seriously interest those who are responsible for the success of these organizations. The great number of societies, the demand made upon the doctor's time by these and his own affairs as citizen of a busy town, make it necessary that a medical meeting shall mean something to him or he will not come to it.

This fact has to be met by a careful organization and preparation of meetings. On this account the Council of the Academy has appointed to help the president, a Programme Committee, and it has been urged that each section do the same, these committees meeting twice a year at least, and formulating the lines of work and subjects likely to be most interesting and important.

Another fact has to be considered also in the conduct and work of medical societies, and that is, that to a very large extent, clinical or descriptive medicine—and I might add, gross pathology—is a finished story.

We cannot expect to know much more about the ordinary and observable phenomena of the prevalent diseases and injuries. The clinical phenomena of typhoid fever, of acute rheumatism, of Bright's disease, of pneumonia, of phthisis are things that belong to systematized medicine. The story must often be retold for newcomers, it will have its variants with the constitution of the patient and the intensity of the infection, it may change with the changes of social life and economic conditions. But for the most part what is new in clinical medicine will now have to come from the laboratories of the chemist, the physiologist, or the bacteriologist. There is left to the pure clinician only certain minor points of symptomatology, rare variations, and unusual diseases. The modern clinician must work with the laboratory at his elbow in order to make progress in his knowledge of disease. He has also the field of prevention and of therapeutics.

I would make one exception to this doctrine of clinical nihilism, for I should not wish to be quoted as asserting that clinical medicine and clinical surgery are "played out" as sources for original observation. There is the extremely important subjective side of the patient's illness. We have yet got to learn to interpret accurately what the patient says he feels. It is easy enough to recognize a crepitant râle or a cardiac dilatation. But not so easy to explain what is the matter when a patient says he has a persistent pain in the back, or a continual pressure on the top of the head, or nervous indigestion, and a fear producing vertigo.

There is nothing so haphazard as the diagnoses that are usually made on subjective complaints only. Some, indeed many physicians, assume it as a rule that if nothing can be seen or heard or felt or smelled or precipitated in a test tube, the patient really has nothing the matter with him, whereas when a man or woman complains of suffering, exactly the contrary is true. They always do suffer; only in some cases it is a mental state and sometimes a physical one, and sometimes both. The exact interpretation of subjective complaints furnishes a wide and perhaps the only wide field left, calling for original, careful, and acute clinical investigation. I think the most illuminating descriptions on diseases that have ever been written are those written by doctors themselves who thus got both sides of the picture.

The annual reports have shown the prosperous condition of the academy at the present time.

Our limit of membership has been increased, yet it is nearly reached, and we will soon have a waiting list.

Three new sections have been organized, and have already begun work.

It costs nearly \$30,000 a year to run the academy, yet its income pays its current expenses, and has allowed us to put money this year in our sinking fund and over \$5,000 in our library fund.

The attendance and interest in the sections and in the general meetings were never greater.

There has been established a course of public lec-

tures which, it is believed, will furnish an opportunity for the doctor to tell his views to the public concerning matters that interest both. The sanitary and educational problems of the day are to be dealt with here as well as in the new Section on Public Health.

Fresh interest has been shown in the museum and historical department of the library and already important and valuable contributions have been made to it.

It is particularly gratifying to me that one especial function of the general academy meetings has been carried out. In my inaugural address I expressed the hope that the academy should be the place in which all important observations and original researches in clinical and experimental medicine or in pathology should be presented. That the academy should not be the forum for learned and lengthy addresses, or elaborate monographic reports, but should be the place where the results of medical and surgical work be first and informally presented. The records of the last two years show that certainly a great part of what was valuable on these lines has been thus presented to you. And it has been gratifying to find that our largest and most interested audiences have been present at these times. There is a certain Renaissance of interest in scientific medicine in New York, as shown not only by this fact, but by the large attendance at the lectures of the Harvey Society, conducted under the auspices of the academy. It is on the same lines and with the same purpose of encouraging interest in scientific and public questions, that four lectures will be delivered this spring, under the auspices of the Psychiatric Society of New York, the questions of heredity and their causes and the prevention of the psychoses being taken up.

We need the sum of \$200,000 with which to enlarge the academy and furnish room for our growing library. We need \$200,000 as an endowment fund with which to publish a monthly bulletin of the work done.

The problem of raising these modest sums I leave to the energy and resourcefulness of my distinguished successor. I am sure that the same loyalty and helpfulness will be shown him that were shown me. And it is my hope that he will find his work, thus lightened, will bring to him as much satisfaction as it has to me, a satisfaction that in his case, I trust, will not have to be modified by the mistakes of inexperience which have been for me perhaps too generously condoned.

I retire with the conviction that our academy is the most important and distinguished medical organization in the country. It is for us now to continue and keep it so.

55 WEST FERRY, THIRD STREET.

THE PHYSICAL PROCESSES OF IMMUNITY AND INFECTION.

II.

By JONATHAN WRIGHT, M. D.,
New York

The Ports of Entry and the Channels of Infection.

We are all more or less familiar with the long discussion which has been going on as to the port of entry and the route of the bacillus in the tuber-

culous infections of man. What has been adduced in the way of fact and argument as to the penetration of this microbe of disease into the human organism may be applied with varying degrees of pertinence to other infections. Without denying the importance of a just consideration of the gastrointestinal tract as a route of infection in tuberculous disease of the lungs, indeed admitting that at least this is the occasional path of the microbe from the surface, such admission detracts nothing from the interest which attaches to what I believe is its usual entrance—by the way of the pharynx. From what has preceded¹ it may be perceived that I am not at all disposed to extend the same measure of belief to the theory of any lung infection which involves the entrance through the bronchioles and alveoli of the pulmonary structure under ordinary conditions, unless we are to assume that there is, as I have suggested, at times an abeyance in the efficiency of the action of cilia which line the trachea and bronchi. The height of the residual air does much to strengthen one against the idea that infection really floats in the atmosphere of the lungs.

I have insisted that because experimental evidence has been adduced to prove that, if an atmosphere laden with dust or bacteria is inhaled by animals in cages some of it may be found in the ultimate bronchi, this is no reason for supposing that the ordinarily inspired air carries its bacterial contents thither. In such work negative results can be more rationally used in the study of the real problem than positive testimony; because if the filtering process is effective for a million bacteria to the c.c., it is reasonable to suppose it still more effective for a thousand. Evidently this is a proposition which cannot be inverted. The amount of literature on this subject is appalling, and no attempt at reference in the way of completeness is permissible or desirable here. Some recent work² for instance, shows that prodigious cultures inhaled in fluid sprays by animals were, for the most part, deposited in the upper air passages, but some were found in the ultimate bronchi. On the other hand Calmette³ declares: "We have convinced ourselves, with Van Steenberge and Grysez, that one does not succeed in producing pulmonary anthracosis by causing the animals to breathe in an air saturated with the soot, if one prevents them swallowing that which accumulates in the nasal fossæ and in the nasopharynx. The characteristic lesions of anthracosis appear, on the contrary, very rapidly when one injects the soot by the œsophageal sound or mixes it with the food." The accuracy of this conclusion has been strongly impeached in a very recent communication by Beitzke.⁴ Again Calmette refers⁵ to other work to support his own results both with dust and bacilli, declaring that Nocard and Rossignol attempted in vain to cause the formation of tuberculous pulmonary lesions by the inoculation of virulent bacilli directly into the trachea. "They claimed that it not only does not come in contact with the pulmonary alveoli, but that it does not pass the fine bronchi and is cast out in the bronchial mucosities."

Whether all the dust and bacteria in the usual

¹ *Edin. New York Med. Jour.*, 1907, p. 280.

² *Wiener klinische Wochenschrift*, 1905, contains a number of articles on the subject.

³ *Revue scientifique*, vi, No. 9, p. 259, September, 1906.

⁴ *Vierteljahrsschr.*, LXXV, 1, 1906.

⁵ *Annales de l'Institut Pasteur*, August 25, 1906.

atmosphere which surrounds a human being is filtered out in the upper air passages, or whether all but a small fraction suffer that fate is not essential to the admission of the belief that in some way those deposited by the air in the upper air passages may reach the lungs. Here we part company with Calmette. We may go also part of the way with Ribbert,⁶ who believes that anthracotic nodules in the lungs are usually indicative of tuberculous lesions past or present. He is a believer in the aerogenous doctrine of pulmonary infection, but he believes it is borne in the air to the pharyngeal mucosa only, whence it disappears beneath the surface and traversing the bronchial glands thus reaches the lungs. His idea is that the bacilli are carried beneath the surface on dust particles, and that they reach a common destination in the lungs. Now, from demonstrations I have made of carmin granules passing through a surface layer of bacteria on the tonsils and then passing the epithelial line without carrying any of the denizens of the tonsillar crypts in with them, it is extremely probable that this companionship as conceived by Ribbert terminates at least at the surface of the mucosa. Even without this demonstration it is reasonable to suppose that when a bacillus, riding on a dust particle, strikes the damp surface of the tonsillar mucosa its viscosity, or its hygroscopic properties would unseat it as the dust granule passes in, but I hope to prove that in all likelihood there is more than that, that there is a selective action depending upon a reciprocal electrodynamic polarity which causes the epithelial cell to distinguish between the inert insoluble dust and the living bacterial protoplasm.

In order to render the account of the discussion, though it is a little aside from my own interest, less incomplete, it is necessary to refer to some very important anatomical observations, which, if accurate, weigh heavily against the idea of the lymph route as the exclusive path of infection from the pharynx. The question is most exhaustively and recently considered from this standpoint by Beitzke⁷ though others have published the same anatomical statements. After remarking that "the most favorable spot for the penetration of tubercle bacilli is in the nasopharynx with its physiological apertures in the covering epithelium, as first described by Stöhr," Beitzke says that the deep upper lymphatics, when injected are seen to terminate at the lower border of the thyroid, the lymph current then entering into the truncus lymphaticus and then directly into the vena cava superior. The bronchial and pulmonary lymphatics, coming up from below, when injected are seen also to terminate at the same place, *i. e.*, the lower border of the thyroid. Even when the common lymph trunk is tied the injected material does not in either case pass this boundary. These observations were made, post mortem, on new born children. If we are to believe that the living protoplasm of bacteria follow in life these paths only, if the enormous amount of foreign matter injected into a dead body with abnormal pressure correctly represents what goes on intra vitam with the few grains of dust or bacteria passing into the tonsil-

lar tissue, it is not difficult to bring our knowledge of clinical facts into line with the view Beitzke holds, if we are to be influenced by negative testimony. This strengthens the view of the intestinal origin of phthisis rather than proves that infection goes down the lower air ways. Germs poured into the vena cava, thence through the heart into the lungs might originate from the surfaces of the intestine as well as of the pharynx. In either case we must utterly reject the doctrine of Baumgarten that the tubercle bacillus usually sets up its lesion at its port of entry. As for the tonsil this is surely not so. As for the intestine, as I read the testimony of the literature, it is just as surely not so. Primary pharyngeal tuberculosis and primary intestinal tuberculosis are of such extreme rarity that they are totally inadequate to represent a lesion from which a secondary pulmonary involvement ensues as the ordinary course of events. Baumgarten after the lapse of many years, still holds to his original doctrine.⁸ It is difficult, of course, to deny the possibility that the initial lesion of tuberculosis escapes detection in a considerable number of cases, because it is manifestly impossible to lay the pharyngeal or intestinal tube into sections of a few micra thick, and examine them so thoroughly as to disprove the assertion. But one may well ask, if the tubercle bacillus promptly causes coagulation necrosis and giant cells, as soon as it passes the epithelial hedge, why there is not a continuous chain of tubercle from the port of entry to the efflorescence of the disease in the lungs.

There is indeed no way of escaping the conclusions, to which all the facts point, that there are sharp local differentiations of the tissues in their predisposition to certain forms of microbial disease. A harmless symbiosis not infrequently exists between the fixed and wandering cells of man and even pathogenic microorganisms. Such a local differentiation and such a, at least temporary, symbiosis between the tubercle bacillus and the body cells we must believe exists in the process of infection with the tubercle bacillus unless we accept the accuracy of Baumgarten's statements,⁹ while the revelations of Naegeli as to the universality of tuberculous lesions can only be interpreted in the same light—that is—of a symbiotic equilibrium. It is plain that we must accept this view of symbiosis or that of Baumgarten. We must find the lesion at the point of entry, or agree at least to a limited symbiosis.

Manifestly it has been necessary in the course of evolution to keep out only that number of bacteria which the forces of the host within could not nullify or hold in a state of equilibrium. The possibility of the formation of the equilibrium varies with different individuals and at different times. Thus we can understand how Trousseau long before the discovery of

⁶ *Experimente über hämatogenen Lymphdrüsentuberculose. Berliner klinische Wochenschrift, October 8, 1906, No. 41. Ueber das Verhalten der Tuberkelbacillen an der Eingangspforte der Infektion. Verhandlungen der deutschen pathologischen Gesellschaft, 1905, p. 5. "Bacilli penetrate into the mucosa of the digestive tract almost exclusively at the place where the lymph follicles lie. The predilection for these places is apparently due to the passage of the lymphocytes through the epithelium, a fact discovered by Stöhr; being full of holes, it is thus permeable for fine corpuscular elements, like the tubercle bacillus, while the mucosa not thus provided with lymph follicles, if the epithelium is intact, and if it is not attacked and destroyed by bacteria is impermeable to them."*

⁷ *I have more fully developed this aspect of the subject in my articles in the St. Louis Medical Review. See issue of August 18, 1906.*

⁸ *Deutsche medizinische Wochenschrift, No. 10, October 1, 1906.*
⁹ *Ueber das Verhalten der Tuberkelbacillen an der Eingangspforte der Infektion. Verhandlungen der deutschen pathologischen Gesellschaft, 1905, p. 5.*

the diphtheria bacillus refused to believe in the contagion of the diphtheria membrane because he and his pupils rubbed it on their tonsils with impunity. Thus we can comprehend how Pettenkofer refused to accept the cholera vibrio as the sole factor in cholera disease and showed the courage of his convictions by swallowing some of the cultures. Suffice it to say that virulent bacilli (that is virulent to others and virulent to animals) of each disease have been found respectively in the fauces and the bowels of healthy people and for prolonged periods. These facts are again being brought into prominence in current medical literature.¹⁰ I have previously quoted from the work of Dudgeon and Ross¹¹ who showed the existence of the *Staphylococcus pyogenes albus* in the omentum of guinea pigs and I have referred to the extensive literature of the subject to be found in an article by Wrzosek in Virchow's *Archiv*, clxxviii, p. 83, 1904.

It is quite probable that the internal part of the compromise or symbiosis is arranged in the lymph glands to a large extent. "Lately published researches of Perez have proved that in the normal lymph ganglia there is present a latent microbic parasitism."¹² From this it follows that many cervical gland inflammations are due primarily to a change of tissue cells and fluids which allows these latent germs to proliferate and form abscesses or bring about other systemic infections. The authors from whom I have just quoted observe, as have I, that in true abscess of the tonsillar lymphoid material, the children are apt to be in a low state of health. But this is not always so. I have lately had a patient in vigorous health, though subject to frequent attacks, not of quincy, but of a septic condition of the pharynx, more frequent in the winter. Several months after such an attack and while the pharynx was in a quiescent state, the scattered lymphoid masses, small in amount and not localized in the usual seat of the faucial tonsils, were removed and numerous microscopical foci of cocci were found throughout them, a marked contrast to the many hundreds of sections which I have laboriously examined in the search for even isolated germs in the usual material obtained. Out of this large amount of material, including several hundred cases, and in an experience extending over ten years of observation in this direction I have seen just two other cases, these in poorly nourished children, in which subepithelial microbic life was numerous enough to be demonstrated by the faulty technique at the disposal of the histologist for finding cocci in small round celled tissue, but I have no doubt of their existence in many cases in such small numbers as to defy detection by staining.

This difficulty in the technique I have tried in vain to overcome. Very many sections fail to show any surface bacterial growth, while cultures always reveal them. Within the tissues, it is only the occasional positive results to which I have alluded which have convinced me that bacteria do pass in certain cases in a state of health, or form a condition of symbiosis with the lymphoid cells having passed at some previous time.

I am still endeavoring to discover a technique by which in a lymphoid tissue, rich as it is in chromatin granules, bacteria may more frequently be demonstrated. While in sections they may with care be frequently demonstrated on the surface by carmin staining I am not disposed to believe they are so universally absent beneath the epithelium as thus far appears from my observations, because, as I have repeatedly said, the evolution of immunity has only required the keeping out of the subepithelial tissue such a mass of germs as the internal bacteriolysins or other antibodies cannot habitually cope with. Some must pass frequently.

There are a number of observations to support the belief that the passage of pathogenic germs through lymph nodes is retarded, causing them to linger there. During their sojourn they tend to lose much of their virulence, so that when they do pass on (if they do not perish) their activities elsewhere are much less dangerous than when thrown directly into the tissue in unwonted numbers and in unwonted localities by a syringe. The place of formation of bacteriolytic antibodies acting on the cholera vibrio, the typhoid bacillus, and the spirillum of the septicæmia of fowls has been located by the work of Pfeiffer and Marx,¹³ of Wassermann,¹⁴ and of Levaditi.¹⁵ They have shown that the leukopoietic organs, especially the spleen, the bone marrow, and the lymph channels are the localities in which these antibodies are prepared.

Returning from a brief consideration of some of the recent progress in the study of the internal paths of infection and having, in the previous paper, had something to say of the external paths of infection it is necessary to refer to some of the more familiar aspects of the question of the actual passing of the epithelial border by foreign matter, protoplasmic and inert.

It seems strange, after all the testimony that exists to the contrary, that not infrequently we find it assumed not only by men of exclusively clinical experience but by those who should know better that a solution in continuity is in itself necessary for infection of the pharyngeal mucosa. On the other hand, it is assumed that a solution of continuity, in the presence of pathogenic germs, of itself is a guarantee that they pass in. I have shown that scraping off the epithelium of a tonsillar crypt has no influence upon the absorption of the germs, which it contains, by the subjacent tissue. Knowing, as we do, that the mouth and nose contain large numbers of pyogenic and other morbid germs, were this not so the internal tissue would be swamped with infection after every tonsilotomy or other trifling operation going on by thousands every week in the year. Familiar as this fact ought to be to laryngologists it is repeatedly ignored by them in discussions.

The difficulty is probably partly one of conception. We might stretch the term "solution of continuity" to include the breach made in the surface tension between the individual epithelial cells, or in the colloid of the cell itself, whereby carmin granules or dust particles go beneath the surface, but that is not what is meant in common parlance. Even some of those who work with the microscope look

¹⁰ See, for example, Minor, Diphtheria, in *Zeitschrift für Bakteriologie*, xl, part 5, p. 620, March 10, 1906.

¹¹ *Journal of Pathology and Bacteriology*, vi, March, 1906.

¹² Ghorbati and Bardeh, *Journal of Pathology and Bacteriology*, vi, March, 1906.

¹³ *Journal of Pathology and Bacteriology*, vi, March, 1906.

¹⁴ *Journal of Pathology and Bacteriology*, vi, March, 1906.

¹⁵ *Journal of Pathology and Bacteriology*, vi, March, 1906.

¹⁶ *Journal of Pathology and Bacteriology*, vi, March, 1906.

¹⁷ *Journal of Pathology and Bacteriology*, vi, March, 1906.

¹⁸ *Journal of Pathology and Bacteriology*, vi, March, 1906.

¹⁹ *Journal of Pathology and Bacteriology*, vi, March, 1906.

²⁰ *Journal of Pathology and Bacteriology*, vi, March, 1906.

²¹ *Journal of Pathology and Bacteriology*, vi, March, 1906.

²² *Journal of Pathology and Bacteriology*, vi, March, 1906.

²³ *Journal of Pathology and Bacteriology*, vi, March, 1906.

²⁴ *Journal of Pathology and Bacteriology*, vi, March, 1906.

²⁵ *Journal of Pathology and Bacteriology*, vi, March, 1906.

²⁶ *Journal of Pathology and Bacteriology*, vi, March, 1906.

²⁷ *Journal of Pathology and Bacteriology*, vi, March, 1906.

²⁸ *Journal of Pathology and Bacteriology*, vi, March, 1906.

²⁹ *Journal of Pathology and Bacteriology*, vi, March, 1906.

³⁰ *Journal of Pathology and Bacteriology*, vi, March, 1906.

³¹ *Journal of Pathology and Bacteriology*, vi, March, 1906.

³² *Journal of Pathology and Bacteriology*, vi, March, 1906.

³³ *Journal of Pathology and Bacteriology*, vi, March, 1906.

³⁴ *Journal of Pathology and Bacteriology*, vi, March, 1906.

³⁵ *Journal of Pathology and Bacteriology*, vi, March, 1906.

³⁶ *Journal of Pathology and Bacteriology*, vi, March, 1906.

³⁷ *Journal of Pathology and Bacteriology*, vi, March, 1906.

³⁸ *Journal of Pathology and Bacteriology*, vi, March, 1906.

³⁹ *Journal of Pathology and Bacteriology*, vi, March, 1906.

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⁴¹ *Journal of Pathology and Bacteriology*, vi, March, 1906.

⁴² *Journal of Pathology and Bacteriology*, vi, March, 1906.

⁴³ *Journal of Pathology and Bacteriology*, vi, March, 1906.

⁴⁴ *Journal of Pathology and Bacteriology*, vi, March, 1906.

⁴⁵ *Journal of Pathology and Bacteriology*, vi, March, 1906.

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⁶² *Journal of Pathology and Bacteriology*, vi, March, 1906.

⁶³ *Journal of Pathology and Bacteriology*, vi, March, 1906.

⁶⁴ *Journal of Pathology and Bacteriology*, vi, March, 1906.

⁶⁵ *Journal of Pathology and Bacteriology*, vi, March, 1906.

⁶⁶ *Journal of Pathology and Bacteriology*, vi, March, 1906.

⁶⁷ *Journal of Pathology and Bacteriology*, vi, March, 1906.

⁶⁸ *Journal of Pathology and Bacteriology*, vi, March, 1906.

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⁹⁶ *Journal of Pathology and Bacteriology*, vi, March, 1906.

⁹⁷ *Journal of Pathology and Bacteriology*, vi, March, 1906.

⁹⁸ *Journal of Pathology and Bacteriology*, vi, March, 1906.

⁹⁹ *Journal of Pathology and Bacteriology*, vi, March, 1906.

¹⁰⁰ *Journal of Pathology and Bacteriology*, vi, March, 1906.

upon the coagulated protoplasm of microscopic sections as the condition that obtains in situ. Nothing could be further from the truth. The cell is a living colloid solution, in which a multitude of processes of absorption, of osmosis, of all the varied phenomena of surface tension and of mitosis are going on. It has been shown that dust and oil, scattered on this colloid fluid living thing, sink beneath the surface more promptly than they do in water. When the relation between the surfaces of bacterium and cell are dynamically the same as between dust particle and cell, the solution of continuity in the ordinary sense of the term is not necessary. When through the influence of some condition of cell or bacterium, some sensitizer, some opsonin like stimulus, some nerve influence, the invading germ probably does not need even to find the stomata of Stöhr to gain an entrance. Raking off the epithelium, as I have said, is not sufficient. A long stillette run deeply into the tonsillar substance will usually show some deep colonies in its track the next day, and when the epithelium is raked off, in the secretion outside of the tonsil bacterial colonies are plentiful.

It is plain that this is in accord with the law upon which Jennings¹⁶ insists, which holds good for the metazoa as for the protozoa. The response of living protoplasm to stimuli varies not only with the stimulus but with the physiological state of the protoplasm. In the metazoa the physiological state of the protoplasm is different at different localities. It differs to meet the exigencies of its habitual environment in accordance with the universal law of evolution. The habitual physiological state of the surface epithelium is one thing and that of the sub-epithelial tissue is another thing. Just as I have lately shown¹⁷ that a plasma cell arriving at one locality grows into an osteoclast or osteoblast in accordance with the demands of growth, so through the mysterious action of the forces of heredity, even cells of the same epiblastic and mesoblastic origin develop in different localities different potentialities in the general function of immunity.

I have made several references in these and other articles to the stomata of Stöhr. I have also had much to say of the prompt absorption of dust by the tonsils. It is necessary here to refer to some experimental work which has shown that dust may be also excreted by the tonsils. In the early days of modern histology, many observers had investigated the question of the fate of foreign matter in the circulating blood, and had found that colored particles of microscopic size injected into veins ultimately found their way into lymph glands. It is, of course, well known to histologists that Stöhr in his textbook describes stomata in various kinds of endothelium and epithelium, which, he asserts are channels by which leucocytes, so regularly seen on the surface of the tonsils exude from the deeper tissues. The emigration of such elements, especially in acute and subacute inflammatory conditions, are familiar enough to me, but I must confess to a doubt of the existence of such stomata when the leucocytes are not passing. If any one has noted the appearance of gaps in the epithelium unoccupied by a wandering cell, I know of no technique by which this could be

distinguished from an artifact, and I do not believe it exists in the sense of a gaping mouth.

However this may be, certain observations made some twenty years ago by Seibel¹⁸ seemed to show that dust particles, injected into the general circulation, were promptly excreted not only by the kidneys but by the tonsils. Incidentally the matter has been recently taken up¹⁹ in an admirable article by Buxton and Torrey, who show that dust particles are engulfed by leucocytes after they reach the lymph nodes. In this way they enter the wandering cells and may thus be excreted from the tonsillar surfaces. We may thus easily understand how dust passing in may obey laws of surface tension and osmosis in one way and on passing out may obey other laws. In the first instance they are naked particles, in the second they are encased in living protoplasm. In another article I shall have occasion to refer to the different behavior of the surfaces of such particles, the living and the inert.

44 WEST FORTY-NINTH STREET.

CLINICAL OBSERVATIONS ON THE USE OF COTARNINE PHTHALATE.*

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The very readable article by Dr. Carl Abel in the *Berliner klinische Wochenschrift*, called my attention to a comparatively new uterine hæmostatic, viz.: the neutral phthalate of cotarnine, of which Dr. Abel (who is the author of the *Manual for Gynecological Pathology*) cannot speak too highly. Having a few cases of severe menorrhagia on hand in which my usual remedies had failed, I made haste to give this chemical a trial.

I will remark here in advance that I have given up using hamamelis, hydrastis, and adrenalin because I have not been able to get the desired effect in a majority of cases. Ergot and cotton root act more satisfactorily and have been relied upon, generally speaking.

Cotarnine, a derivative of narcotine, which is a constituent of opium, has for some time been known to have valuable styptic properties. A number of good reports have been published by various authors on cotarnine hydrochloride, and as regards the phthalic acid compound special hæmostatic properties are described. I was very much interested in this new preparation of cotarnine and phthalic acid.

Cotarnine phthalate occurs as a yellowish crystalline powder, easily soluble in water. It is conveniently administered per os in the form of sugar coated tablets of $\frac{3}{4}$ grain each. The dose is 3 to 5 tablets a day, but some authors urge its use up to 9 tablets a day or more, as even in large doses the remedy is free from any effects or after effects.

A series of interesting physiological experiments have been made by Mohr and by Chiappe and Ravano (of Bossi's clinic) which prove that this remedy does not produce uterine contractions, but

¹⁶ See Jennings, *Journal of the American Medical Association*, 1906, p. 1000.
¹⁷ See Ramdohr, *Journal of the American Medical Association*, 1906, p. 1000.
¹⁸ See Ramdohr, *Journal of the American Medical Association*, 1906, p. 1000.
¹⁹ See Buxton and Torrey, *Journal of the American Medical Association*, 1906, p. 1000.

* Virchow's *Archiv*, civ, p. 514.

¹⁹ *Journal of Medical Research*, July, 1906.

* Read in abstract before the New York Obstetrical Society.

performs its functions by acting on the vasomotor nerves of the uterus. Katz, who has extensively written on the subject, feels very well satisfied after two years' experience, and recommends it besides for dysmenorrhœa and irregular menstruation in the menopause, and lays stress on the pronounced sedative action of the salt. Abel is of the opinion that we do not possess a better remedy for combating uterine hæmorrhage than cotarnine phthalate, provided that it is used in the proper indications. But though the beneficial effect of the drug is firmly established, Abel is not sure at all how the drug performs its duty. Freudenberg expresses his trust in the drug especially in inoperable myomata, but not where a quick uterine contraction is demanded post partum. Jacobi recommends using higher doses than the usual $\frac{3}{4}$ grain five times a day in cases of dysmenorrhœa without mechanical causes. So far no toxic effect has been observed in the human being after the administration of higher doses. Similar favorable opinions are voiced by Carbonelli, Witthauer, Burkhart, Murri, and others.

I greet with joy this new uterine hæmostatic, which in cases where operation for some reason is contraindicated or refused and where our standard drugs like ergot and cotton root refuse to act, takes their place and gives results like the following:

CASE I.—Mrs. V., forty-eight years of age, married twenty years, widow for eight years. Patient had two children, youngest twenty-three years old, and has had no abortion. The family history was good. She suffered from two subperitoneal fibroids, each of about the size of a large grape fruit. She first saw me about three years ago and refused operation. Since then she had been treated by the administrations of fluid extract of ergot in 30 drops to one teaspoonful doses. The tumor had not increased, but of late menstruation had been very profuse and could not be checked by increased doses of ergot. Fluid extract of cotton root had no effect. She had been taking cotarnine phthalate for the last three months in $\frac{3}{4}$ grain doses 5 times daily during her period with such a good result that she asked for her tablets the last time and so far her menorrhagia has been checked.

CASE II.—Mrs. B., forty-nine years of age, married twenty-one years. Patient had had no children and no abortion. The family history was good. She came under my observation four years ago suffering from a coconut sized subperitoneal fibroid and refused operation. Ergot treatments checked growth of tumor. Patient had been suffering from menorrhagia for the last six months. Cotton root and cotarnine hydrochloride brought no relief. She had been taking cotarnine phthalate for the last three months, and had since been menstruating normally. She also demanded her tablets because she experienced such relief.

CASE III.—Mrs. J., thirty-five years of age, married ten years, mother of 4 children, youngest one two years old, aborted $2\frac{1}{2}$ months ago in the third month of pregnancy. Patient refused curettage, which was indicated on account of hæmorrhages lasting over two weeks afterwards. Ergot had no effect. After taking cotarnine phthalate for two days the hæmorrhage ceased.

CASE IV.—Mrs. K., forty-nine years of age, married twenty-one years, mother of two children, youngest one seventeen years old, no abortion. There was a myoma of the uterus, and operation was refused. For the last three months menorrhagia for which ergot brought no relief. Cotarnine phthalate in six doses of $\frac{3}{4}$ grain per day gave immediate relief.

CASE V.—Mrs. B., forty years of age, mother of

five children, youngest one five years old, no abortion. Suffered from a subinvolved uterus and accompanying symptoms. She had refused curettage for metrorrhagia. Ergot, cotton root, and cotarnine hydrochloride had no effect; neither had cotarnine phthalate. I am trying to persuade her to let me perform a curettage.

CASE VI.—Miss R., twenty-three years of age, had an abortion at the third month. Curettage on account of persistent hæmorrhage was indicated, but was refused. Cotarnine phthalate stopped the discharge in two days after ergot had failed.

In conclusion I should like to summarize my limited experience with cotarnine phthalate as follows:

It has given relief in five cases out of six after the usual other remedies had failed.

It never interfered with digestion nor were there any bad effects observed. Failure in Case V does not prove against the value of the drug, for obvious reasons.

I shall therefore in selected cases, where operation is refused, a uterine hæmostatic is demanded, and there is no necessity for a hurried uterine contraction, use cotarnine phthalate a great deal more frequently, as I am perfectly satisfied with the results thus far obtained.

45 IRVING PLACE.

THE MUTUAL OBLIGATIONS OF SURGEONS AND INTERNISTS IN THE DEVELOPMENT OF GASTROENTEROLOGY.*

BY HENRY WALD BETTMANN, M. D.,
Cincinnati.

The medical treatment of disorders of digestion has made enormous strides during the past twenty-five years. The chief factor in this progress has been the stomach tube. By means of the tube, diagnosis has been improved and thereby the adaptation of the treatment to the existing pathological conditions has been made possible. Other important factors have been the advance in our physiological conceptions of digestion and the facts revealed by abdominal surgery.

Unfortunately this knowledge and power have not become the common property of the profession. The general practitioners have not kept pace with the advances in this field of work. The surgeons, for the most part, have remained in ignorance of what can be accomplished by the proper treatment of digestive disorders. The cause of this state of affairs is not hard to find. The medical colleges up to within the past few years have not established special chairs in this department of practice. The advances in gastroenterology have appeared to the older practitioners to be of a too technical character for them to master. The internists who have been especially interested in this field have written comparatively little, internists in contrast to surgeons being possessed of what Sahli aptly called a philosophical reserve—"Ein philosophisches Publications-Abstinenz." The *Zeitgeist*, too, pays rather indifferent attention to the plodding student of symptoms and signs, and encourages the bolder and more sensational work of the operator. This is well shown in the medical journals which minutely abstract the surgical papers and often slight, in stepmotherly fashion, the technical articles of

* Presidential Address at the annual meeting of the American Gastroenterological Association, held at Boston, June 4, 1906.

the internist. It thus happens that the general practitioner when face to face with a difficult case has his train of thought diverted from the laborious channel of technical study into the more obvious path of surgical intervention. In this course he is encouraged by the surgeons who on the one hand have remained somewhat ignorant of the resources of internal medicine, and on the other are possessed of what an eminent surgeon has called "a magnificent optimism" regarding the results of surgical treatment. Thus the patient goes from bad or rather inadequate medical treatment, not to good or adequate medical treatment, but to surgery.

It is obvious that the reform of this unfortunate state lies in referring the obstinate cases not to the surgeon, but to the internists who by training are qualified to grapple with them. The cry should be "not from bad treatment to the surgeon, but from bad treatment to good treatment." The time will come when the general practitioner will be sufficiently educated to treat the severer gastric disorders successfully. Good early treatment will cure most cases. This statement cannot be too strenuously insisted upon. By good early treatment most of the surgical complications will be prevented. The surgeon must be taught to ask not *how long* the patient has been treated, but *how well*. The indications for operating should be based not on the obstinate nature of the case under bad treatment, but its resistance to appropriate treatment.

It is the daily experience of specialists to see cases which have remained stubborn for months or years yield quickly and smoothly when an appropriate treatment is instituted. The advice to operate should come from the qualified internist and from no one else.

The internists will become qualified only when they are well taught. The greatest present needs in the department of gastroenterology are: 1. Systematic and specialized undergraduate instruction. 2. Wider opportunities for postgraduate study. 3. The education of the surgeons to a realization of the actual resources of internal treatment.

It is certainly a reproach to the profession when a celebrated surgeon¹ repeatedly states that dyspeptic patients will soon have to seek surgical treatment at first hand instead of medical treatment. That the surgeons need enlightenment may be inferred from a recent utterance of a surgeon² "that he was not acquainted with any momentous changes which have occurred in the treatment of digestive disorders throughout many generations." When the same surgeon declares from an experience of thirty operated cases "that persistent gastric indigestion is never functional in character merely," may we not somewhat wonder at the scientific acumen which permits of such broad generalization?

During the past few years many statistics have been gathered for the purpose of studying the frequency of gastric ulcer and the ultimate outcome of its medical treatment. Much serious study in this direction is urgently called for. American surgeons have exposed themselves to severe criticism for their reckless application of foreign statistics to American conditions. We need not go back so very far to find a famous surgeon writing that 4 to 5 per cent. of all people have gastric ulcer, and that 20

per cent. of these die as a result thereof. The incidence of gastric ulcer should be studied in every section of the country, in the dead room, in the clinic, and in the operating room. The autopsy records are not of themselves conclusive, for, as Brooks has pointed out, many ulcers of slight extent occur and heal without producing symptoms marked enough to induce the patient to consult a physician. Thus the pathological records will outnumber the clinical ones. The best source of correct statistics will be the medical wards of carefully conducted hospitals.

Regarding the final outcome of medical treatment, the last word has not yet been said. Results in private practice will differ tremendously from the results in hospital practice. Comparatively few private patients properly treated die of gastric ulcer. The earlier the treatment is begun, the less will be the mortality and the more satisfactory the permanent outcome. The average mortality will be less than 4 per cent. Hospital patients come under treatment in neglected condition, and proper after treatment is not possible. The ultimate prognosis in hospital cases under medical care is therefore doubtful, and a large proportion of those who leave the hospital in good condition will suffer from relapses and some from fatal complications.

Sufficient time has not yet elapsed for us to know the final outcome of operations for gastric ulcer in hospital patients. Reports are few, the total number of cases is small, and we have not as yet any detailed statistics by surgeons as to the ultimate fate of their hospital patients. It is possible that patients who are to be exposed after leaving the hospital to the physical hardships associated with poverty will do better under surgical than under medical treatment, although a final conclusion at the present time is not warranted by any available data. The careful nonpartisan collection of statistics through many years is required to make a definitive answer possible.

Internal medicine will undoubtedly be a great gainer through the increase of abdominal operations. The "autopsy in vivo" will clear up some dark chapters and may correct some faulty conceptions. Certain questions of diagnosis can be solved by the surgeons alone because all elements of doubt can be eliminated after the abdomen has been opened. Up to the present time the surgical literature has not been of material service in that regard.

I think we may fairly put it down as a grievance against the surgeons that they have given us few analytic studies of their operated cases, that they have overstated the difficulties and limitations of the medical diagnosis, and that they have indulged in careless generalizations. The typical cases are already well understood by the internists. Only the surgeons can give us definite statistics about the atypical cases, and aid the cause of diagnosis by an analytic study of all the symptoms and signs. Certainly the surgeons themselves cannot long remain satisfied to have "the majority of operations primarily exploratory" in nature based on chronicity or obstinacy of the symptoms.

Much confusion could be avoided if surgeons were to discuss the medical aspects of gastric disorders with more reserve. We are told by Mumford that it has been demonstrated that hyperchlorhydria

is not the cause of heartburn. Deaver says that he has never seen cases of gastroptosis except in connection with dilatation of the stomach, or in that "rare" condition called splanchnoptosis. McGraw says that in cases of pyloric obstruction bile is always absent from the ejecta. Many absurd errors are found in the recent surgical literature on the stomach. These have been fully referred to in a previous article. A suggestion is made to surgeons to acquaint themselves thoroughly with the medical aspects of gastric disorders as a proper preparation for missionary work in surgery.

The darkest chapter in internal medicine is that on cancer of the stomach. The problem is one of early diagnosis so that a hopeless medical disease may become a promising surgical one. Late surgical interference accomplishes little or nothing. Palliative surgical measures are of doubtful utility except in a few cases.

The cases must be sent to the surgeon in time for the total extirpation of the diseased parts. The demand for early explorations in suspicious cases is wholly justified. But here again a reservation must be made. The suspicion indicating laparotomy must be in the mind of a qualified and experienced internist. If possible, surgery must be saved from the error of indiscriminate operating. Too many negative findings or futile operations will bring exploratory operations into disrepute. Surgeons should be frank enough to give us fuller statistics than is their wont. Cases of achylia gastrica and of atrophic gastritis will easily mislead the practitioner and the surgeon.

The most urgent need at the present time is to combat the furor operandi on the one hand and to make justifiable explorations popular on the other. Just how much we may expect from surgical interference in cases of cancer of the stomach lies with the future to decide.

EDWARD H. BELL

TRICHINIASIS. REPORT OF A CASE.*

By A. H. MELLERSH, M. D., and M. H. FUSSELL, M. D.,
Philadelphia.

Trichiniasis or trichinosis (the form of the word depending upon whether it is formed according to the Century Dictionary of trichina and (osis), or according to Foster of trichina and (iasis) is a disease caused by the patient swallowing raw or partially cooked pork containing the living embryos of the *Trichina spiralis*.

Trichina spiralis is a nematode worm, viviparous, the male measuring 1.5 mm., the female 3 mm. in length, having a long pointed head, and the male a double pointed caudal end. In this form the worm inhabits the intestine, giving rise to many embryos. The embryos penetrate the intestinal wall, enter the muscle through the blood stream and the lymphatics, where they assume a spiral form and finally become encapsulated. It is this entrance of the embryos into the muscles which causes the mischief, giving rise to the symptom complex we call trichiniasis.

According to Osler trichinæ were discovered in the human cadaver by Tiedemann in 1822. Leidy first described them in the hog, and years afterward,

indeed until the time of his death, one of us has heard him speak with pardonable pride of his discovery which led to the recognition of this, the source of the trichiniasis in man.

The disease trichiniasis, however, was not recognized in man until Zenker discovered the parasite in the muscle of a young girl who died of what was supposed to be typhoid fever. The account of this case can be found in Virchow's *Archiv*, 1860. Since that time the disease has been well studied, but sporadic cases such as the one here described were very frequently overlooked until routine examination of blood in hospitals came to be the vogue, and Thomas R. Brown, of Johns Hopkins Hospital, discovered in 1897 an enormous eosinophilia in a case supposed to be typhoid fever. Since that time many cases of trichiniasis have been reported with eosinophilia as a prominent symptom.

The following case is such a typical one and presents practically all of the salient features that it may be used as an example of the ordinary attack of trichiniasis.

George H., age seventeen, a spinner. Born of American parents, he has always lived in this city, where his parents are living and well. Six brothers and sisters are living and well. One brother died in infancy. He has suffered from measles, whooping cough, and diphtheria, but never had typhoid fever, scarlet fever, rheumatism, or mumps. His food is that usual in the families of working people. Four days before the onset of his symptoms he ate liver sausage with the rest of his family. He was admitted to St. Timothy's Hospital November 4, 1906. Seven days before admission to the hospital he noticed much swelling of his face and consulted his physician for the trouble. After three days he was confined to bed with pains in neck, face, and limbs. He had fever. His appetite was poor, his bowels were constipated. He had no nausea or diarrhea. On account of his high and continued fever he was sent into the hospital with a tentative diagnosis of typhoid fever.

Physical Examination. A well nourished lad with flushed face; the face on both sides just anterior to the ear swollen. He lies with his arms flexed. Pupils are equal. The swelling of the cheek is due to enlarged masseter muscles. The biceps muscles are swollen on both arms, the skin over the biceps is somewhat edematous. The pectoral muscles are swollen and tender, the belly is not distended, there is some abdominal tenderness, especially along the recti muscles. The thighs are tender and swollen. There is no enlargement of the spleen. The liver is not enlarged. There is no difficulty in swallowing. Patellar reflexes are absent. There is a marked urticarial rash over the chest, and when the skin is handled a tache appears. The blood was examined. The red cells numbered 4,580,000, white cells 23,800. The differential count was as follows: Polynuclear 69 per cent., eosinophilis 23 per cent., small lymphocytes 6 per cent., large lymphocytes 2 per cent. A small piece of muscle was removed, and three trichinæ were discovered in the freshly teased muscle. The report of the muscle is as follows: The specimen of muscle from the forearm shows round celled infiltration between the muscle fibres, and oval bodies with small cells at each end. The bodies have all the characteristics of trichinæ capsules except the worm cannot be seen. In another specimen there is an oval mass containing a spiral body which is doubtless the worm. The Widal reaction was negative. The urine was sixty fluid ounces for twenty-four hours, contained a trace of albumin and many small, dark, granular casts. Temperature 103.5° F.

* Read before a meeting of the Northwestern Branch of the Philadelphia County Medical Society, December, 1906.

November 8. The physical signs are about the same. The forearms are flexed on the arms, and forcible extension is very painful. There are many urticarial wheals. Some photophobia. Numbness in third and fourth fingers of right hand.

November 9. Pain over body subsiding.

November 13. The mass over masseter has disappeared. Patient is comfortable. Slight emaciation.

November 14. Pain less, but weakness of arms as shown by grip.

November 18. Pain and tenderness entirely gone, strength is improving.

November 21. Temperature not above 100° F. Patient feels well. Strength improving.

November 27. The patellar reflexes are normal. Patient discharged.

The prominent features then of trichiniasis as shown by this case are:

First. Early œdema appearing first in the eyelids. This may be so marked as to lean to a diagnosis of nephritis, as it did in the present case, the presence of albumin and casts in the urine giving color to the diagnosis.

Second. Pain and swelling of the muscles with joint pains and œdema of the skin over the muscles. The pain and stiffness of the limbs is the chief complaint of the patient, so great is the swelling of the muscles that they are hard and tense. The swelling and tenderness of the masseter in this case was so great that the muscle standing out as a mass just before the ear caused the resident physician to make a possible diagnosis of mumps. The muscle, however, could easily be isolated by grasping it inside the cheek and having the patient close his mouth.

Third. Fever. In cases of trichiniasis which are local outbreaks due to a number of individuals being simultaneously seized, with muscle pains and fever, the diagnosis is at once suspected, especially if the affected individuals are, as suggested by Osler, Germans who have participated in a *Fest*. But when an isolated case occurs, and the individual develops a continued fever the diagnosis is almost without exception typhoid fever. The fever is usually prolonged for three or four weeks and is remittent or intermittent, but it may be as the case here reported, of a continued type resembling chiefly the fever of typhoid. It is only after careful examination of the case including a blood examination which allows a correct diagnosis.

Fourth. The urine in this case was excessive in amount. Averaging 60 ounces in twenty-four hours for days. Polyuria is the rule. It contained a trace of albumin and many small, dark granular casts. The casts slowly disappeared during convalescence.

Fifth. Gastrointestinal Symptoms. These were absent in this case. In many cases no such signs can be developed except by careful questioning. There is usually a history of eating partly cooked meat, but this is often forgotten by the patient, as it was in this case until he was frequently questioned. The gastrointestinal symptoms when present, vary from a severe gastroenteritis to a mere griping pain. Worms have been found in the stools. They were not found in this case.

Sixth. The blood. As stated before Thomas K. Brown in examining the blood of a patient with what was supposed to be typhoid fever, noticed first

that there was a marked leucocytosis, and in differential count that the eosinophiles were greatly in excess of the normal, about 23 per cent. Subsequent observation on this same case showed that the leucocytosis and the eosinophilia persisted for several weeks. Observation of five cases showed leucocytosis and eosinophilia in all. These cases were reviewed by Osler in the *American Journal of Medicine*, series for 1899, vol. i., page 251. The blood in the case herewith reported is as follows:

Date.	Red cells.	White cells.	Hæmo- globin.	Polymor- phonu- clear cells.	Eosino- philes.	Lympho- cytes.	Large Sm'11
			%	%	%	%	%
November--							
6, 1906..	4,580,000	33,800	..	69	23	2	6
7, 1906..	4,640,000	21,200	75	58	39	..	..
8, 1906..	..	13,000	..	60	27	8	5
9, 1906..	4,800,000	12,600	80	41	27	24	8
10, 1906..	..	10,200	..	53	22	15	10
11, 1906..	..	9,500	..	57	29½	9½	3
12, 1906..	4,420,000	9,000	..	69	20	6	5
14, 1906..	..	12,400	..	61	33	..	..
16, 1906..	..	11,650	..	55	27	..	..
18, 1906..	4,350,000	9,600	75	57	25	14	4
20, 1906..	..	7,800	..	48	20	..	..
26, 1906..	4,200,000	9,600	70	..	22	..	..
December--							
5, 1906..	..	12,000	..	..	..	..	..

The origin of the eosinophiles in these cases is still a matter of conjecture. Brown's ideas are thus expressed in his article in the *Journal of Experimental Medicine*.

The study of the blood and the tissues of our cases of trichinosis furnishes us with important evidence bearing upon the origin of the eosinophilic cells. The constant inverse relationship existing between eosinophiles and neutrophiles, the increase of the former being invariably coupled with a coincident decrease of the latter, so that the neutrophiles on some occasions were absolutely subnormal in number, notwithstanding the marked leucocytosis, as well as the similarity in size and character of the nuclei of the two varieties of cells, both point strongly toward some very close connection between the two forms. Indeed, the striking and constant inverse relationship between the neutrophiles and eosinophiles would appear to be strong evidence in favor of the view that the latter cells arise, in some instances at least, by direct transformation of the former. There is much also to suggest that this transformation may have occurred here in the muscles. The presence in the first piece of muscle of many neutrophiles, together with many typical eosinophiles and cells, which might be regarded as transitional forms between the two, and the findings in the second specimen two weeks later of a greatly increased number of eosinophiles, harmonize with this idea, especially when we consider that on both of these occasions the ratio of the neutrophiles to the eosinophiles in the peripheral blood and in the vessels of the interfascicular connective tissue was between four and five to one, a very much larger ratio than that which exists between these cells in the muscle.

How such a transformation might take place one can only conjecture. One may imagine that the trichinæ on reaching the muscle act as a strong irritant or poison, giving rise to many tissue changes, and probably producing either primarily or secondarily chemotactic substances which attract large numbers of leucocytes to the muscles, causing a marked leucocytosis, especially in the more degenerated portions. In these regions the polymorphonuclear neutrophiles wandering out of the vessels act as phagocytes upon the degenerating bits of muscle. It is in these phagocytes apparently that the change in the character of the granules takes place.

By this it is not meant that the eosinophilic granules are bits of ingested material, but that they are elaborated by the cell itself. May not this result per-

haps be due to the indigestion of some material originating from the degeneration of the muscle fibres, which may bring about some essential change in the character and chemical condition of the cell?

Finally, we may well suppose that these cells wander or are swept back into the general circulation, giving us the marked increase in eosinophiles. Such a theory would not seem unreasonable, particularly when we consider the amount of muscle tissue in the body. The fact that practically no typical neutrophiles or eosinophiles, that is, evidence of transition, were seen in the blood itself speaks against the probability that such a change may have taken place in the circulation. Again, these small polymorphonuclear cells are certainly very different in appearance from the large, often mononuclear eosinophiles which we find in the blood and know to come from the marrow in leucæmia.

The lessons of the case here reported are that, any case of fever which does not give a Vidal reaction, in which there is a leucocytosis and no physical signs to explain the source of this, should have a differential count made. Eosinophilia occurs in bronchial asthma, in certain skin diseases, in leucæmia, in uncinariasis, but these conditions are so easily diagnosticated from a possible trichiniasis, that a mistake could scarcely be made. With our present light any case giving the symptoms detailed and showing a decided eosinophilia may surely be diagnosticated as trichiniasis without resorting to the expedient of removing a bit of muscle. This is then another reason for a routine count of blood, at least as nearly routine as it is possible to make it. It takes time, but it is of the greatest value.

To summarize then: Trichiniasis is due to the ingestion of uncooked pork containing live trichinæ. The symptoms are fever, pain of the limbs and joints, swelling of the face, polyuria, usually gastroenteritis, always leucocytosis and eosinophilia.

180 GREEN LANE, MANAYUNK.

A CASE OF CANCER TREATED BY TRYPSIN.

By WILLIAM J. MORTON, M. D.,
New York.

So many practitioners in all parts of the world are now testing the value of trypsin in cancer that it should not be long before an ultimate opinion will be reached. In the mean time, in arriving at such an ultimate opinion, individual cases have value. My own experience has been mostly confined to inoperable cases, and for this very reason it was a pleasure to have an opportunity of testing this agent upon a case of short duration and therefore presumably more amenable to treatment. A case of this type is given below and the result would seem to be especially fortunate.

Case prior to beginning treatment by trypsin.—Mrs. E. P., age forty-five. October 19, 1905. Patient first noticed about fourteen months ago a small tumor or lump on the left side of the left breast at the base of the outer quadrant. The lump "pulled in" gradually, with no pain. Upon examination a very deep retraction of the skin presented itself with a central, hard mass adherent to the fascia of the ribs. Grasped between finger and thumb the mass measured two inches vertically and one inch horizontally. The diagnosis of cancer was subsequently verified by microscopical examination. The patient was of an intensely nervous disposition and became unnerved for days upon the slightest suggestion of an operation. She resolutely refused operative interference. Under these circumstances the following proposition was made to the husband, viz., to proceed with x ray treatment, radioactive water and fluorescein, and endeavor to win her approval to operation later on.

December 1, 1906. The tumor was still the same in size, retraction much less observable, but adherence to the tissue persisted. The next course of action for a simple removal of the offending mass threw the patient into a state of nervous collapse to-day.

March 13, 1907. The patient had arrived at a point of reduction of the size of the tumor where a comparatively slight operation for the removal of the remaining portions of the growth was deemed advisable. She had frequently been advised to have this done and had refused. The tumor was not larger than the end of one's thumb, directly over which was still a slight depression. There was no pain and no enlargement of the glands discernible in the vicinity. Patient went away for a ten days' holiday. She had gained sixteen pounds in weight and her general health seemed perfect.

April 2, 1906. The tumor was removed under cocaine by Dr. J. N. West. It was a very hard mass but came away distinctly from the underlying tissues. It lacked however but little of complete attachment to the fascia of the ribs. Microscopical examination by Dr. H. T. Brooks, of the pathological laboratory of the Post-graduate Medical School and Hospital showed "the structure of scirrhus carcinoma of highly fibrous type." Incidentally it may be mentioned here that the operation was performed in the middle of a pronounced dermatitis and that nevertheless the wound healed rapidly and kindly by first intention.

October 9, 1906. Patient had had from the beginning of my acquaintance with her a small lump the size of a large bean, in the skin, on the right side just below the collar bone and near the tip of the shoulder. This lump had begun to involve the skin and pull it in and down and was evidently scirrhus like the first tumor. After preliminary x ray treatment of several weeks this small tumor was removed in its turn by Dr. J. N. West and under the microscope proved to be also scirrhus carcinoma.

December 10, 1906. Patient returned and reported a new nodule situated beneath the chin. This nodule was about the size of a bean, involved the skin and drew it in, and in every way exactly resembled the first two tumors operated on and removed. This discovery was most disheartening both to the patient and her physician, for it now looked as if there might be no end to these small scirrhus tumors appearing in different parts of the body. It would be of apparently little use to remove this tumor while others might be cropping out anywhere.

Case after trypsin was employed.—Under these circumstances I decided to use trypsin and amylopsin, and on December 10th gave a first injection of 5 minims; on December 12th a second of 10; on the 14th a third of 20, and on the 17th a fourth of 20 minims.

Examination on December 20, 1906, showed that the tumor had entirely disappeared. This result was so unexpected that it was with pleasure that I sent her around to my friend, Dr. West, to corroborate the fortunate result. This he did in the enclosed letter to me.

"New York, January 23, 1907. Dear Dr. Morton: I was much interested in examining Mrs. P. on January 16, 1907. The time before this, December 19, 1906, when I saw her I was alarmed to see that she had under the lower jaw a nodule about the size of an almond, which had very much the appearance of the two other masses which I had removed at two different operations and which proved upon microscopical examination to have been scirrhus carcinoma. At the time of the appearance of the nodule under the jaw she had taken cold and was suffering from a slight sore throat. I was in doubt as to whether this nodule might not have been a gland, but its attachment to the skin and its resemblance to the growth which had been removed

and had proved to be malignant made me also suspect that it too was of the same character. The examination of Mrs. P. on January 16, 1907, showed that this mass had entirely disappeared, leaving no trace. The area of the larger growth under the tendon of the left pectoralis major which was removed last Spring also seemed soft and healthy."

Comments.—This case illustrates the state of mind of certain patients as well also as a course of procedure consisting of preoperative radiation and subsequent removal accompanied, in my opinion, with a minimum danger of recurrence. It also illustrates that an incision may heal kindly and promptly although the operation is performed during a period of fairly severe x ray dermatitis. It illustrates finally the great value of a general treatment such as trypsin is, not alone in removing a local tumor but in giving both patient and physician an assurance that a similar action has probably taken place in other tumors concealed and unknown. I am aware finally that no microscopical examination of the particular tumor caused to disappear under the use of trypsin was made, but this tumor was absolutely identical according to all clinical symptoms with the others removed, and known positively to be carcinomatous.

19 EAST TWENTY-EIGHTH STREET.

SCARLET FEVER: ITS TREATMENT AT THE HOSPITAL FOR SCARLET FEVER AND DIPHTHERIA PATIENTS.

JOHN C. KELLOGG, M. D.,
New York.

Professor of Clinical Medicine, New York School of
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pital for Scarlet Fever and Diphtheria Patients.

In the Hospital for Scarlet Fever and Diphtheria Patients, where daily examinations and careful records are made, the medical staff has opportunities for observing and comparing lines of treatment which are not available to the general practitioner. The treatment described in this paper after comparison with other methods has been found most satisfactory.

The hospital was built in 1897 with the intention of providing private rooms for patients who are so situated as to render difficult their proper care and isolation at home. The buildings are at the foot of East Sixteenth Street facing the East River. There are two separate pavilions which are entirely independent of each other, one for scarlet fever, and one for diphtheria. Each pavilion is equipped with its own physician, staff of nurses, and servants.

The hospital is a private corporation controlled by its own board of governors, and is not connected with the municipal institutions for the treatment of infectious diseases.

Patients admitted to the hospital, although subject to the general rules of the institution in the matter of quarantine and disinfection may be attended by their own physicians. They are assigned to separate rooms having high ceilings and allowing 2,400 cubic feet of air space to each patient. The hard wood floors are varnished and highly polished. The walls and ceilings are painted. There are no moldings to catch the dust and harbor germs. There is no plumbing in the rooms. All the furniture is made of enameled iron so that it may be quickly and thoroughly disinfected. Ample provi-

sion is made for ventilation so arranged as to avoid drafts across the room. Thermometers are placed in the rooms and corridors to aid in the maintenance of a uniform temperature of from 68° to 70° F. The large window in each room admits light freely, but can be darkened if the condition of the patient is such as to render it advisable.

The following rules for quarantine and disinfection, and the diet lists which the writer gradually developed during a term of service of three years beginning in January, 1901, have since been officially adopted by the medical board of the hospital:

General Rules for Disinfection.—Rooms must be disinfected as soon as vacated.

The discharge room must be disinfected each time it is used.

Sputum, stools, and urine must be disinfected with a solution of chlorinated lime, 4 ounces to a gallon of water, and sputum cups when in use must contain a solution of lysol, 0.75 per cent.

Letters are sent to the small steam sterilizer daily at 10 a. m. They must be stamped and addressed, but must not be sealed.

Letters which are sealed are opened and held until the following day for disinfection. (For this purpose they are exposed to steam at a temperature of 220° F. for twenty minutes, after which they are dried in a vacuum.)

Clothing and other belongings must be disinfected with formaldehyde as soon as patients are admitted to the hospital.

Preparatory to discharge all wash goods, including bath robes, blankets, and all garments worn next to the skin are placed in the large or small steam sterilizer for one half hour. Other clothing must be taken to the formaldehyde chamber the day before the patient is discharged, and requires twelve hours disinfection.

The nurse who takes down the clothing must see that the door of the disinfecting chamber is locked and the key returned to the office and must then notify the man who has charge of the formaldehyde regenerator. Each article must be shaken out and hung up separately. Pockets must be turned inside out. Bags, pocketbooks, and card cases must be emptied of their contents and left open, and gloves must be turned inside out. Shoes and overshoes are disinfected with formaldehyde. It should be remembered that gloves, shoes, and all articles made of leather or rubber will be ruined by attempting to disinfect them with steam. Furs require twenty-four hours disinfection with formaldehyde.

All papers must be opened and separated and disinfected with steam.

Books, magazines, toys, and pillows must not be taken from the pavilion.

Money must be disinfected by immersion in bichloride solution, 1 to 2,000, or carbolic acid solution, 1 to 20, and must be delivered personally by the nurse to the matron or resident physician.

Watches and jewelry are to be disinfected only after obtaining special instructions in each case.

Toilet articles must be immersed in bichloride solution, 1 to 2,000, for one hour, or if they have metal trimmings, in carbolic acid solution, 1 to 20.

Bottles which have been opened must not be taken away. If unopened, they may be immersed in bichloride solution, 1 to 2,000, for twenty minutes.

For steam disinfection, the hospital supplies two steam sterilizers. One of them corresponds in all details with the sterilizers used in the general hospitals for sterilizing surgical dressings. The other is built on the same principle, but is large enough to hold mat-

tresses or articles of furniture which it may be necessary to disinfect.

For formaldehyde disinfection there are two rooms with double walls thickly padded, each having an air space of 200 cubic feet. There are rows of hooks on the ceilings so arranged that articles of clothing suspended from them are exposed on all sides to the fumes of the formaldehyde. Eighteen ounces of formaldehyde solution is used for each disinfection.

There are several ways in which money may be disinfected. The process of dipping in some antiseptic solution and drying between blotters is simple and makes it possible to transfer it directly from the nurse to the resident physician. Watches can be disinfected with formaldehyde, also all articles of jewelry. The question of a safe method of disinfecting pearls often arises as they are so easily darkened. My experience has been that they may be safely exposed to the formaldehyde gas or wiped off with pure carbolic acid. They are injured by the fumes of burning sulphur, bichloride solution, or an aqueous solution of carbolic acid.

Rules for the Disinfection of Patients.—All adult patients on the day of discharge must be disinfected as follows (for children obtain special instructions in each case):

- Irrigate ears with bichloride solution, 1 to 8,000.
- Shampoo scalp with soap and water.
- Shampoo scalp with bichloride solution, 1 to 2,000.
- Tub bath, soap and water.
- Sponge bath, bichloride solution, 1 to 2,000.
- Sponge or shower bath, plain water.
- Nasal spray, bichloride solution, 1 to 8,000.
- Mouth wash, saturated solution of boric acid.

Beginning several days before the probable day of discharge, the scalp is shampooed and the ears are irrigated on alternate days.

A suite of three communicating rooms is conveniently arranged for discharging the patients. The first room is entered from the corridor and here the hospital clothing is left. In the second room the disinfecting baths are given. In the third room the patient puts on his freshly disinfected clothing and leaves the hospital by a special exit.

The resident physician before entering the pavilion at each visit is required to wash his hands thoroughly with soap and water and then to immerse them in bichloride solution, 1 to 2,000. He wears a gown which buttons closely around the neck, covering the collar and enveloping the body completely. He also wears a cap and rubber overshoes. Upon leaving the pavilion he disinfects his hands and face and uses a mouth wash of boric acid solution. The attending physicians, whether of the regular hospital staff or specially employed by the patient, follow the same routine, which is likewise required of all visitors. Ladies, if admitted at all, must remove the dress skirt before putting on the uniform.

General Management of the Disease.—Patients are clad in light night robes and during cold weather wear an undervest with long sleeves. This is insisted upon, as most patients are careless about exposing their arms, neck, and chest.

They are kept in bed until the temperature has been normal for ten days, although a minimum period of three weeks is required. By following this general rule, the tendency to heart and kidney complications is much diminished.

The change from the recumbent to the upright position is made gradually, allowing first one pil-

low, then two, three and four, then a reclining chair, then an upright chair, after which they are allowed to stand in getting from the bed to the chair, and then to walk around the bed.

The time of discharge is determined by the completion of desquamation, which averages about six weeks. A minimum period of five weeks quarantine is required.

Diet.—During the first three weeks the diet consists of milk, after which farinaceous foods are gradually added and later nitrogenous foods, the latter making only a small proportion of the diet until the patients are well along in the fifth week. The diet list is as follows:

Milk Diet: Milk, kumyss, matzoon, junket. When specially ordered, malted milk, cream mixture (cream $\bar{\text{iv}}$, milk sugar $\bar{\text{v}}$ ss. water $\bar{\text{xii}}$).

Cream soups (tomato, pea, celery).

Farinaceous diet: In addition to the milk diet and cream soups give arrowroot, corn starch, rice gruel, rice milk, rice cream, cracker gruel, bread jelly, milk porridge, Fothergills, amylaceous food, barley jelly, milk toast, other cereals.

Soft diet: In addition to the stated diet give once daily poached egg, gelatine preparations, puree of green vegetables, tea, coffee, or cocoa.

Special diet: In addition give once daily sweet breads, calves brains, squab, lean fresh fish.

Extra diet: In addition give once daily scraped beef, chicken, meat soups, green vegetables, and tea, coffee, or cocoa, twice daily.

General diet: Give a general mixed diet including red meats twice daily, tea, coffee, or cocoa three times daily.

A great effort is made to give the patients as much variety as possible and at the same time make the changes and additions gradually.

Beginning as soon as possible after admission to the hospital all adults are given eight ounces of milk every two hours from six a. m. to midnight. To children a proportionately smaller amount is given. In a few cases the difficulty of feeding children is overcome by gavage.

Water.—The importance of giving water freely cannot be overestimated. The surprisingly low percentage of kidney complications in this hospital, which so far as I have been able to ascertain has not been equaled by any other institution in the world, is attributed justly to the large quantities of water the patients drink. Care should be taken, however, not to overdistend the stomach by giving too much at any one time.

It is our custom to give all adult patients 8 oz. of water every two hours, beginning at 7 a. m. and ending at 11 p. m., thus allowing one hour intervals between the administration of milk and water. To children a proportionately smaller amount is given.

Urine.—Daily examinations of the urine are made, and it is not unusual to find the specific gravity standing at 1.004 or 1.006, while 1.010 or 1.012 is considered an indication for increasing the quantity of water. Under this treatment the transient albuminuria which we are taught to expect in the early stages of the disease is an exception rather than the rule, and acute nephritis is very rare.

The Cure of the Skin.—The popular method of oiling the surface of the body, while it tends to prevent the desquamated epithelium from flying about

and by its softening effect will help to loosen the dead skin, is often used over too long a period. It is important that the excretory function of the skin shall reassert itself as early as possible so as to relieve the extra strain thrown upon the kidneys, and the long continued use of emollients after desquamation is well advanced is a mistake. It is my custom to limit the oiling of the body to the early days of the disease and then to use it only in those cases in which the skin is much irritated or pruritus is a prominent symptom. For this purpose cacao butter is excellent.

If the skin is so irritated as to cause considerable pruritus, a most soothing effect can be obtained by sponging with the French bran bags. The calamine lotion used by the dermatologists is also helpful in cases of marked irritation.

R	Poly calamine,	℥i;
	Zinc oxide,	℥ss;
a	Glycerin,	Mxv;
	Rose water,	℥i.
M		

The daily warm bath may be permitted from the onset of the disease although little friction should be used in drying the body. The bath often has a most soothing effect on the restlessness and delirium in the early days of the disease. Special efforts directed to detaching the skin from the general body surface do not shorten the period of quarantine since the soles of the feet are far behind the general body surface in desquamating.

With adults the question of how to hasten the desquamation of this thick, callous skin must always be considered, for if no attention is paid to it, the feet will often take eight or ten weeks to desquamate, while it can usually be brought to a termination in six weeks and sometimes in five by beginning treatment early. The method which I have found most successful is to soak the soles of the feet once or twice daily in a strong solution of washing soda for ten minutes, and then in hot soap suds for the same length of time, after which they are rubbed vigorously with a rough towel. This is continued until the skin shows signs of loosening after which soap and water only are used.

The Care of Nose, Throat, and Nasopharynx.—We often find serious involvement of these cavities and continuous absorption, a condition which keeps up the temperature and conduces to kindey congestion as well as predisposing to otitis media and its sequelæ. Here cleanliness is of extreme importance and must be insisted upon even at decided discomfort to the patient.

The treatment of the throat by means of gargles and sprays is inadequate if the involvement is at all extensive, although a certain amount of relief will be obtained from the local application of hydrogen dioxide, solutions of potassium chlorate or of tincture of ferri chloride. In nearly all of our cases we make use of a douche or irrigation. The technique is described in the *New York Medical Journal*, April 22, 1905 (Review of the Treatment of Inflammatory Conditions of the Throat by Irrigation, and Description of a New Irrigator Tip). For the benefit of those to whom this article is not available it may not be amiss to quote as follows:

Normal saline is the solution ordinarily used. Occasionally when the throat is dry and glazed, a solu-

tion of sodium bicarbonate (one tablespoonful to a pint of water) is preferred to soften tenacious mucus or start secretion.

Boric acid, potassium permanganate, and other antiseptic solutions possess no apparent advantage over the salt water which not only has a soothing and cleansing effect but will do no harm even if a considerable quantity is swallowed while the patient is being "broken in" to the treatment.

The solution is made as hot as it can be borne without discomfort, usually 110° F. at the start with a gradual increase to 125°.

The quantity used is about two quarts; sometimes, however, it is necessary to diminish the amount, until the patients learn to let the water flow out of the mouth without exhausting themselves by gagging and straining.

The severity of the infection plus the ability of the patient to stand the irrigation determine the frequency of the treatment. Severe cases as a rule are irrigated every two hours from six a. m. to midnight.

The patient, protected by a rubber sheet, is turned on one side with the cheek resting on the edge of a pus basin, and the head is lowered slightly by removing the pillow. (Infants are prepared as for intubation by wrapping them from the shoulders to the feet in a strong sheet fastened firmly at the shoulders, elbows, wrists, knees, and ankles.) A fountain or Davidson soft rubber bulb syringe is used. The straight tip of the syringe is introduced into the mouth in the median line and carried back to the base of the tongue, which is held down so as to expose the back of the throat. The solution is then directed with considerable force against the pharynx, or the part of the throat from which we wish to dislodge the membrane. When the mouth is filled, the tube is compressed with the finger, and the patient is allowed to expell the solution into the basin. This process is repeated until the treatment is finished.

The effect of the treatment described is to relieve pain, dislodge membrane, and wash away thickened mucus more thoroughly than by any other means with which I am familiar.

The possibility of carrying infection from the throat to the ears has been urged as an objection to this method. In my own experience this complication has not been observed. Most cases require no other local treatment.

When an organized membrane covers the pharynx resembling diphtheretic membrane, I have found it helpful to use the following solution suggested by Dr. Odendorf:

R	Chloral hydrate,	gr. x to xx;
	Glycerin,	℥i.
M		

This can be advantageously applied to the edge of the membrane with a long glass pipette. Fifteen to twenty drops is sufficient for a treatment. It produces slight local anæsthesia, thereby diminishing pain, is antiseptic, and has a decided softening effect on the membrane. Apply about twenty minutes before the irrigation and repeat as often as necessary.

Frequently it is difficult for patients to take the amount of milk and water prescribed because of the difficulty in swallowing. This is gradually overcome by the irrigations, but much temporary relief may be obtained if the patient is allowed to hold in the mouth and slowly dissolve an orthoform lozenge (¼ gr.). Some complain of dryness of the throat and slight nausea after the frequent use of this drug, but the majority are much benefited.

The nasopharynx and nose must be thoroughly cleansed. There is, however, some difference of opinion as to the best way to do this. The method which is popular with some members of the visiting and consulting staff is to irrigate through the anterior nares with normal saline solution prepared as for the throat irrigation. A special tip, much like the tips used in Politzerizing the middle ear, has been devised to plug the nostril. Only sufficient force is used to carry the fluid back to the nasopharynx, and a sufficient quantity is injected to thoroughly cleanse this space. The quantity of mucus dislodged is sometimes considerable and the relief to the patient is promptly shown by easier breathing, diminished nervousness, and lowered temperature. This excellent method, which is sometimes indispensable, is not free from objections as it is possible to force infection into the middle ear, although the danger is not so great as at first thought would appear on account of the inflammation more or less completely blocking the Eustachian tube.

This treatment I used extensively during the first year of my service as resident physician. Two years' subsequent experience in the same institution in substituting catheter irrigations reduced the percentage of ear complications. My custom now is to limit this method to the cases already having ear complications, or to those in which after using other methods of treatment it seems best to take the chance of infecting the ears in order to diminish septic absorption.

If the nostrils are not occluded the nasopharynx can be cleansed by using saline solution or Seiler's solution in a nasal douche cup. If necessary the nostrils may first be made patent by applying a weak adrenalin solution. If this does not suffice we use the catheter irrigation. The name suggests the method. A catheter is lubricated and introduced through the anterior nares to the nasopharynx and through this the usual irrigation is introduced with a Davidson syringe.

The troublesome excoriation of the anterior nares which often occurs will be much benefited by the free application of 10 per cent. calomel ointment.

Ear Complications.—Early diagnosis and prompt treatment will often prevent permanent impairment of hearing. For this reason it has been our custom to inspect the drum membrane frequently even although there are no ear symptoms. While acute otitis media is often very painful, it is surprising how many cases go on to suppuration and rupture without subjective symptoms, a stain on the pillow being the first symptom to direct attention to the part.

Furuncle of the external canal frequently occurs and is very painful. It is easily diagnosticated by inspection and relieved by free incision followed by bichloride irrigations.

When the middle ear is affected, the drum membrane will sometimes be found congested, sometimes dull and bulging. In this condition I have come to consider the indications for puncture in the posterior inferior quadrant clear if we have marked congestion or moderate bulging of the drum membrane, even without pain, or on the other hand, severe pain with moderate congestion (after ruling out disease of the canal).

When early and free paracentesis was performed there was little or no impairment of hearing, while in those cases left to rupture spontaneously, even although the opening was subsequently enlarged, the ultimate results were not so satisfactory. Moreover it was found that among the cases treated by palliative methods, few of those presenting any of the symptoms of middle ear inflammation improved until rupture had occurred. The treatment of the discharging ear consisted of bichloride irrigations (1 to 4,000) and, in the subsiding stage of instillations of zinc sulphate solution, 3 grains to the ounce. Between the treatments the canal was plugged with sterile cotton. (This treatment was suggested by Dr. F. M. Stephens.)

The development of mastoid tenderness was considered an indication for enlarging the opening in the drum membrane, applying Leiter's coil, and free catharsis, followed by operation on the mastoid if necessary. It is interesting to observe that in several cases marked mastoid tenderness subsided under palliative treatment, and that in few cases treated by early paracentesis did mastoid symptoms develop.

The Digestive Tract.—It frequently requires special attention. When vomiting occurs early in the disease the entire stomach area is usually found sensitive to pressure. The vomitus consists of undigested food, mucus, or an aqueous fluid. The vomitus shows an absence or only a slight trace of hydrochloric acid. The vomiting is usually relieved by teaspoonful doses of bismuth subnitrate, while silver nitrate, $\frac{1}{4}$ grain in half an ounce of water, is given for the hyperæsthesia.

Later in the disease the pain and tenderness in the stomach region is found in a number of cases to be due to an excess of hydrochloric acid and in others to lactic acid fermentation. For the former we use the following prescription:

R Magnesiæ oxidi,gr. v;
Sodii bicarb.,gr. vi;
Lithii bromidi,gr. iiii.

M. et ft. cachet No. i. Sig.: Take one half hour after nourishment.

For the fermentation

R Resorcini,5i;
Aque chloroformi, ad,5iii.

M. Sig.: A teaspoonful in water, as required.

Intestinal putrefaction is frequently present and is indicated by the presence of considerable quantities of indican in the urine. This is controlled by temporarily diminishing the amount of nourishment and giving small doses of calomel. When much gas is present the following prescription is found very helpful:

R Ichthyolis,gr. ii;
Pulv. carbonis lig.,gr. ii;
Pulv. ipecac.,gr. i.

M. et ft. caps. No. i.

Sig.: Take one in the middle of the forenoon and afternoon.

If there is much tenderness over the bowels, the ichthyol is combined with salol and castor oil in small doses.

Diarrhoea is often present during the first few days but seldom requires special treatment, although occasionally it is advisable to irrigate the bowels with normal saline solution, or to give a single large dose of bismuth subnitrate.

Constipation usually follows the diarrhoea or may be a troublesome symptom from the beginning. It is important that this should be controlled, and we endeavor to obtain one movement, or better, two daily. This is particularly important during the third week when kidney complications are most apt to develop. Excellent results are obtained by using a powder consisting of equal parts of epsom salts and cream of tartar. This is given in one or two teaspoonful doses once or twice daily. The compound licorice powder is used in many cases.

It is not uncommon to get an accumulation of hardened faeces in the rectum of considerable size, even when the bowels are moving freely. This complication should be suspected if the patient complains of rectal tenesmus after stool and pain down the anterior and inner surface of the thighs. Manual manipulation is sometimes required to break up the hardened masses, and make it possible for the patient to expel them.

Nervous Symptoms.—The nervous symptoms are occasionally distressing, particularly in adults, and are sometimes difficult to control.

When due to fever, the remedies used for high temperature are helpful. Moderate doses of the bromide salts to which chloral hydrate is added if the pulse is full and bounding, are indicated, also ice at the head and neck, tepid sponging, etc. A rectal suppository containing two grains each of asafœtida, valerian, and sumbul is helpful.

Extreme restlessness, in some cases amounting to delirium, has sometimes been observed in children, resulting apparently from a dry and very much irritated skin. Covering the body with ointment or some bland oil frequently soothes the patients and enables them to sleep. When, in addition to the nervous symptoms, we have a poorly developed rash, the hot bath or pack may be very helpful.

Temperature.—Temperature during the first two or three days of the disease does not require active treatment unless the patient is very uncomfortable. There is often great restlessness, however, and severe headache. The following combination works well with adults and in sthenic cases has not been found depressing.

R Acetphenetidin,gr. iii;
Caffeine cit.gr. i;
Salol,gr. v;
Codeine,gr. ¼.

M.

This should not be repeated more than once or twice. It reduces temperature, quiets nervousness, and relieves pain.

A tepid sponge bath applied for fifteen or twenty minutes frequently has the desired effect without any of the depression that sometimes follows the cold bath. In selected cases, however, we do not hesitate to resort to the cold sponge or sprinkle bath and often with good results.

There is a class of scarlet fever cases in which the temperature continues high throughout the second week without apparent complication. It was observed that most of these patients developed joint symptoms about the end of the second week, and the pain and swelling became manifest about the time the fever subsided. Acting upon this observation the salicylates were given in moderate dose

during the second week of high temperature. A few patients responded promptly to this medication while others were only slightly relieved. Subsequent experience has led me to believe that the cases benefited by this treatment are those having a true rheumatic diathesis and I have accordingly formulated the following rule: In cases with persistent high temperature in the second week, showing no signs of complications and giving a rheumatic history, use salicylates.

When the temperature results from some complication its treatment resolves itself into the removal of the cause.

Heart Complications.—The heart complications have varied, usually consisting of a slight relaxation of the heart muscle accompanied by diffuse apex beat and soft blowing murmur at the apex, localized or transmitted slightly to the left. This very commonly develops during the second week and disappears without treatment.

An interesting phenomenon to which I have found no reference in the literature on this subject is the uniformly slow pulse occurring in the middle of the first and extending through the second and sometimes into the third week of the disease. This is often so marked as to cause apprehension in the minds of physicians who note it for the first time. A pulse of fifty is not at all uncommon while one of forty is occasionally observed. In one of my cases, a well developed adult, the pulse dropped to thirty-six without any other symptoms manifesting themselves.

In these cases the pulse is full and strong and the muscle tone of the heart is good. It is not overacting, there is no tension on the aortic or pulmonary valves, and no increased tension in the arteries. This condition requires no treatment and may in a measure be attributed to the recumbent position and restricted diet, for it has also been observed in other diseases treated in the same way.

The development of endocarditis is met, if the heart is overacting, by the use of the ice bag locally, morphine in small doses, or chloral and bromides; for feeble heart action, heat locally and such stimulants as strychnine, digitalis, ergot, and adrenalin chloride.

Pericarditis developed in only three of my patients. These were treated by the ice bag, morphine, and stimulants or sedatives as indicated. The salicylates were tried without observable benefit.

Nephritis.—The treatment of this complication is largely prophylactic in our institution as the complication rarely develops among the patients subjected to routine treatment. The methods have been referred to under general treatment and consist of milk diet for three full weeks combined with the use of large quantities of water, the specific gravity of the urine being kept below 1010.

The transient albuminuria which we are taught to expect in the early days of the disease rarely appeared. When nephritis does develop its treatment does not differ from that of any other case of acute nephritis and will therefore not be considered in detail. The hot saline rectal irrigations, vasodilators, and methods for increasing the activity of the skin are depended upon.

The bath which we have used with the greatest

apparent benefit is a combination of the hot air and alcohol vapor bath.

Eyes.—The eyes while not subject to involvement to the same extent as in measles are often slightly affected in the early stages of the disease, producing photophobia, and again in the third week there is often some conjunctivitis with profuse lacrimation. The reason for this late involvement will be understood if we remember that the mucous membranes desquamate as well as the skin.

If the conjunctiva is congested the room is darkened and the eyes are bathed with a cold boric acid solution. If the congestion is persistent or lacrimation is troublesome, the following prescription is helpful:

R Mmimum acetate, ʒi.
Sat. sol. boric acid, ʒi;
A. Sig. Put a few drops in, yes, three or four times daily. (Dr. G. H. BELL.)

Glossitis.—It may develop and occasionally is a distressing symptom. The tongue may become so swollen as to protrude from the mouth and is frequently dry, glazed, painful, and bleeding. This usually occurs about the fourth or fifth day when the tongue is desquamating. The severe inflammation seldom lasts more than forty-eight hours, but during that time the distress can be only partially relieved by the use of an alkaline mouth wash, by holding pieces of ice in the mouth, and by the application of emollients, such as lanolin or petrolatum, directly to the tongue.

Cervical Adenitis.—The treatment is largely prophylactic and consists of thorough disinfection of the nose and throat. When the glands become painful or tender, it is our custom to apply an ice bag over a layer of flannel for forty-eight hours, unless it causes neuralgic pains. At the end of that time, if further treatment is required, hot flaxseed poultices are applied freely and usually with great benefit. In none of our cases has this treatment produced suppuration. In the subsiding stage, resolution seems to be hastened by the application of 25 per cent. ichthyol ointment.

Scarlatinal Rheumatism.—The joint symptoms are often very troublesome. In the cases coming under my observation it was found that the wrist joints were most frequently involved, the knee joints second, and the shoulder joints third. The local condition varied from moderate tenderness without swelling to marked synovial effusion. I have had no cases of suppuration. The name, scarlatinal rheumatism, has been criticised and with good reason; still it seems clear that we sometimes have a true rheumatic poison to deal with.

We have learned to divide our cases with joint symptoms into two groups, those with rheumatic diathesis, and those without a rheumatic diathesis. Cases giving a clear history of previous rheumatic manifestations are usually benefited by the use of salicylates. The others do not respond to this treatment. An ointment containing oil of gaultheria after the following formula has been found helpful.

R Olei gaultheriæ, ʒi.
Oleo albu., ʒi.
M. Adipis benzoati, ʒi.

The actual cautery and immobilization by splints and pressure bandages have been of benefit.

For internal medication in cases without rheumatic diathesis, the most help was derived from the use of saline laxatives and coal tar analgesics (if the heart permitted). Alkalies were tried with negative result.

Anæmia.—The anæmia which accompanies this disease is undoubtedly increased by the restricted diet extending over a considerable period of time. This statement is made advisedly after comparing the blood examinations of cases fed according to the method described in this paper with those kept on a more liberal diet. This disadvantage, however, is more than counterbalanced by the diminished liability to more serious complications. While we resort to the usual remedies, iron, arsenic, and mercury to overcome this symptom, we attach great importance during convalescence to the effect of fresh air and sunshine.

In favorable weather, patients who are able to be out of bed are encouraged to spend several hours daily on the roof where a pavilion furnished with hammocks and reclining chairs has been erected. There, while the fresh air and sunlight are doing their work, they are entertained by the changing panorama on the river. Patients who are not able to get to the roof spend much of their time in the sun parlor where invalid chairs and a well stocked library furnish them with comfort and amusement.

104 WEST FIFTY-FOURTH STREET.

INDIGESTION: ITS SIGNIFICANCE AND DIAGNOSIS.*

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Were we to infer that the stomach is primarily at fault in all cases of indigestion, we would err often and grievously. Our dyspeptic who has lived high, led a sedentary life, and who describes himself as "bilious," may have gallstones, or a beginning cirrhosis of the liver. Again, flatulency and constipation may be due to chronic appendicitis or to a moveable kidney. On the other hand, constipation itself may cause the indigestion. In some cases gastric symptoms are an early indication of failing heart action. Sometimes the correction of an error of refraction is followed by the disappearance of the dyspeptic symptoms.

Perhaps the sharp attacks of pain are due to gallstones, locomotor ataxia, or to arterial sclerosis of the splanchnic arteries. Buch (1), who has made an especial study of the latter condition, finds it of rather frequent occurrence in individuals past forty years of age. The attacks, which usually occur several times a day, are not brought on by food, but appear to be caused by exertion, emotion, and assuming the horizontal position. The pain may radiate to the liver, arms, or shoulders, and not infrequently alternates with attacks of true angina pectoris. The attacks are promptly relieved, according to Buch by diuretics and strophanthus. One should always bear in mind that gastric irritability is often the first symptom of pregnancy. Indigestion may be one of the first signs of a chronic nephritis or of a tuber-

* Read at the annual meeting of the American Medical Association, St. Louis, Mo., 1906.

culous involvement of the peritonæum or lungs. During the past eighteen months I have had twelve patients consult me for stomach trouble, whose gastric symptoms were due to pulmonary tuberculosis. I will give the history of the last one:

CASE.—S. P., aged thirty-three, single, and a school teacher by occupation, consulted me August 14, 1906, because of indigestion. She complained of a sour stomach, and a burning which was more marked before meals. There was no vomiting and the appetite was good. She had considerable headache, easily became exhausted, and had some dull backache high up across the shoulders. At the age of twelve she had had bronchitis, and at twenty-two typhoid. In 1900, while studying hard, she first became conscious of a feeling as though "a load" was in the stomach after meals. She was treated for this in a Boston hospital, and as she had some pains in the right side of the abdomen and in the knees, she was given springs for her arches. The stomach symptoms continued, and she had a dull ache across her shoulders and up the sides of the neck, for which she was treated by an osteopath for nearly a year. In the fall of 1905 she remained several days at a well known sanatorium in Massachusetts, where a specialty is made of gastric trouble. A marked hyperchlorhydria was found, and she was put on their diet of nut products. Not improving materially, in the spring of 1906 she consulted a stomach specialist in Boston, who found a low acidity and prescribed hydrochloric acid. She was not subject to colds and assured me that she had no cough, although I noticed that while she was waiting she had an occasional slight dry hack. Her nutrition was excellent; in fact, she was "plump," and her history pointed so clearly to the stomach that I mentally resolved at first not to examine her lungs. I did, however, and was well repaid for my time. At the right apex the usual signs of early infiltration were detected, and at the extreme left apex there were evidences of slight trouble. The examination of the stomach and its contents was negative, and the diagnosis was made of pulmonary tuberculosis and hyperæsthesia of the gastric mucosa. Subsequently she was examined by two physicians in New York, who concurred with the diagnosis of tuberculosis.

Our errors in diagnosis can be traced to one or more of the following: (1) An incomplete history; (2) failure to make a complete examination; (3) stopping the search for the cause with the discovery of the first lesion; (4) omission of special tests.

The importance of a good history can scarcely be overestimated. Not infrequently it is of more value in arriving at a diagnosis than the examination. It must needs be elicited slowly, due attention being given to the patient's ideas, yet one must not be too ready to accept the patient's diagnosis. Time will not permit the detailed consideration of history taking. The occurrence of hæmatemesis is of great importance, yet one cannot decide from the symptom alone that we have either an ulcer or a carcinoma of the stomach. Occasionally the first symptom of an hepatic cirrhosis is an hæmatemesis due to the rupture of the veins at the lower end of the œsophagus. Several such cases have been operated on for gastric ulcer. The bleeding may have been from an erosion of the stomach (Einhorn) or it may have come from the lungs or throat, and have been swallowed. It may be one manifestation of some grave systemic disease, as leucæmia, scurvy, Hodgkins disease, pernicious, or a severe secondary anæmia. In rare cases it is a vicarious menstruation.

Of course in the vast majority of cases it is due to gastric ulcer.

The examination should vie with the history for thoroughness. The condition of the teeth should always be determined, and a "lead line" on the gums should be sought for. Why this is so often omitted I am at a loss to explain. Not only the abdomen, but the heart, lungs, and urine should be examined. For the abdominal examination the patient should lie with his feet toward the light, the examiner standing at the head during inspection. The presence of emaciation, dilated veins, and flaccid abdominal walls are noted at a glance. If peristalsis is very marked from left to right, the stomach not dilated, and vomiting is present, there is probably an obstruction at the pylorus. I have seen this symptom present in cancer some months before a tumor was palpable.

Inspection may reveal a mass which our hand verifies. It may or may not move with respiration. Tumors of the stomach do not have as wide an excursion as those of the liver. It is a serious mistake to consider all masses in the abdomen malignant tumors, for our chagrin is complete if at a second examination, which has been preceded by a brisk cathartic, we fail to find our "cancer" of a few days before. An opinion of an abdominal mass should be withheld until catharsis has been free, and whenever possible more than one examination should be made. Other conditions confused with carcinoma are: (1) The induration about an ulcer; (2) the enlarged gland in the gastrocolic ligament which is sometimes palpable, especially in gastric ulcer; (3) enlarged glands along the aorta; (4) the head of the pancreas, which is sometimes palpable in an emaciated patient, particularly if gastropnoxis is present; (5) a moderately enlarged gallbladder may be confounded with an adherent tumor of the pylorus; (6) benign tumors of the stomach.

Spots of localized tenderness suggestive of ulcer should be sought for over the epigastrium and at the side of the twelfth dorsal vertebra. Splashing occurring eight to ten hours after a meal suggests insufficiency; if below the umbilicus either dilatation or gastropnoxis. Determining the condition of the appendix, the size of the liver, the mobility of the kidneys are all important steps in the examination. When the attacks of pain are sudden and sharp the knee jerks, pupillary reaction, and the blood pressure should be studied.

The diagnosis of stomach condition without the use of the stomach tube has been likened by Knapp to fitting glasses without testing the eyes. While the history and physical examination are usually of much assistance in arriving at a diagnosis, there are nevertheless a considerable number of cases where we are groping in the dark if we depend upon them alone. I refer to those patients who complain of a "fulness" and distress, amounting sometimes to pain after meals, associated with some belching of gas and perhaps occasional vomiting. Such a patient undoubtedly has a certain degree of stasis, but whether it is associated with a chronic gastritis, a gastric ulcer, a beginning carcinoma, and atonic dilatation of the stomach or a gastropnoxis, we cannot say unless we employ the stomach tube. Yet we hear the diagnosis of chronic gastritis, ulcer, cancer,

and nervous dyspepsia often are the four favorites) glibly made, usually from the history alone.

Providing there is no contraindications such as an aneurysm, a badly compensated heart lesion, or a recent hæmatemesis, the tube should be used in every case of dyspepsia which persists after the patient has been instructed what, when, and how to eat, and the bowels have been regulated (cathartics rarely being indicated).

Lavage enables us to ascertain whether stasis is present or not, and is the only means of determining the presence of a chronic catarrh. Having determined these two points, the patient lies down with the tube still in the stomach, and that viscus is inflated by the gentle compression of the bulb of an atomizer, which is joined to the end of the tube. The double bulb such as is used with the cautey has given excellent satisfaction, as the tubing is of sufficient length to enable one to sit by the patient's side and observe the inflation. This method is vastly superior to the one of having the patient drink separately the two parts of a Seidlitz powder, for we are enabled to inflate slowly, watching it the while, and can discontinue the moment that the patient feels uncomfortable. By disconnecting and allowing the air to escape, we can verify our deductions by reinflating. The stomach should be inflated once with the patient standing, for a gastropnoxis is frequently not demonstrable in the recumbent position.

This procedure furnishes us not only with a means of ascertaining the size and position of the stomach, but it affords us a method of determining whether a certain mass is connected with the stomach or not. A tumor of the lesser curvature and posterior wall is no longer palpable when the stomach is distended with air, while a tumor of the left lobe of the liver is pressed up against the abdominal wall and is more prominent. As the stomach is inflated, tumors of the pylorus, which are not adherent, move downward as a rule. A wide excursion of the mass makes the prognosis more favorable as adhesions do not exist, and the complete removal may be hoped for.

The position of the stomach can be determined with the greatest accuracy by taking an x ray photograph immediately after the injection of a suspension of bismuth subnitrate. It was formerly thought that this would afford a means of acquiring the desired information without the use of the stomach tube, but Pancoast (2), who has seen poisonous effects result when the bismuth was not removed, advocates lavage as soon as possible after the picture is taken, if over one ounce is used. Sufficiently accurate results can be obtained in the majority of cases by inflation in the upright position.

Einhorn (3) has suggested a most ingenious method for studying the digestive function of both stomach and intestines. He fastens to small glass beads of different color bits of food stuffs, some of which are known to be digested by the gastric juice, others by the pancreatic, and still others by the intestinal juices. These beads are recovered from the stool, and when digestion is perfect they are empty. The persistence of the food indicates impaired digestion in one or more parts of the tract.

The stomach's function is most commonly determined by the examination of so called "test meals," which are of two sorts. The motility meal is re-

moved in from eight to twelve hours. The other meal spoken of usually as the test breakfast is removed at the expiration of one hour. It is impossible in a paper of this length to more than mention the data thus acquired. We ascertain the presence of stasis by the recognition of food, either macroscopically or microscopically, at a time when the stomach should be empty and by the presence of undue fermentation in the fasting stomach contents. Occult blood (that is, blood not visible to the eye) is tested for. The presence of free and combined hydrochloric acid, the total acidity, and the amount of gastric digestion are determined.

We will now consider the diagnostic features in some of the more common of stomach disorders: (1) Gastrectasis or ectasy; (2) ulcer; (3) cancer; (4) hyperæsthesia gastrica; (5) nervous dyspepsia.

1. *Gastrectasis or Ectasy*.—By gastrectasis or ectasy we mean that the stomach does not empty itself in the usual time. It may be due to simple atony, or it may be caused by an obstruction at the pylorus; it may be of slight degree or it may be severe. The slighter forms due to poor musculature are very common. Atony, moreover, is frequently associated with cholelithiasis. It is of the utmost importance to determine at the outset whether stasis exists or not, for in most cases that knowledge proves to be the foundation for our diagnosis and treatment. Unless stasis exists Mayo does not advise gastro-enterostomy for gastric ulcer, yet how often that operation is performed without demonstrating its presence. When ectasy is present, its cause should be determined. As has been stated a dilated stomach is differentiated from gastropnoxis by inflation. A chronic catarrh frequently accompanies the former condition, but is seen less often with the latter. Occult blood is present in ulcer and cancer, but absent in atonic dilatation. In obstruction at the pylorus there will be no dilatation as long as the muscular force is sufficient to overcome the obstruction. The patients suffering from gastrectasis complain of a feeling of fulness and pressure after meals, belch gas, and are prone to heart burn. Vomiting only occurs when the condition is advanced and usually indicates obstruction at the pylorus. Sometimes headache and vertigo are complained of, and in advanced cases tetany may occur.

2. *Chronic Gastric Ulcer*.—The clinical picture of this condition is subject to considerable variation. Pain is the most common symptom, and it is experienced soon after the ingestion of food. It may be localized or go through to the back. Sometimes it is relieved by pressure, and it regularly stops when orthoform (methyl ester of metaamidoparacetylbenzoic acid) is administered. There is usually a distinct point of tenderness over the epigastrium, to the left of the median line in a considerable number of cases, and often at the left of the twelfth dorsal vertebra. Vomiting is present in some cases; it occurs in from one to three hours after a meal, and is followed by relief. Hæmatemesis is present in only about thirty per cent. of the cases. Gastric ulcer is not a contraindication to the use of the stomach tube unless there has been an hæmatemesis within two weeks (Riegel). The stomach is frequently empty one hour after a test breakfast. The acidity may be normal, increased or diminished. In 132 cases Ewald (4) found hyperacidity in only 34.1 per

cent., Wersing (5) found that more than half of 116 cases had normal acidity, and Howard (6) discovered hyperchlorhydria in but 17.6 per cent. of 54 cases and a subacidity in 26.4 per cent. Free hydrochloric acid was absent only once in over 300 cases. Occult blood can be detected in the stomach contents and stool, although more than one examination may be necessary, as the bleeding is not continuous. Hemmeter has detected gastric ulcer by means of a skiagraph. The x ray picture is taken about ten hours after the ingestion of a large dose of bismuth. Sufficient bismuth adheres to the ulcer to cast a shadow.

3. *Cancer*.—At the Mayo clinic (12) Graham obtained a history of ulcer in 60 per cent. of 145 cases of gastric carcinoma. He says: "Middle age, with or without history of gastric disturbance, anorexia, distaste for meat, a craving for highly seasoned foods, progressive emaciation, and debility, these symptoms should make us suspicious. Loss of gastric motility, vomiting, gnawing discomfort amounting to pain, these come near being positive, even although no tumor is felt." If the cancer be at the pylorus, examination of the contents of the fasting stomach reveals stasis, occult blood, and usually a hypoacidity or achylia. Unfortunately, however, cancer is sometimes met with where the acidity is normal or increased. I have seen free hydrochloric acid of 50 with a total acidity of 117 in a far advanced case. There are cases where carcinomatous change takes place in an old ulcer. Ziegler (7) considers the development of gastritis and disturbances of motility, in a case of supposed functional hyperchlorhydria which does not respond to treatment, as being very suspicious of carcinoma.

Cancer of the lesser curvature does not cause symptoms of obstruction, and may exist for a long time without interfering with digestion and assimilation, so that patients do not become emaciated [Tansini] (8). Kuttner (9), in Ewald's clinic, has frequently seen a left sided pleurisy in conjunction with cancer of the lesser curvature. He, moreover, has observed that obstinate itching of the skin and putrid smelling eructations are often present in gastric carcinoma. The absence of free hydrochloric acid occurring with stasis of food and occult blood, argues strongly for cancer at the pylorus, but an anacidity considered by itself may be due to cancer in some other part of the body, (Moore [10]) atrophic gastritis, lead poisoning, or a neurosis. Seidelin (11) studied the acidity in seventy individuals between the ages of fifty and seventy, and found free hydrochloric absent in 40 per cent., normal in 10 per cent. and very slight in the remaining 50 per cent. Physicians are prone to attach undue importance to the amount of hydrochloric acid present, and not enough to the other findings.

From the foregoing it is evident that notwithstanding our careful history, thorough physical examination, and painstaking study of the gastric contents, there are certain cases in which we cannot differentiate between chronic ulcer and carcinoma. The diagnosis in these border line cases must be made by the surgeon on the operating table. It should always be borne in mind that the more perfect the clinical picture, the graver the prognosis. But exploratory laparotomy should only be undertaken when all other means of diagnosis have been

unavailing. Often, oh so often, that expedient is advised before one has half tried to make a diagnosis by other means. The more carefully we study our patients and the more we perfect ourselves in the special methods of diagnosis, the less frequently shall we have to resort to exploratory laparotomy. The following case shows the value of the "aids to diagnosis" and demonstrates that we cannot exclude cancer of the stomach because the patient is below forty, not cachectic, and has no palpable tumor.

CASE.—M. F., aged thirty-eight, single, and a servant, consulted me June 1, 1906, because of stomach trouble. Her health had been excellent until two to three months previously. At that time she lost her appetite and became flatulent. Slight pain below the sternum was experienced when in the recumbent position. Pain, however, was not a prominent symptom at any time. She had been vomiting daily for the twelve days prior to consulting me. The vomiting was preceded by nausea but not pain. Diet had consisted of liquid food, and the bowels were constipated. Had not lost strength. She was above the average height, large of frame and in an excellent state of nutrition. Abdominal examination negative save for slight tenderness just below end of sternum. Stomach normal in size and position, no mass palpable. Eleven hours after a motility meal nearly 1,000 c.c. of very dark liquid was obtained which contained food particles and a little free hydrochloric acid. She entered the Hartford Hospital where she was observed for a few days. The vomiting became less frequent under lavage, although it did not completely cease. Pain was inconsiderable, and only moderate tenderness could be elicited below the sternum. No tumor was ever felt. Ulcer of the stomach and ulcer of the duodenum were at first considered as possible diagnoses. A number of gastric analyses demonstrated the persistent absence of free hydrochloric acid, and the presence of occult blood. There was marked insufficiency and occult blood was detected in the stools. Gastric ulcer was excluded because of the absence of pain, the absence of distinct tenderness, and the persistent absence of free hydrochloric acid. Ulcer of the duodenum was excluded for the same reasons that gastric ulcer was ruled out, and in addition because vomiting is not common with that condition. The diagnosis of cancer of the posterior wall and pylorus was made and laparotomy revealed a carcinoma extending from the pylorus along the lesser curvature to within an inch of the œsophagus.

It is truly disheartening to realize that cancer may become inoperable in three months time and that the local symptoms and constitutional disturbance may be so slight. Had her stomach contents and stools been examined at an earlier date, it is indeed possible that the diagnosis might have been made at a time when an operation would have been of avail.

4. *Hyperæsthesia gastrica* is a term that is used to designate that condition formerly spoken of as hyperchlorhydria, for it appears that it is an irritable condition of the mucus membrane which causes the symptoms, rather than an excess of hydrochloric acid. Von Noorden (13) has reported four cases of neurasthenia without stomach symptoms, all of whom had hyperchlorhydria, and all who make frequent examinations of the stomach's contents meet with cases whose symptoms suggest hyperchlorhydria, but in whom the acid is within the so called normal limits, or diminished in amount. The symptoms have even occurred with achylia gastrica. Patients complain of a "hungry feeling," or "a burning" or "a gnawing," amounting some-

times to pain, occurring some two or three hours after meals—i. e., at the height of digestion. This is in contradistinction to the pain of ulcer, which comes on immediately after the ingestion of food. Pain coming on at night suggests a continuous hyperpersecution. The distress dependent upon hyperæsthesia gastrica is relieved by food and alkalis, but not by orthoform. Blood is not present in the gastric contents nor in the stool. Hyperchlorhydria is frequently associated with cholelithiasis.

5. *Nervous Dyspepsia*.—There are usually a number of neurotic symptoms apart from those referable to the digestive apparatus. Pain is usually complained of, and they experience a sense of satiety after the first few mouthfuls. These patients are prone to flatulence and are nearly always constipated. Food that is eaten with impunity on one day will cause severe pain at another time. In other cases the stomach empties itself with undue rapidity. Dubois, in his extremely interesting book, *The Physical Treatment of Nervous Disorders*, makes the startling statement that 90 per cent. of dyspeptics are psychoneurotics, and should have nothing to do with restricted diet and stomach medication. While there are undoubtedly many cases of nervous dyspepsia who are being treated for imagined organic lesions, yet too frequently the diagnosis is used as a cloak for ignorance.

There is probably no class of invalids in whom less attempt is made at an accurate diagnosis than in the dyspeptics. They enter the office with a tale of woe concerning their indigestion and they are given a prescription for some much advertised preparation which "cures all kinds of indigestion," when an inspection of the mouth might have revealed a few scattered teeth, or the passage of the stomach tube have demonstrated the food of former days. Rational therapeutics can only follow careful diagnosis.

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5. Wirsing. *Archiv für Verdauungskrankheiten*, xi, No. 3, 1905.
6. Howard. *American Journal of the Medical Sciences*, December, 1904.
7. Ziegler. *Zeitschrift für klinische Medizin*, liii, 1904.
8. Tansini. *Riforma medica*, xxii, No. 14, 1906.
9. Kuttner. *Berliner klinische Wochenschrift*, xliii, Nos. 25, 26, 1906.
10. Moore. *Lancet*, 1905, i, p. 1121.
11. Seidelin. *Hospitalstidende*, 1903, No. 47.
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417 ALBANY AVENUE.

Medical Students in the United States.—*Science*, December 21, 1906, gives a list of twenty-three of the leading United States universities, from which we see that there are matriculated 4,903 students in the medical faculties. The University of Pennsylvania leads with 594 students, while the University of California has the smallest number, 54. New York has 448; Columbia, 352; Syracuse, 150; Cornell, 336. The others are given as follows: Northwestern University, 500; Illinois, 488; Michigan, 423; Harvard, 296; Johns Hopkins, 264; Minnesota, 196; Yale, 155; Virginia, 133; Nebraska, 132; Kansas, 107; Indiana, 65; Missouri, 65.

THE VALUE OF DIFFERENTIAL LEUCOCYTE COUNTS IN MEDICINE.*

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New York,

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Surgical science is wrestling with the question of the value of the differential leucocyte count. Temporarily the medical aspect of the value of differential leucocyte counts has been neglected. No field of clinical research is fraught with greater significance than the estimation of the percentages of the various types of leucocytes. The counting of red corpuscles and the determination of hæmoglobin are of some value in manifesting the variations in anæmia—from the simple moderate secondary anæmia to the pronounced blood alterations in that type of anæmia to which the term pernicious is applied.

The estimation of the total number of leucocytes is of more value, suggesting as it does the resistance of the patient to various infections. High leucocyte counts may be first evidence of an unsuspected leucæmia. Of most worth from a diagnostic point of view is the determination of the percentages of the various types of leucocytes. In low leucocyte counts, as well as in high counts, a differential count is imperative for the careful practitioner. A leucocyte count of 60,000 may be the result of a malignant disease or lymphatic leucæmia. A differential count alone will determine the nature of such a high count. In malignant disease the polynuclear neutrophiles would be relatively increased, while lymphatic leucæmia would present an increase of the lymphocytes. A low leucocyte count of 6,400 may or may not be normal. With 6,400 leucocytes present a differential count might show some type of leucocyte increased beyond its normal percentage. With 6,400 leucocytes, there might be a lymphocytosis as in typhoid fever or serum disease. There might be a relative polynuclear neutrophilic count of 95 per cent., as in virulent pneumonia with low body resistance or gangrenous appendicitis. There might be an eosinophilia of 12 per cent. as in ankylostomiasis, or of 46 per cent. as in trichiniasis. Hence, it is quite apparent that for proper interpretation of the leucocyte estimation a differential leucocyte count is necessary.

Correct interpretation of all counts of leucocytes, total or differential, depends upon careful attention to the clinical history of the patient. Blood examinations are not to be regarded as isolated findings.

Who would diagnosticate nephritis from the mere presence of albumin in the urine? Who would diagnosticate carcinoma of the stomach from a positive test for blood in the fæces? The albumin might be due to a cystitis or residua from a nocturnal emission. The blood in the fæces might be due to a fistula or dysentery, as the clinical history would show.

A marked secondary anæmia may be due to rhachitis, tuberculosis, syphilis, or malignant disease, while the red corpuscles' picture of the anæmia may be the same for all. The leucocyte formula varies during the evolution of a disease. Without reference to the clinical status of the patient erroneous judgments might arise in the interpretation of the

* Read before the Medical Society of the Borough of the Bronx, January 9, 1907.

differential count. The lymphocytosis of typhoid fever may give way to a neutrophilic leucocytosis. To interpret the altered leucocyte picture is impossible without following the history of the patient.

A single differential count is rarely pathognomonic, as is the finding of plasmodia. The presence of myelocytes does not mean myelogenous leucæmia. There may be leucocytosis accompanied by myelocytes, as in diphtheria.

It must be constantly borne in mind that the differential leucocyte count forms a symptom just as much as the registration of temperature. A single temperature of 103° does not make a diagnosis of typhoid, pneumonia, or measles. It is simply one symptom going to make up the clinical picture of the disease.

The blood is affected by all diseases. The effect of diseases upon the blood is revealed by the examination of the blood. The rash of scarlatina is not scarlet fever. It is merely the effect upon the skin of the unknown cause of scarlet fever. The differential leucocyte count gives expression to the alteration of the leucoblastic tissues, owing to the etiological factor of the disease under observation. We are at present unacquainted with the rules governing such alterations, but regard them as the result of varying chemotaxic influences. As frequent temperatures are often of immense value in establishing a diagnostic fever curve, so repeated differential leucocyte counts are frequently serviceable in determining the leucocyte curve of any disease. The value of blood examinations as a whole is frequently underestimated, because of the failure to learn the whole story from a single blood examination.

In the interpretation of differential leucocyte counts the age of the patient is especially important. The percentages of the various types of leucocytes do not approximate the percentages normal in adults before the ninth year. At one year the lymphocytes average about 54 per cent., the neutrophils only 35 per cent. In adult life the neutrophils form 60 per cent. and the lymphocytes 35 per cent. of the total leucocytes. Hence, 65 per cent neutrophils in a child, six months old, may represent a pronounced leucocytosis, whereas it would be perfectly normal in an adult.

To emphasize the value of the differential leucocyte count in medicine, it is but necessary to consider some of the conditions where such a count is of service. In children the leucocytosis tends to revert to the infantile type, wherefore conditions attended by lymphocytosis are quite numerous. As I have shown elsewhere, mumps exhibits a diagnostic lymphocytosis. The lymphocytes, large and small, are absolutely and relatively increased from the first day of the disease. The lymphocytosis is marked when the glandular swelling is as small as a hazel nut. The lymphocytes in my series averaged 60 per cent. With the onset of a complication like orchitis or mastitis the lymphocytes drop and the neutrophils rapidly increase. Such a lymphocytosis excludes an adenitis secondary to a carious tooth, as in such adenitis the neutrophilic leucocytes are relatively increased in the leucocyte formula. When glands are enlarged all over the body and Hodgkin's disease or leucæmia becomes the question, a differential count determines the answer.

Hodgkin's disease shows no variation of the leucocyte percentages, while lymphatic leucæmia presents an immense relative and absolute increase of the lymphocytes.

In paroxysmal coughs of long duration or showing few physical signs, a differential count may clear up the diagnosis. Pertussis exhibits a relative and absolute lymphocytosis from its very onset. The lymphocytosis is very marked in the catarrhal stage, previous to the development of the diagnostic whoop. The lymphocytosis of pertussis distinguishes it from coughs due to pharyngitis, laryngitis, tracheitis, bronchitis, or catarrhal influenza.

Typhoid fever affords an excellent diagnostic blood picture. No disease is more protean in its mode of onset and symptomatology, and its existence is often diagnosed by exclusion. As a rule, the blood in typhoid gives positive information before the roseola appears, before the Widal reaction, before the Diazo, before it is possible to establish a fever curve. There is a leucopenia. This leucopenia may be determined during the first week. Occasionally there may be a slight leucocytosis the first few days, but in 90 per cent. of the cases of typhoid seen in the first week the total number of leucocytes is subnormal. The number of leucocytes may vary from 1,000 to 6,000. "The more severe the typhoid intoxication, the lower is the count of leucocytes" (Ewing). In addition to the pronounced leucopenia, during the period of pyrexia, the lymphocytes progressively increase in percentage, while the neutrophils progressively diminish until the sixth week is past. This refers, of course, to uncomplicated typhoid. In distinguishing typhoid fever from almost every inflammatory process, the lymphocytosis is most valuable. Suppurations are generally attended with leucocytosis, an absolute and relative increase of the neutrophils, at least with a relative neutrophilic leucocytosis. Pneumonia, appendicitis, cerebrospinal meningitis, post-operative and puerperal sepsis are characterized by a neutrophilic leucocytosis in contradistinction to the lymphocytosis of typhoid fever. Hence, given a patient with obscure symptoms including an irregular fever, a leucopenia with relative lymphocytosis argues strongly for typhoid. As the Widal reaction is absent in 5 per cent. of cases and may not appear until after the middle of the second week or later in a large percentage of cases, the differential count becomes an important symptom in establishing the diagnosis of typhoid fever.

In many diseases the diagnostic value of the count does not depend upon a lymphocytosis, but upon the relative and often absolute increase of the eosinophiles, a condition of eosinophilia or hypereosinophilia. Trichiniasis presents an eosinophilia most valuable for diagnosis. The eosinophiles are increased relatively and absolutely. They may reach as high as 68 per cent. of all types of leucocytes. This eosinophilia is an important symptoms in differentiating trichiniasis from such conditions as neuralgia, neuritis, myositis, pes planus, muscular fatigue, and typhoid fever.

Intestinal parasites do not show a constant relative eosinophilia. A case of prolonged anaemia, however, showing a persistent eosinophilia demands an examination of the stools for parasites or their ova. Uncinariasis may show 70 per cent. eosino-

phages. Oxyuris and ascaris average about 10 per cent eosinophiles. Leukemia may or may not show an increase. Bothriocephalus rarely reveals an eosinophilia.

Bronchial asthma exhibits a marked eosinophilia. During an asthmatic paroxysm the eosinophiles may rise as high as 55 per cent. The average during the paroxysm is between 15 per cent. and 20 per cent. During the interval between paroxysms, the eosinophiles remain slightly above the average. Cardiac or renal asthma fails to induce an eosinophilia. In determining the question of malignancy of a tumor eosinophilia points toward malignancy.

Though I desire to lay especial stress upon the diagnostic value of differential counts, it seems imperative to at least mention the prognostic value of eosinophiles. In most infectious diseases accompanied by neutrophilic leucocytosis there is a diminution of eosinophiles. The return of eosinophiles to the circulation after a primary decrease or absence is of good prognosis. The reappearance of the eosinophiles foretells approaching convalescence. On the other hand, a sudden fall of the eosinophiles during the course of an infectious disease where they were previously present suggests some complication which is interrupting convalescence. This prognostic value of the eosinophiles holds true in pneumonia, typhoid fever, appendicitis, and septic processes. Generally speaking, when mentioning leucocytosis we refer to the condition of the blood where there is a relative or absolute increase of the neutrophilic leucocytes.

Considering the differential count alone in catarrhal appendicitis, the relative increase of the neutrophiles is of value in excluding gallstones, renal calculus, Dietl's crises, and typhoid. In coma, the differential count may serve to distinguish hysteria, alcoholism, narcotism from meningitis, brain abscess, or postepileptic coma. The former, hysteria, alcoholism, and narcotism, are not accompanied by the neutrophilic leucocytosis attending the latter diseases.

The neutrophilic leucocytosis in pneumonia is of especial value in cases of central pneumonia where physical signs are few, indistinct, unsatisfactory, or lacking. The neutrophilic leucocytosis positively excludes typhoid, malaria, incipient tuberculosis, and influenza. The neutrophiles increase at the onset; in fact, begin as the initial chill passes off. The neutrophiles do not decrease during a pseudo-crisis. Shortly before or after the real crisis, the leucocytes begin to fall, and within twenty-four hours after the crisis the cells approach normal. If the neutrophiles remain high or increase after the crisis some complication is to be suspected, like empyema, abscess, or gangrene. The neutrophiles form 80 per cent. to 95 per cent. of the leucocytes at the height of the leucocytosis in pneumonia. So constant is this relative leucocytosis that its absence is strong evidence against the existence of pneumonia.

As my subject is merely the value of the differential leucocyte count, I shall not discuss the interrelation between the total leucocyte count and the relative increase of the neutrophiles. Sufficient to merely state that the increase of the relative neutrophile percentage is in direct proportion to the severity of the infection, while the absolute count of leucocytes indicates the degree of body resistance.

From this rather general cursory view of a small part of our subject, it is quite manifest that the differential leucocyte count affords more suggestive information than any other procedure in blood analysis. It, indeed, gives light on pathological conditions in all portions of the body, and is the only clinical examination which does afford diagnostic data regarding pathological processes in any part of the body.

E. R. HENDERSON.

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LETTER FROM LONDON.

The British Birth Rate—The New Principles of Public Health—The Royal Commission on Divorce.

LONDON, February 16, 1907.

Not long ago the British Pharisee used to give thanks that he was not even as the wicked Frenchman, who, having carried race suicide to a fine art, was gradually eliminating himself from this universal frame of things. It was implied that in this land of ours, on which the blessing of Heaven falls as steadily as the rain which raineth every day, such iniquities had no place. John Bull read his Bible and, in defiance of the political economist, increased and multiplied and sent his offspring to people the empire on which the sun never sets. And all the time he has been the victim of a fond imagination. The first notes of warning from the statisticians told us that the birth rate was stationary; but it turns out that it has been steadily falling for at least forty years. Dr. J. W. Ballantyne, a distinguished obstetrician of Edinburgh, in a recent address, gave some figures which place the unpleasant truth in a strong light. The birth rate for England and Wales was 35.2 per mille for the decade 1865-'75; for the next decade it was 34.7; in the next (1885-'94) it fell to 31.2; in the period 1895-'04 it had sunk to 29. In Scotland matters are still worse. In 1871 the natality in Edinburgh was 34.8, almost the same as that of England and Wales at the same time; in 1881 it was 32.2; in 1881, 28.2; in 1901, 24.99; in 1905, 22.99; and in 1906, 22.41. It is only now that the full gravity of the position is beginning to be recognized. To grasp the significance of the movement we must consider that in 1881, when the population of the Scottish capital was, in round numbers, 228,000, the number of babies born was 7,360; in 1905, when the population had increased to 336,000, the number of births was 7,741, whereas if the rate had been maintained it should have been 10,846. In 1906 the number of babies born was 7,042, a number actually less than that of 1881, although the population has largely increased. There was, therefore, a shortage of considerably more than 3,000 babies. It should be stated, however, that in the matter of a falling birth rate, Edinburgh stood lower than any large town in Great Britain, with the exception of Bradford. In 1905 the birth rate for London was roughly 27 per mille; for Dundee, 28; for Manchester, Birmingham, Aberdeen, and Leith, 29; for Glasgow and Greenock, 30; and for Liverpool, 33. Nor can we find comfort for the falling birth rate in a corresponding fall of the death rate. The latter has fallen, it is true, but with altogether dis-

proportionate slowness. And the worst of it is that, although during the past half century there has been a reduction of more than fifty per cent. in the number of deaths between the ages of five and twenty-five, with a notable decrease between twenty-five and thirty-five, the infantile death rate is still practically what it was before the advances of hygiene of which we are so proud. In the *Report of the National Conference on Infantile Mortality* held in London in June, 1906, it is stated that in the twenty years which ended in 1874, out of every 1,000 children born alive in England and Wales, 153 did not complete their first year, while in the twenty years which ended in 1904 the ratio was 148 per 1,000. We must be thankful for small mercies; but the improvement indicated by the difference between 153 and 148 is scarcely sufficient to console the hygienist or the patriot. The situation, expressed crudely, is that, while fewer babies are born, they die off in the first year of life as quickly as before. When one adds to this the fact that the number of still births and abortions is increasing, it will be seen that our "teeming millions" are becoming a vanishing quantity. There is no general registration of still births, and it is therefore impossible to give precise figures. But local statistics relative to Yorkshire furnish a tolerably firm basis for an approximate estimate. Dr. Kaye found that, while in 1901 there were 47.6 still births to a 1,000 live births, the number steadily increased till in 1905 it was 56.3. If these figures are applied to England and Wales, they may be taken to show that the number of still births had grown from 44,270 in 1901 to 52,350 in 1905, an increase of over 18 per cent., while the total live births have decreased in actual numbers. From all this it is clear that if John Bull is not to disappear from the face of the earth—which he has been inclined to look upon as his by the grace of God—he will have to turn his serious attention to the conservation of his race.

The University of Glasgow has made an interesting new departure in the choice of a principal. Hitherto for the four centuries and a half of its existence it has had a clergyman as its official head. Now it has elected to have a member of the medical profession. Dr. Donald McAlister, the new principal, has for many years taken a prominent part in the academic life of the University of Cambridge. A Scot by birth, he won the highest distinctions in the schools, including the much coveted honor of senior wrangler. He has been director of medical studies at St. John's College and Linacre lecturer on physics in the university. He translated Ziegler's well known work on *Morbid Anatomy*, and was for a long time joint editor of the *Practitioner*. He was also Goulstonian lecturer, and the first Croonian lecturer at the London College of Physicians. But he has always been more of an administrator than a practical physician. As president of the General Medical Council, which controls medical education and looks after the morals of the profession, he has shown a statesmanlike breadth of view, together with a mastery of detail which makes him an ideal chairman of such an assembly. Fortunately, his acceptance of his new office at Glasgow does not necessitate his retirement from the General Medical Council. As principal of the Glasgow University he cannot fail to do the highest credit both to the

body which has chosen him for its head and to the profession of which he is a conspicuous ornament. It is a noteworthy coincidence that the University of Edinburgh has also for its principal a member of the medical profession, Sir William Turner, formerly professor of anatomy, and Dr. McAlister's predecessor in the presidency of the General Medical Council.

The Vivisection Commission has this week issued its first report. There is nothing in it beyond the expression of the commissioners' opinion that it is desirable to publish the evidence so far taken. That evidence fills a solid blue book of one hundred and fifty-eight large double column pages of small print. It largely consists of statements by government officials explaining the machinery of the Vivisection Act and the manner in which it works. The evidence shows the care taken in the granting of licenses and certificates to persons wishing to make experiments and the strictness with which their work is inspected and controlled by the Home Office. A good deal of evidence has been given as to the usefulness of animal experimentation in veterinary practice. One or two witnesses on the "anti" side have exhibited the weakness of their cause, their statements breaking down under cross examination; even their sympathizers on the commission were clearly taken aback by the recklessness and irresponsibility of their charges. But the decisive battle is yet to come.

Therapeutical Notes.

The Purgative Action of Gentiopicroin.—G. Tanret points out the fact that gentiopicroin possesses marked purgative effects. Its action upon the hæmatozoa of malaria is explained by its bactericidal power. Before the general use of cinchona, gentian was largely employed as a febrifuge, and it is still used for this purpose in Corsica, where it is indigenous. Although less efficient as an antiperiodic than quinine, it still is sufficiently active to serve as a good substitute when the latter cannot be used.—*Journal de médecine*, January 6, 1907.

Sterilized Modified Milk as a Cause of Infantile Scorbutus.—This disease is of rather rare occurrence in France. J. Comby (*Bulletins et mémoires de la Société médicale des hôpitaux de Paris*, January 17, 1907) asserts that it can be traced almost exclusively to the food of the child. Both commercial sterilized milk and proprietary foods have been incriminated. The treatment is to change the diet to fresh milk, simply boiled, with three teaspoonfuls of orange juice daily, and a purée of potatoes. He does not advise against the use of extemporaneously sterilized fresh milk, but against the commercial, modified sterilized milk, and milk foods, when used to nourish the child exclusively.

Physiological Salt Solution in the Treatment of Ulcers of the Skin.—Following the method of Réclus, who employed hot water in the treatment of ulcers, Veyrassat (*Revue médicale de la Suisse romande, Bulletin général de thérapeutique*, May 8, 1906) has used hot salt solution (7 per mille). The bag of a fountain syringe elevated to 1.50 metres (about six feet) gives sufficient force for the stream, which is directed upon the entire surface of the ulcer.

and especially on its edges. The temperature of the solution should be 50°C. , or 122°F. After the irrigation has cleansed the ulcer, a compress of gauze wet with the same solution is applied and at the same temperature. As long as the ulcers are unhealthy the irrigations are repeated daily, as they clean and granulate, the treatment is given less frequently, say, every two or three days.

Salicylic Acid Treatment of Rheumatismal Diabetes. Latham (*Bulletin Société de médecine et pharmacologie*, No. 47; *La Tribune médicale*, January 12, 1907) distinguishes two varieties of diabetes, the diabetes arising from a nervous disorder acting upon the hepatic function and the diabetes arising from a nervous disorder affecting the muscular function. To the latter form the name of rheumatismal diabetes has been given. The author believes that the introduction of salicylic acid into the organism arrests the formation of lactic acid as well as that of glucose. This theory has been made the subject of a recent monograph by Holden. The first effect of the salicylic acid is to diminish the polyuria; the sugar is reduced secondarily. If it does not disappear completely, at least the clinical manifestations of the diabetes are very rapidly diminished. The following combination is recommended:

R Acidi salicylici,8 grammes;
Sodii bicarbonatis,4 grammes;
Ammonii carbonatis,4 grammes;
Aque,30 grammes.
Finally, when effervescence ceases, add

Aque,300 grammes.

M. Take three spoonfuls daily, in wine or orangeade.

In addition to those signs which are habitually furnished by the rheumatic diathesis and the recognition of which permits the assigning of a diabetic case to one or the other of these categories, the author observes that in the rheumatismal form the urine contains a substance that dissolves the precipitated copper oxide, which necessitates the use of an extra large quantity of the cuproalkaline solution, in making the urinary test, than is required in a case of hepatic diabetes. The salicylic treatment constitutes the specific treatment of the rheumatismal diabetes.

The Medical Treatment of Appendicitis.—Professor Albert Robin (*Bulletin général de thérapeutique*, January 30, 1907), in a recent clinical lecture, opposes the use of opiaes in a case of appendicitis. He regards opium as a dangerous agent, as it causes immobility of the intestine and favors coprostasis, with retention in the cæcum of irritating and toxic matters. He advises the use of purgatives. The patient is kept in bed, with a liquid diet, and purged at once with castor oil or with calomel. When there is a large impaction, the latter is to be preferred, as its action is more mild than the oil. He gives:

R Hydrarg. chloridi mitis,0.40 gramme.

S. To be divided in four papers, and given at intervals of one hour, until all are used.

Castor oil is usually given in 30 gramme (or one ounce) doses. To modify its action, one or two drops of laudanum, or a centigramme of extract of belladonna, is advisable. The ice bag should not be applied to the abdomen before the purgative has

acted, otherwise it will retard and reduce its effect. When the bowels have been cleared, the ice poultice may be applied. If at this time there are signs of gastric hypersthenia (hyperchlorhydria) saturation powders may be given, consisting of:

R Codeine,0.005 gramme;
S. To be given whenever there is sickness or disorder of the stomach.

S. To be given whenever there is sickness or disorder of the stomach.

About twelve hours after the purgative action has ceased, an intestinal irrigation is given, and this is to be repeated once or twice daily. It consists of two pints of boiled water, warmed to a temperature of 38°C. , and to this is added one to three table-spoonfuls of oil of olives and five or six drops of tincture of sage. These injections should be made without pressure, the bag of the fountain syringe, being not more than two feet (0.50 metre) above the level of the bed. It should be given slowly through a soft rubber rectal tube, introduced as far up as possible. He also advises, before applying the ice bag when the purgative has finished its action, to anoint the right flank with the following:

R Mercurial ointment,40.0 grammes;
Extract of belladonna,10.0 grammes;

If there is much pain, the patient will get relief from the following pills:

R Codeine,0.02 gramme;
Extract of gentian,0.10 gramme.

M. For one pill. Make 30.

S. Take two or three pills daily.

If the intestinal evacuation has not been complete, as shown by palpation of the abdomen, or if the irrigations bring away fæcal masses or scybalæ, the purgative may be repeated and the irrigations continued. The patient should be kept upon his back, and on a liquid diet, with an ice bag on his abdomen, just as long as he has spontaneous pains or there is tenderness in the appendicular region. Return to the regular diet should be cautiously supervised; the restricted diet is continued for one week to three weeks, and then ordinary articles of food are gradually permitted. Dietetic treatment should be continued for months or years. The fundamental rule in eating should be to use animal food with great moderation, giving preference to a vegetarian alimentation. The patient will require consecutive treatment for a long while in order to overcome the hyperæsthenia, and to bring about normal function. This is an excellent way of avoiding the relapses of appendicitis. Surgical intervention is regarded as indicated when appendicitis is complicated with abscess or peritonitis; when in spite of the preventive treatment the patient has returns of the disease, and finally when the occupation of the subject does not permit him to follow the régime or to carefully attend to it. Out of 210 patients Robin consented to operation upon only 4, of which two recovered after operation and two died. The latter probably would have died if no operation had been done. Of the remaining 206 patients only 168 took his advice and every one recovered. Upon the 38 remaining patients an operation was performed, with 3 deaths.

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THE ECONOMICS OF THE GENERAL PASTEURIZATION OF MILK.

The affirmative side of the proposition for the general pasteurization of all fluid milk supplies entering into New York has had a very continuous and somewhat elaborate presentation for several months past. In fact, it has almost monopolized the discussion of the milk question. A remedy proposed by anybody is usually based on an appearance of evils needing a remedy, but it does not always follow that evils exist to the full extent alleged, or that the remedy most urged is the proper and most complete remedy simply because it is favored by the most violent agitation. In this matter, however, every one must admit evil conditions prevailing in the milk supply, but not to the extent that is stated by the advocates of this special remedy. Fair, open minded, honest discussion of this question must come down somewhere near the facts, and a proper solution of the question thoroughly protective to the consumer can be arrived at only through an impartial, unprejudiced analysis and frank admission of every fact bearing on the subject.

The advocates of compulsory pasteurization seem to go on a theory that no good, wholesome milk comes into New York, with the exception of an estimated ten or twenty thousand quarts a day of certified milk, and here is one point at which they ignore conditions that are capable of substantiation as facts, namely, that there are several concerns having many years' experience in supervising the production and distribution of milk under strictly sanitary

conditions from start to finish. One company alone makes a daily delivery of this grade of milk in New York constituting more than twenty-five per cent. of the total actual milk supply. If, for instance, the average daily milk receipts for the month of February in New York were 1,750,000 quarts, as estimated, it can positively be shown that more than 425,000 quarts of that daily amount consists of milk produced under the very best conditions, from healthy cows and properly managed dairies. A further fact capable of verification is that of the dairies supplying this milk, some have been for many years engaged under special supervision in the production of this kind of milk. At the present time there must be several thousand dairymen in the State of New York who have spent a great deal of money in the elimination of suspicious cattle from the herds, in the remodeling of their dairies, and in the adoption of precautions that would insure pure, rich, wholesome milk. The large companies that bottle milk in the country which is produced under their own supervision, and have a system of veterinary inspection, all of which exists in fact and not in theory, are constantly opening new plants. We are informed that one concern alone opens annually on the average from ten to fifteen new plants in this and the surrounding States which are shipping milk into New York, and that these receiving and bottling stations are scientifically up to date, costing from \$10,000 to \$30,000 each. These plants are located only after an agreement has been entered into with the surrounding dairymen that they will proceed to clean up their dairies and improve their herds so as to qualify themselves to produce milk under the sanitary supervision of the trained inspectors of such concerns.

Now, what would be the result of general pasteurization on this many years of education that has been going on throughout the surrounding six States contributing to New York's supply, Vermont, Massachusetts, Connecticut, New York, Pennsylvania, and New Jersey? Would it mean that the progressive dairyman would be confronted with a request to step backward, that the public did not want his sanitary milk, that he had invested his thousands of dollars in modern equipment in vain, and that he must take his loss and go back to the old slipshod way of calling anything milk that would go in a forty quart can and pass the butter fat and lactometer tests of the board of health inspector, because the city had decided to attempt covering up the impurities or other dangerous qualities of the milk by pasteurization? Can one imagine for a moment that an enterprising dairyman is willing to go back to the old way and that New York would get his supply of milk in competition with that of the slipshod dairyman who did not operate under

such expense? Not at all! He is independent very largely of the New York market. To those familiar with the milk question it is absolutely demonstrated that it is becoming more and more difficult each year to get sufficient milk to supply the needs of the city. Every fall and winter it is impossible to get enough milk to supply the demand. Otherwise, why should the railroads and dealers reach out and haul milk in here four hundred miles each day? So much from the dairyman's standpoint.

Now let us look at the physical operation of pasteurization. Estimating the daily arrival on all lines at, say, 1,700,000 quarts of milk of all kinds coming into New York, has any estimate been submitted showing how many plants and how much of an investment would be required by the city of New York to handle the enormous quantity of milk that would have to be taken care of? We submit the suggestion that, having looked this scheme over, we believe that it is impracticable. Some of the far away milk trains leave their starting point in the country at eight o'clock in the morning. They are not scheduled to arrive at New York until from 9:30 to 11:30 p. m., and in bad weather they are anywhere from two to twelve hours late. Assuming that they were always on time and that there were several hundred dealers receiving milk from the country, some getting better grades than others, for which they paid a higher price, and receiving rich milk produced under sanitary conditions, in what manner are they to be treated by these public pasteurization plants? Are they to bring this milk in from the country in forty quart cans and keep their trucks waiting at the Jersey City terminals until the trains arrive, no matter how late they are, carting this milk to the pasteurization plants designated by the board of health, turning it in, and receiving back, hours later, the same identical milk plus the pasteurization effect, minus the loss in handling? Will the customer like the pasteurization? Will the customer who has been receiving pure fluid milk bottled in the country, with plenty of cream showing in the top of the bottle, like to have this taken out of his sight? Will he forego the privilege of taking the cream in the top of the bottle for his coffee or cereal, and consent to use a changed product, heated to the point that destroys the normal flavor of milk, simply because a certain proportion of the dairies have never been properly supervised for the production of wholesome milk? We think the consumers will have something to say about this.

Next, as to the dealer. Who pays him for the loss? There is sure to be a certain percentage of loss in running milk through pasteurizers. What guarantee will he have that he will receive back the

same high grade milk he may have given, provided he is one of the specially equipped handlers of milk? We think that some serious consideration should be given to this question before such a great injustice is inflicted on the thousands of up to date dairymen and the many thousands of consumers of good, wholesome milk.

This movement for universal pasteurization is distinctly a retrograde proposition. Can we get a dairyman to expend money for continual veterinary inspection of his herds, to destroy or dispose of diseased cows, to buy wholesome foods for them, to have large, clean, sanitary stables and milk cooling rooms, and expect to buy his milk for the city of New York to pasteurize under any compulsory movement? The minute he finds out that this milk is to be pasteurized will he not do one of two things—either withdraw his supply from the New York market or drop his investment, his sanitary training, and put himself on a commercial parity with the careless, shiftless, unclean dairymen who have no interest in the saving of human life?

The companies, of which unfortunately there are few, that really produce and distribute absolutely wholesome milk would, beyond all question, save considerable money under the compulsory pasteurization scheme, for instead of building expensive and modern plants for receiving and bottling milk in the country, they would only need mere sheds along the railroad where the farmer could bring his forty quart cans to be shipped down to New York without any expense of putting in sterilized bottles. It would save the operating expense of such a plant. It would save the heavy freight charges on bottled milk, and, therefore, concerns operating in this way, as some are at present, would have no object in opposing compulsory pasteurization, except on the high ground of belief that it was not best for the public or best for the dairymen, for it would not get at the root of the matter.

One of the large concerns several years ago equipped two expensive pasteurizing plants to meet the calls from some members of the medical profession. It endeavored to interest the consumer, but the interest was only temporary. While the milk was of the very best possible to be obtained, produced under sanitary conditions, supplemented by pasteurization, the call decreased until finally the operation of the plants was discontinued.

The humane side of this question is a vital one, it must be admitted. It is argued that thousands of lives have been saved in New York by the philanthropic serving of pasteurized milk in certain localities. While it may be admitted that this is favorable as compared with the previous use of unclean milk, it should not be accepted as the only way of

accomplishing the same result, for can it not be demonstrated that even better results would have followed the use of pure, sanitary milk?

The question of the wholesomeness of pasteurization is still an open one, with many intelligent and experienced physicians decidedly in favor of pure, wholesome milk unpasteurized. Is not the suggestion to pasteurize milk simply a makeshift, a temporizing with the condition which we know is partly wrong, but not a step toward the root of the matter? Would not the expense necessary for the construction of pasteurizing plants in the city be equivalent to the cost of eradicating tuberculous disease in the State? If it is tuberculous disease that we are especially combating, why not get at the root of the matter by destroying the cause of it, if it is maintained that milk is in any degree responsible for its prevalence in New York.

THE PARANOIA QUESTION.

The absorbing interest taken in the Thaw trial prompts us to outline as briefly as possible, and necessarily in but a fragmentary manner, some of the aspects of the "paranoia question." There is probably no other problem of modern psychiatry so difficult to solve or even to present. The solution has been attempted by many alienists with varying degrees of satisfaction, but the point of view of to-day is far from that of a decade ago. It is instructive to realize that fifteen years ago the European institutions were filled with patients thought by able alienists to be suffering from paranoia, while to-day in many of the same institutions, perhaps even with the same directors, one cannot find a paranoiac without the aid of a magnifying glass. Whence this veering around, when human nature and its diseases have undergone little alteration for centuries at least, and the disorders of the mind of to-day are not much different from those of yesterday or even more than a century ago, when Vogel, in 1772, first introduced the term paranoia into psychiatry?

What one finds in the discussion of the paranoia problem, especially from English and American sources, is a lack of definition of what the various writers themselves mean by that term. The prevalent custom of making a word stand as a symbol for a disease process, while it may have some warrant in general clinical medicine, has relatively little justification in the study of disorders of the mind, where the varying and perplexing symptom complexes tend to make our concepts of mental diseases very hazy. The fact of the matter is that practically every psychiatrist whose opinion is worth much uses the term in a different sense, and any discussion of the problem should concern not the word

paranoia, but the particular author's application of it. Were this method followed here, as it is more carefully observed on the Continent, much less confusion would be met with, and some advance made in the study of the diseased conditions themselves.

In former times delusional mental states, especially if of a persecutory nature, were termed paranoia without further specification, and in some instances the admissions of patients with "paranoia" have been as high as from seventy to eighty per cent. When it became realized, largely through the studies of Werner, Tanzi, Riva, and Wernicke, and of late particularly of Kraepelin, that delusions of persecution were frequent accompaniments if not prominent symptoms in a large number of mental disturbances, the diagnosis "paranoia" began to be made with diminishing frequency, and the delusions of persecution considered merely as a general symptom of defective reasoning power. Thus, such persecutory ideas were observed to be present in hysteria, in neurasthenia, in epilepsy, and in defectives; they followed recovery from the infectious diseases, measles, typhoid fever, influenza, and others; they were very common as a result of chronic intoxications, notably with alcohol, and often of lead, mercury, morphine, cocaine, and ergot poisoning. As a secondary effect of many acute psychoses, such as manic depressive insanity, such delusions are prevalent, as well as in a number of the so called adolescent insanities with intellectual deterioration, now so well grouped by Kraepelin and his followers as dementia præcox. In patients suffering from symptomatic depression, from involution melancholia, and very largely in senile deterioration, persecutory delusional states are known to occur. Thus, little by little, "paranoia" disappeared, and in the minds of a few—notably some extreme followers of Kraepelin—there are no patients presenting the so called "paranoid" delusions who may not be classified in some one or other of the groups already outlined. The pendulum has swung to the other extreme.

When one attempts a construction, therefore, of our present views of the question, it is by no means a simple matter. The truth probably lies not at either extreme, and for practical purposes, both from the standpoint of psychiatry and from that of the law, one must recognize that the "paranoid" group as recognized by those who would take a moderate view may be conveniently divided into three general heads. As early as in 1883 Morselli described in clear and unmistakable terms a rudimentary, or abortive, paranoia, which has received the sanction of many if not most subsequent students. Such forms have been grouped by German as well as by French writers as those mild insanities

in which the various "phobias," fixed ideas, and obsessions are the features, developing on a psychopathic foundation. Delusions of persecution are here very frequently encountered. Whether Friedmann's mild cases of paranoia with recovery recently described (*Monatsschrift für Psychiatric und Neurologie*, No. 17, 1906) are to be here included is an open question. The group is a large one and much in need of further exact delineation. Certainly Bianchi's paraphrenia does not help with its purely accidental characteristics.

The old familiar forms of paranoia, the chronic delusional manias of fifteen years ago, are for the most part to be ranged with the second group—secondary paranoias. These are the postinfection and posttoxic forms now relegated to their proper position. Many of the acute "paranoid" states with good prognosis belong here, but since some develop into the chronic systematized forms with little intellectual defect, their consideration calls for rare judgment. The alcoholicist, morphinist, and cocainist are also subject to secondary "paranoid" persecutory states which are grouped here as well. Probably the largest number of the secondary paranoias are to be relegated to the dementia "paranoid" group of Kraepelin, in which the intellectual deterioration, the disorder of attention, and the lowering of the emotional tone aid in making a more exact diagnosis of the condition. Inasmuch as the progress of this disease is often very slow, the diagnosis may present at times almost insuperable difficulties.

A third group includes the so called primary paranoias. These originate as a rule upon a psychopathic basis, and are characterized largely by the development of delusional systems in the face of relative clearness. Acute and chronic forms are widely admitted. Whether the acute forms of Mendel and others are simple or hallucinatory, and the periodic forms of Ziehen are to be classed with Morselli's group or with the manic depressives, or are purely toxic secondary paranoias, is one of the fine questions in modern psychiatry. Inasmuch as a favorable prognosis is given in many of these, their forensic importance is self evident.

The chronic systematized forms, then, make up the remainder of this general group. As already outlined, they constitute for many authors the only paranoias with which they are acquainted. These are the chronic delusional insanities made classic in regicides, reformers, insane religious leaders, persecuted persecutors, and litigious and erotic paranoiacs. Inasmuch as the definition of this type includes the ideas of chronicity without early intellectual defect, the prognosis is foreshadowed in the very definition. It is admittedly bad, but judgment must always be suspended until the disease has been

in progress for a number of years, and then the reports of recovery by numerous observers, notably the cases of Mendel, Meschede, Bleuler, Freyberg, and Bartels, of patients who have suffered from chronic systematized paranoia for a number of years, sometimes made as late as ten or fifteen years after admission, should lead even the most pessimistic of observers to admit the possibility of the curability of chronic systematized paranoia even in its severest types. Furthermore, the recent reports of Friedmann (*l. c.*) and of Gierlich (*Archiv für Psychiatric*, No. 40) make it imperative to reconstruct some of our opinions relative to the occurrence of mild cases of chronic systematized paranoia with a favorable outcome.

BE CAREFUL WHOM YOU PAY.

It is apparently an easy matter for smooth tongued individuals to collect money from almost any physician, for the educational and professional training of the physician is such as to make him almost necessarily rather a poor business man. The publishers of medical books and periodicals generally print special notices on their contracts requesting physicians not to pay any money to agents, but even with such specific requests before them physicians do pay considerable sums to unauthorized agents, and it has occasionally happened that these agents have failed to turn over the funds to the publishers. The physician then feels aggrieved with the publishers, notwithstanding the fact that they had done all that lay in their power to protect their patrons. Where agents are permitted to make collections, they are or should be provided with proper credentials, and physicians should make it a rule never to pay out any money to agents without taking pains to ascertain whether or not the agent is duly authorized to make such collections and that his authorization bears a recent date. Where an agent is dismissed, it is not always possible for his employer to make him return any letter of authorization which he may have, and practically the only safeguard which the physician has against being imposed upon by discharged employees is to insist upon agents or solicitors showing a recent letter of authorization.

Obituary.

FRANK W. TALLEY, M. D.,
OF PHILADELPHIA.

Dr. Talley died of nephritis at his home, in Philadelphia, on Sunday, February 17th. He was born in Wilmington, Del., in 1865. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1881, and after serving the usual term as interne in the Philadelphia General Hospital he spent a short time in Europe. At the time of his death he was one of the gynecologists to

Saint Agnes's Hospital. He had formerly been connected with the gynecological clinic of the Philadelphia Polyclinic and College for Graduates in Medicine.

GEORGE BINGHAM FOWLER, M. D.,

OF NEW YORK.

Dr. Fowler, whose sudden death occurred on Wednesday of this week, was a well known and highly esteemed member of the profession. He was a graduate of the College of Physicians and Surgeons, of the class of 1871. He was a native of Alabama. For several years, beginning in 1895, he was health commissioner of the city. He was an exceptionally amiable and attractive gentleman.

News Items.

NEW YORK CITY AND STATE.

The Jewish Maternity Hospital has opened its out-door department and applicants are received daily, except Sundays, between 3 and 5 p. m.

Changes of Address.—Dr. J. Adelphi Gottlieb, to 241 West One Hundred and Thirty-seventh Street; Dr. A. M. Anderson, to 15 West Ninety-first Street, New York. Dr. George Austin Wyeth has returned from Europe and opened an office at 1845 Broadway.

The West Side Clinical Society of New York.—The next meeting of this society will be held at the Hotel Mar-seilles, One Hundred and Third Street and Broadway, on Thursday evening, March 14th. The paper of the evening will be read by Dr. Z. L. Leonard, on Perichondritis of the Larynx.

The Glens Falls Medical and Surgical Society held a meeting on Thursday evening, March 7th. The paper of the evening was by Dr. Thomas H. Cunningham, of Glens Falls, the subject being, A Nonsectarian Medical Society. Discussion by Dr. F. G. Fielding and Dr. George A. Chapman, of Glens Falls.

The Buffalo Academy of Medicine.—The following programme was arranged for a meeting of the *Section in Surgery*, held on Tuesday, March 5th: A Working Formula for the Treatment of Intra-peritoneal Infection, by Dr. William B. Jones, Attending Surgeon St. Mary's Hospital, Rochester, N. Y.; Typhoid Ulceration, by Dr. John Parmenter.

The Syracuse Academy of Medicine.—The following programme was arranged for a meeting of this academy, held on Tuesday, March 5th: Presentation of Specimens; Keratosis Obturans and Nasal Cystoma, by Dr. G. S. Britten; Lessons from a Practice in a Small Town, by Dr. S. J. Sornberger, Cortland, N. Y.; An Interesting Case of Malformation; Presentation of Specimen and Slides, by Dr. W. L. Wallace, Dr. H. S. Steensland.

The Elmira Academy of Medicine.—The following programme was prepared for a meeting of this academy, held on Wednesday, March 6th: Dr. O. J. Bowman, Horseheads, N. Y., Report of a Case; Dr. J. C. O'Brien, Elmira, N. Y., Is Quinine of Any Use in Obstetrics?; Dr. H. B. Smith, Corning, N. Y., Diagnosis of Chronic Valvular Heart Disease; Dr. H. D. Wey, Elmira, N. Y., The Fable of Chicken-pox.

The Society of Tropical Medicine, which has existed for a few years, and is especially active in Philadelphia, will hold its first meeting in New York at the Academy of Medicine, at 8:30 p. m., on Friday, March 29, 1907. Dr. L. L. Seaman, who has recently returned from a trip to Central and Eastern Africa, with Dr. Nicholas Senn, of Chicago, will be one of the speakers, and will give a talk on the hygienic conditions and the diseases which he observed on his trip.

Personal.—The reappointment of Dr. Alvah H. Doty, as Health Officer of the Port of New York, which was con-

firmed on February 28th, by the State Senate, marks the beginning of his sixth term of office. Dr. Doty served during the administrations of Governors Morton, Black, Roosevelt, Odell, and Higgins. Governor Hughes renominated him on February 4th, and confirmation of the appointment was, it is said, delayed by reason of there not being a quorum in the committee on Public Health since the nomination was sent in.

Dr. Henry Heiman has been appointed adjunct professor in the department of pædiatrics of the New York Polyclinic.

The New York Academy of Medicine.—The following programme was prepared for a meeting of this academy, held on Thursday evening, March 7th: Symposium on Typhoid Fever: The Typhoid Epidemic at Scranton, in the Winter of 1906-1907, by Dr. J. M. Wainwright, Chief Surgeon Moses Taylor Hospital, Scranton, Pa.; The Typhoid Epidemic in Pittsburgh, by Dr. J. F. Edwards, Superintendent Bureau of Health, Pittsburgh, Pa.; The Typhoid Epidemic in Berwick, by Dr. J. H. Bowman, Berwick, Pa.; The Bacteriology of the Blood in Typhoid Fever, based on an analysis of 1,600 cases, by Dr. Warren Coleman and Dr. B. M. Buxton. Discussion by Dr. James Ewing, Pathological Laboratory, Cornell University; Dr. W. H. Park, Laboratory Health Department, New York; Dr. Morris Manges and Dr. E. Libmann.

The *Section in Public Health* will hold a meeting on Tuesday evening, March 12th, with the following order: Milk as a Carrier of Infection, by Dr. Charles Harrington, Secretary Massachusetts State Board of Health; Pasteurization: The Advantages and Disadvantages to the Consumer, by Dr. Rowland G. Freeman, of New York; Pasturization: The Advantages and Disadvantages to the Municipality, by Dr. Joseph Roby, Rochester, N. Y.; Current Misstatements and Fallacies Regarding the Milk and Milk Supply of New York City, by Dr. William H. Park, of New York. Discussion by Dr. L. Emmett Holt, Dr. Walter Bense, and Dr. Linsly R. Williams.

The *Section in Neurology and Psychiatry* will hold a meeting on Monday evening, March 11, with the order as follows: Presentation of Patients; A Brief Report on Mixed Forms of Manic Depressive Insanity with Presentation of Two Patients, by Dr. George H. Kirby; Paper: Some Points in Clinical Diagnosis of Dementia Paralytica by Dr. C. Macfie Campbell. Discussion by Dr. Dana, Dr. Sachs, Dr. Mabon, Dr. Pritchard, and others. Executive session.

The *Section in Otolaryngology* will meet on Friday, evening, March 15th, with the following order: The evening will be devoted to Purulent Involvement of the Labyrinth. Cases will be exhibited by Dr. R. Opdyke, Dr. W. S. Bryant, and Dr. Eagleton. Reports of Cases will be read by Dr. H. Knapp, Dr. Duel, Dr. Dench, Dr. Pooley, Dr. Coburn, Dr. H. Smith, Dr. McKernon, and Dr. Held. Some remarks on the value of Von Stein's symptom in seven cases of Internal Ear Disease, by Dr. W. P. Eagleton; Internal Ear Symptoms Simulating Intracranial Abscess, Following Traumatism to Middle Ear, by Dr. John M. McCoy.

The *Section in Pædiatrics* will hold a meeting on Thursday evening, March 14th, with the order as follows: Presentation of Cases: A Case of Disease of the Right Sacroiliac Joint; Report of Cases: X Ray Plates of a Case Showing Multiple Exostoses, by Dr. H. W. Frauenthal; Papers: (a) Angioneurotic Edema and Other Nonnephritic Edemas in Children, by Dr. Herman Schwarz; (b) The Indications for and the Technique of Paracentesis of the Drum Membrane, by Dr. John McCoy. General discussion.

The *Section in Orthopædic Surgery* will hold a meeting on Friday evening, March 15th, with the order as follows: Presentation of Cases Illustrating Final Results in Hip Disease Under Different Management; Papers: On the Results of Treatment in Tuberculous Coxitis; (a) Results in Untreated Cases, by Dr. E. LeRoy Barnett; (b) Results of Treatment with the Short Plaster of Paris Spica, by Dr. C. H. Jaeger; (c) Results of Treatment with Fixation Splint, by Dr. Wisner R. Townsend; (d) Results of Excision, by Dr. C. Ogilvy. General discussion.

Society Meetings for the Coming Week:

MONDAY, March 11th.—New York Academy of Medicine (Section in Neurology and Psychiatry); Society of Medical Jurisprudence, New York; Corning, N. Y., Medical Association; Waterbury, Conn., Medical Association.

FRIDAY, March 15th.—New York Academy of Medicine (Section in Public Health); Medical Society of the County of Schenectady, N. Y.; Practitioners' Club of Jersey City, N. J.; Medical Society of the County of Rensselaer, N. Y.; Buffalo Academy of Medicine (Section in Medicine).

WEDNESDAY, March 14th.—Medical Society of the Borough of the Bronx, New York; New York Pathological Society; New York Surgical Society; Alumni Association of the City (Charity) Hospital; Brooklyn Medical and Pharmaceutical Association; Richmond County (N. Y.) Medical Society.

THURSDAY, March 14th.—New York Academy of Medicine (Sections in Pediatrics and Otolaryngology); Brooklyn Pathological Society; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers, N. Y.

FRIDAY, March 15th.—New York Academy of Medicine (Section in Orthopaedic Surgery); Clinical Society of the New York Postgraduate Medical School and Hospital; East Side Physicians' Association of the City of New York; New York Microscopical Society.

Infectious Diseases in New York:

We are indebted to the Bureau of Health of the Health Department for the following statement of new cases and deaths reported for the two weeks ending March 2, 1907:

	March 2		February 23	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	41	9	45	12
Smallpox	4	..	1	..
Varicella	86	..	76	1
Measles	326	6	239	10
Scarlet fever	237	17	298	13
Whooping cough	51	7	66	5
Diphtheria	391	51	277	46
Tuberculosis pneumoniae	118	192	360	220
Cerebrospinal meningitis	14	12	13	12
Totals	1,538	294	1,395	319

PHILADELPHIA AND THE MIDDLE STATES.

Change of Address.—Dr. De Forest W. Ward, to 1901 Chestnut Street, Philadelphia.

The Medical Club of Philadelphia.—The regular meeting of the executive committee of this club was held on Saturday evening, March 2nd, at the office of the president.

Smallpox in Pennsylvania.—A case of smallpox has been discovered in Bendersville, Adams County, Pa. The State Commissioner of Health has started a campaign of vaccination in the immediate district.

Philadelphia County Medical Society.—At the regular semimonthly meeting of this society, held on Wednesday evening, February 27th, Dr. J. N. McCormack, of Bowling Green, Ky., delivered an address on Poverty and Incompetency—a Vicious Circle in the Medical Profession. Following Dr. McCormack's address Dr. John H. Musser, Dr. J. B. Roberts, Dr. Albert M. Eaton, and Dr. J. M. Anders gave five minute talks on the business aspect of the medical practitioner's labors.

Scientific Society Meetings in Philadelphia for the Week Ending March 16, 1907.—*Monday, March 11th.* Section in General Medicine, College of Physicians; Wills Hospital Ophthalmic Society. *Tuesday, March 12th.* Philadelphia Pediatric Society; Botanical Section, Academy of Natural Sciences. *Wednesday, March 13th.* Philadelphia County Medical Society. *Thursday, March 14th.* Pathological Society; Section Meeting, Franklin Institute. *Friday, March 15th.* University of Pennsylvania Medical Society; American Philosophical Society.

Philadelphia Pathological Society.—At the regular semimonthly meeting of this society, held on Thursday evening, February 28th, Dr. Joseph Walsh read a paper entitled The Kidneys in Tuberculosis of the Lungs; Dr. Joseph McFarland read a paper entitled Opsonins and Stimulins; Dr. R. C. Rosenberger read a Preliminary Report Upon Special Studies of the Faeces; Dr. L. Johnson read a paper entitled Primary Carcinoma of the Gallbladder. Card specimens were exhibited by Dr. F. A. Craig, Dr. C. Y. White, Dr. G. P. Müller, Dr. M. B. Hartzell, and Dr. Harlan Shoemaker.

The Annual Dinner of the Society of the Alumni of the Medical Department of the University of Pennsylvania was held at the Bellevue-Stratford Hotel, Thursday even-

ing, February 21st. Dr. George E. de Schweinitz acted as toastmaster. Toasts were responded to by the provost of the university, Mr. Charles C. Harrison; Dr. Charles K. Mills, Dr. S. Weir Mitchell, Dr. Edward Martin, and Russell Duane, Esq., of New York. Covers were laid for two hundred and fifty. The committee of arrangements for the dinner consisted of Dr. William Campbell Posey, Dr. Charles H. Frazier, Dr. Charles K. Mills, Dr. G. E. de Schweinitz, Dr. J. Allison Scott, and Dr. B. Franklin Stahl.

Charitable Bequests.—By the will of Terrance Reilly the Catholic Home for Destitute Children and the House of the Good Shepherd become residuary legatees. The estate is valued at \$16,000. By the will of William Miller St. Timothy's Memorial Hospital receives \$100. By the will of Mrs. Anna J. Carpenter the Children's Home, of Easton, Pa., will receive \$7,000 after the death of the testatrix's husband and son. The Easton Hospital becomes a residuary legatee of the estate to the extent of \$5,000 and the Old Women's Home to the extent of \$3,000. Mrs. Louis Fleischer has donated a solarium to the Jewish Hospital Association in memory of her sister, Dr. Rebecca Fleischer, who died about six months ago.

The End of the Buckingham Agricultural Institute.—Some time ago, possibly a year, we noted in these columns the fact that Chief-Justice Edward M. Paxson, deceased, had bequeathed \$1,500,000 to three trustees for the purpose of establishing a farm school for boys, to be known as the Buckingham Agricultural Institute. On Monday, February 18th, Judge Penrose, in the Orphans' Court of Philadelphia County, handed down a decision by which this charitable bequest becomes inoperative. It appears that Judge Paxton had failed to have that part of the will making this endowment signed by two witnesses, as required by law. It is a curious fact that an eminent jurist should have overlooked this necessary formality and so defeated the estimable purpose which he had conceived.

Philadelphia Personals.—Dr. Howard A. Kelly, professor of gynecology in Johns Hopkins University, received the honorary degree of Doctor of Laws, at the celebration of Washington's Birthday, held by the University of Pennsylvania.

Dr. Samuel G. Dixon has been appointed commissioner of health of the State of Pennsylvania by Governor Stuart.

Dr. S. Weir Mitchell celebrated his seventy-seventh birthday in Philadelphia on Friday, February 15th.

Elliston P. Morris, Esq., has resigned the office of president of the Germantown Hospital. Mr. Morris has held this office for thirty-seven years.

Dr. Alfred Gordon has been elected president of the Philadelphia Neurological Society.

The Physical Condition of School Children.—At the meeting of the American Academy of Political and Social Science, held on Friday, February 15th, in Philadelphia, Mr. William A. Stecher, director of the department of physical education in the Philadelphia public schools, spoke of the reasons for the establishment of the department of which he has charge. Dr. Richard C. Cabot, of Boston, Mass., spoke upon the school nurse; Dr. (Phil.) William H. Allen, secretary of the committee on the physical welfare of school children in New York, spoke of the work of that committee; and Dr. (Phil.) Martin G. Brumbaugh, superintendent of the public schools of Philadelphia, spoke of the relation of physical education to the whole educational problem.

Contagious Diseases in Philadelphia Hospitals.—The hospital of the University of Pennsylvania has recently had several cases of diphtheria develop within its wards. Another large Philadelphia hospital has also been quarantined by the board of health on account of the occurrence of diphtheria. About a week ago the boards of managers of the Pennsylvania Hospital, the Presbyterian Hospital, and the Jefferson Medical College Hospital decided to refuse admittance to visitors to the patients for a time, as a precautionary measure against the development of contagious diseases within their walls. For a year or two the German Hospital has excluded children from visiting patients in the ward as a prophylactic measure against the development of contagious disease.

The Health of Philadelphia.—During the week ending February 23, 1907, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Typhoid fever	415	47
Scarlet fever	37	4
Cholera	54	0
Diphtheria	94	10
Croup	7	4
Measles	21	2
Whooping cough	31	3
Infants of the city	89	90
Infants of the city	80	81
Infants of the city	11	3
Infants of the city	23	22
Infants of the city	6	0
Infants of the city	1	0
Infants of the city	1	0

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 5; puerperal fever, 2; diarrhoea and enteritis, under two years of age, 17. The total deaths numbered 650, in an estimated population of 1,500,595, corresponding to an annual death rate of 22.52 in a thousand population. The total infant mortality was 121; under one year of age, 92; between one and two years of age, 29. There were 26 still births, 22 males and 4 females. The temperatures were seasonable. The total precipitation was 0.04 inch.

BOSTON AND NEW ENGLAND.

The Portland (Me.) Medical Club.—At a meeting of this club, held on Thursday evening, March 7th, at Columbia Hotel, Dr. A. W. Haskell, host, a paper on Appendicitis was read by Dr. A. S. Gilson.

The White River, Vermont, Medical Association.—The following programme was arranged for a meeting of this association, held at White River Junction on Wednesday, March 6th: Diphtheria, with a Report of Cases, by Dr. I. N. Fowler, of Lebanon, N. H.; Some Phases of the Proprietary Medicine Question, by Dr. H. R. Weston, of Windsor, Vt., and a discussion of the question: Shall this society take any part in educating the public in matters regarding health and disease? Discussion opened by Dr. W. T. Smith, of Hanover, N. H.

The Mortality of Boston.—The number of deaths reported to the Board of Health for the week ending March 2nd, was 225, as against 242 the corresponding week last year, showing a decrease of 17 deaths, and making the death rate for the week 19.48. The number of cases and deaths from infectious diseases was as follows: diphtheria, 47 cases, 6 deaths; scarlatina, 51 cases, 2 deaths; typhoid fever, 2 cases, no deaths; measles, 8 cases, no deaths; tuberculosis, 40 cases, 20 deaths; smallpox, no cases, no deaths. The deaths from pneumonia were 37, whooping cough 1, heart disease 18, bronchitis 9, marasmus 5. There were 12 deaths from violent causes. The number of children who died under one year of age was 46, under five years of age 58, persons over sixty years of age 52, deaths in public institutions 86.

BALTIMORE AND THE SOUTH.

A New Medical Society in Arkansas.—The physicians of Walnut Ridge and Hoxie recently organized an association at Walnut Ridge. The following officers were elected: President, Dr. J. E. Pringle, of Black Rock; secretary, Dr. J. C. Land; treasurer, Dr. J. O. Hughes; vice-president, Dr. E. T. Ponder; Dr. W. A. Smith, Dr. H. N. McCarroll, Dr. T. C. Neece, and Dr. G. M. Watkins are members of important committees.

The Mortality of Baltimore.—The report of the Health Department for the week ending March 2nd, showed a total of 251 deaths, as compared with 200 for the corresponding week of last year, 234 in 1905, and 302 in 1904. The annual death rate in 1,000 of population was: Whole, 22.18; white, 17.30; colored, 47.96. The principal causes of death were: Typhoid fever, 1; measles, 1; influenza (la grippe), 5; consumption, 37; cancer, 6; apoplexy, 14; organic heart diseases, 21; bronchitis, 2; pneumonia, 35; Bright's disease, 18; congenital debility, 14; lack of care, 1; old age, 14; homicides, 1; accidents, etc., 16. The nativity of the decedents was: United States, whites, 117; foreign, 43; colored, 75; unknown, 16. Sixteen deaths occurred at Bayview Asylum, 40 in hospitals, and 12 in other institutions. Forty-one coroners' inquests were held. The following number of cases of infectious diseases were reported, as compared with the corresponding week of last year:

	1906.	1907.
Typhoid fever	13	8
Scarlet fever	1	11

Typhoid fever	4	1
Measles	1	111
Marasmus	1	34
Whooping cough	32	2
Cholera	1	6

CHICAGO AND THE WEST.

Statement of Mortality of Chicago for the Week Ending February 23, 1907, compared with the preceding week and with the corresponding week of 1906. Death rates computed on United States Census Bureau's figures of midyear population—2,107,620 for 1907, 2,049,185 for 1906:

	Feb. 23, 1907.	Feb. 16, 1907.	Feb. 24, 1906.
Total deaths, all causes	707	698	594
Annual death rate in 1,000	17.49	17.27	15.10
Sexes			
Males	403	371	326
Females	304	327	268
Ages			
Under 1 year of age	122	124	136
Between 1 and 5 years of age	77	94	41
Between 5 and 20 years of age	52	43	41
Between 20 and 60 years of age	305	270	252
Over 60 years of age	151	167	124
Important causes of death			
Apoplexy	13	9	13
Bright's disease	42	37	49
Bronchitis	22	40	19
Consumption	79	72	52
Cancer	25	24	31
Cardiac diseases	9	10	12
Diphtheria	20	11	9
Heart diseases	50	60	44
Influenza	6	16	3
Intestinal diseases, acute	24	28	30
Measles	7	4	4
Nervous diseases	16	22	31
Pneumonia	161	156	108
Scarlet fever	27	39	5
Suicide	9	1	5
Typhoid fever	8	1	1
Violence (other than suicide)	37	21	39
Whooping cough	8	8	1
All other causes	144	133	138

GENERAL.

A Deserved Promotion.—Among the bills passed by the House of Representatives on February 27th, was one authorizing the President to appoint Lieutenant James Carroll, of the Medical Department of the Army, curator of the Army Medical Museum, a major. Major Carroll was the officer who submitted to a test upon himself in order to determine whether or not the germs of yellow fever were carried by mosquitoes. He submitted himself to the sting of mosquitoes infected with the yellow fever with the inevitable result—yellow fever and subsequent invalidism. In voluntarily giving himself to his country in the cause of science Major Carroll showed the highest sort of bravery, and was more of a patriot than many of the warriors who face the guns in battle. The promotion that comes to him now is not in the nature of a reward. It is merely a recognition.

Changes in Pharmacopœial Requirements.—Under date of February 15th, the committee of revision sent out a circular setting forth the following changes:

FORMERLY.		Now.
Alkaloids,		Alkaloids,
per cent.		per cent.
0.35	Belladonna leaf	0.3
0.5	Belladonna root	0.45
0.55	Colchicum seed	0.45
2	Ipecac	1.75
Resin,		Resin,
per cent.		per cent.
8	Jalap root	7
Alkaloids,		Alkaloids,
per cent.		per cent.
0.35	Stramonium leaf	0.25
1	Extract of stramonium	1
Gm. in		Gm. in
100 c.c.		100 c.c.
0.35	Fluid extract of stramonium	0.25
0.03	Tincture of stramonium	0.025
0.5	Fluid extract of belladonna root	0.4
0.35	Tincture of belladonna leaf	0.03
0.5	Fluid extract of colchicum seed	0.4
0.05	Tincture of colchicum seed	0.04
1.75	Fluid extract of ipecac	1.5

The acid test in the last paragraph on petrolatum has been dropped. Kerner's test for quinine sulphate is modified so as to meet the requirements of the pharmacopœia of U.S.A.

Bibliography of Current Literature

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

May 1, 1907

1. Oculohidradenoma. By PHILIP KIRBY BROWN.
2. The Nature of Herpes Simplex and Its Diagnostic and Prognostic Significance in Various Infectious Diseases. By J. S. SCHAMBERG.
3. Some Unusual Ocular Manifestations of Arteriosclerosis. By WILLIAM L. HAYES.
4. Conservatism in the Treatment of Infants with Harelip and Cleft Palate. By GEORGE V. I. BROWN.
5. The Ischemic Paralysis and Contracture of Volkmann. By CHARLES A. POWERS.
6. Surgery of the Spinal Cord. By JOHN B. MURPHY.
7. A Case of Colon Bacillus Septicæmia. By DELANCEY ROCHESTER.
8. Beriberi. Its Ætiology and Prevention. By L. S. H. FAYES.
9. Beriberi on the Isthmus of Panama. By IRA A. SHIMER.
10. An Operative Method for the Reduction of the Inferior Turbinate Other Than by Cauterization or Excision. By D. A. KUYK.
11. Cellulitis and Myositis of the Abdominal Wall, Simulating Intraabdominal Conditions. By JAMES MORLEY HITZROT.
12. Some Tropical Cutaneous Ulcerative Conditions. By PAUL G. WOOLLEY.

2. **The Nature of Herpes Simplex, with a Consideration of Its Diagnostic and Prognostic Significance in Various Infectious Diseases.**—Schamberg observes that herpes zoster and herpes simplex—both the facial and genital varieties—while not clinically identical, are closely related. The histology of the cutaneous lesions and the observed changes in the nerve structures appear in all to be practically the same. It is highly probable that the vast majority of all cases of herpes of the various types are the result of the action of a toxine. This proposition necessarily assumes the infectious origin of herpes. The frequency of herpes simplex in certain infectious diseases and its rarity in others is evidence that the toxine must possess certain peculiar qualities in order to exercise a selective affinity for sensory nerve structures. The toxines producing herpes simplex and herpes zoster are in all probability not the result of the action of any specific microorganism. This is certainly true of the former and by analogy may be assumed to be true of the latter disease. The three diseases in which an "herpetogenic" toxine develops with a fair degree of constancy are pneumonia, spotted fever, and malaria. Its frequency in these diseases and its comparative rarity in typhoid fever and many other infectious maladies make its appearance a symptom of considerable diagnostic import. In view of the tendency of certain individuals to recurrent attacks of facial herpes from slight indispositions the fact as to such a history should always be elicited before the diagnostic value of such herpetic outbreak is taken into consideration.

3. **Some Unusual Ocular Manifestations of Arteriosclerosis.**—Zentmayer reports two such cases, to which number he adds extracts from papers of other ophthalmologists. He says that in considering the prognosis of transient blindness a distinction should be made between those cases where the attack is but a symptom of a general condition in which spasm is a feature, as epilepsy, Raynaud's disease, migraine, and the ague of intermittent fever, in which the prognosis is good, and where it is due probably to a local manifestation of a general vascular disturbance in which the prognosis is grave. In the latter class the danger lies mainly in the secondary effect of the spasm, for, excluding the cases in which a reasonable doubt may exist as to the cause of the ischæmia, there yet remain several cases in which, although the blindness lasted for many hours, a full recovery of retinal function followed. The treatment should be the same as in early arteriosclerosis,

high arterial tension, and spasm. The only drug that has secured any standing in combating this insidious affection is potassium iodide. It is to be given in doses of from 3 to 5 gr., three times a day, in large draughts of water after meals so soon as there is any indication of capillary fibrosis, and is to be continued in interrupted courses thereafter. It should be needless to add that moderation in eating, drinking, exercise, pursuit of business, and pleasure is more essential than regularity in taking medicine. The nitrites are potent in reducing arterial tension. Nitroglycerin commends itself because of its convenience in administration. Amyl nitrite, by reason of its quick action, is especially indicated for the attack, but frequently appears to have but little effect in modifying it. Heart tonics are usually called for to improve the circulation. The value of massage of the eyeball has been demonstrated in the treatment of cases exhibiting the symptoms of obstruction, and should always be tried. The question of the advisability of performing an iridectomy must be decided for each individual case.

4. **Conservatism in the Treatment of Infants with Harelip and Cleft Palate.**—Brown, of Milwaukee, states that operation on infants with harelip and cleft palate should be delayed until it can be done with reasonable assurance of safety, but instead of allowing greater deformity to result from adverse muscular action during the waiting period as would otherwise be the case to utilize these forces, the fissures should be reduced and the asymmetrical condition corrected as much as possible, thereby simplifying the operative requirements and assuring better results. A series of comparatively slight operations (not more than three to complete lip and palate) with sufficient intervals between them are less dangerous to the life of the little patient and undoubtedly tend to a higher average of perfect results than more radical measures. The least possible amount of anæsthetic consistent with avoidance of actual pain should be given, and the length of time of each operation reduced to the minimum by order in the use of specially fitted instruments and the rapid use of dry sponges. Difficult cases with palate fissures of unusual width should be converted into better operative form by mechanical and other means before final closure is attempted. The alimentary tract should be kept in order by cleaning thoroughly, by keeping the bowels open, and by the administration of nourishing liquid food per rectum. As soon as the stomach will bear it without exciting vomiting food is to be administered by mouth and when appetite is poor it should be stimulated with carefully flavored, nourishing food in concentrated form. Respiration after operation should be watched to see that with the breathing space closed in an unaccustomed manner, there is sufficient oxygenation. Both lips, hard and soft palate should be complete, before speech habits have an opportunity to become fixed.

6. **Surgery of the Spinal Cord.**—Murphy says that in gunshot and stab wounds with immediate paralysis, operation is contraindicated, as the cord is probably severed, and its reapproximation will avail nothing, except in the caudal zone. After division or crushing of the nerves of the caudal zone, there is a positive indication for an end to end suture, axonal contact of the various fibres, as determined by faradic stimulation, the same as in peripheral nerves. In spina bifida centralis paralytica, in the caudal zone, resection of the atrophied section of the spinal cord with end to end union is indicated. Apendymal spina bifida should be treated by resection of compressed segments, and accurate suture approximation of the fasciculi of the cauda. Upper ependymal and true cord central spina bifida may be treated by ependymal subarachnoidal drainage. In all nonmalignant tumors of the cord, laminectomy should be performed at the onset of paresis. Delay to

complete paralysis is unpardonable, not to use a more forcible expression. Operation after complete paralysis from compression with degeneration is contraindicated. In tuberculoma compression the spinal cord operations should be done at the beginning of symptoms of paralysis. Late operations, that is, after a pressure necrosis of the cord, are worthless. The bone cavity should be filled with a Moorhof plug, as this lessens the liability of suppuration and hastens the process of repair.

8. **Beriberi, Its Ætiology and Prevention.**—Fales reviews our knowledge of beriberi as follows: Beriberi is considered by many as due to a microorganism. Indeed, it cannot be doubted that the pernicious form with its rapid onset and sudden death is due to some acute infection which rapidly produces intoxication of certain vital peripheral nerves. The acceptance of a microorganism as its cause in no way interferes with the theory that the ration is the determining cause of the disease. The microorganism being present, the disease is produced in an individual whose blood is deficient in potassium salts. If the normal amount of potassium salts were present in the individual the microorganism would not find a suitable medium for its propagation, and the disease would not occur. Much the same theory may be advanced in regard to the cause of scurvy. The author, therefore, comes to the conclusion: "Is it not, therefore, reasonable to suppose that both in beriberi and scurvy we have a certain condition produced by a deficiency of potash salts, and that this condition causes the organism to be peculiarly susceptible to certain forms of infection? With this susceptibility, and, under certain conditions, as the presence of the proper organism, race, climate, etc., beriberi is produced. Under other conditions the result is scurvy."

10. **An Operative Method for the Reduction of the Inferior Turbinate Other Than by Cauterization or Exsection.**—Kuyk describes his operation as follows: It consists in one or more incisions through the mucous membrane of the hypertrophic turbinate well down to the bone, when with a broad nasal saw the bone is cut into to a depth depending on the nature of the bone, whether cancellous or vitreous, which is easily detected by the sensation imparted to the hand. If the bone be hypertrophied and dense the cut is carried well down into its substance. The nostril is next cleansed, the edges of the incised mucous membrane are carefully packed into the osseous cut which, as indicated, has been purposely made with a broad saw to admit of the introduction of the overlapping edges of the soft parts. This adjustment of the tissues is maintained by a carefully placed pledget of cotton saturated in a solution of equal parts of compound tincture of benzoin and flexible collodion. This dressing may remain *in situ* for two or three days when after careful soaking it is as carefully removed. The edges of the incision should not be disturbed when the cotton is removed, else the object of the operation will be defeated. Rarely will re-packing be necessary. The direction of the incision will depend on the nature of the enlargement; it may be made from above downward, at the most dependent part of the turbinate upward, or, as is most usually necessary, directly into the body from within outward. It will be found that following this operation much absorption will occur, so that in the course of a short time the nostril will be sufficient for the full performance of its physiologic function.

MEDICAL RECORD

1. Influenza in Its Relation to Diseases of the Nervous System. By JOSEPH COLLINS.
2. The Relation of the Tonsil to Infection and Infectious Diseases. By ROBERT CURTIS BROWN.
3. A New Streptothrix Pathogenic for Cattle (Streptothrix of Bovine Pneumonia). By CHARLES E. KIEFFER.

4. The Preservation of Hearing. By W. SOHIER BRYANT.
5. Acute Œdema of the Pharynx, with Report of a Case Requiring Rapid Tracheotomy. By GOETHE LINK.
6. Brief Report of a Case of Trichiniasis. By JOSÉ M. FERRER.

2. **The Relation of the Tonsil to Infection and Infectious Diseases.**—Brown, of Milwaukee, shows in his paper that the tonsil is anatomically admirably arranged to resist infection. It is continually exposed to the action of pathogenic germs, and when we have an inflammation of the tonsil it is caused by a pathogenic germ which is endeavoring to enter, and the inflammation itself is essentially a defensive reaction. Therefore, when the resistance of the body is lowered from any cause, or the germs are virulent enough to overcome the other means of defense, which the tonsil has in common with the rest of the oral mucous membranes, or if the tonsil is wounded, a positive chemotaxis having been produced, there is a lacunar tonsillitis. When now a negative chemotaxis is produced, either on account of the virulence of the infection or from some other unknown cause, there is a general systemic infection without a tonsillitis. When we have a systemic infection it is either in spite of the defensive reaction or on account of negative chemotaxis. The relation of the tonsil to infection and infectious diseases is one of protection, and the disease we call lacunar tonsillitis is an example of phagocytosis and is a defensive reaction.

3. **A New Streptothrix Pathogenic for Cattle.**—Kieffer observes that the morphology and classification of the streptothrices is still far from being settled. As a class they stand between the moulds and the bacilli, but the border line varieties are by no means sharply located. The pathogenic streptothrices, whether in man or animal, cause two classes of lesions. The first and most important are the granulomata, the pseudotuberculous and the pseudomycotic lesions. Second, the inflammatory processes going on to abscess formation and frequently to pyæmic states. The author reports a hitherto undescribed streptothrix which he found at post mortem examination in five milk cows that died in quick succession in a small herd of fourteen heads, and which he proposes to call *Streptothrix pneumoniae bovis*. It is aerobic. While growing freely on the surface of all the media, growth is exceedingly scanty in stabs below a depth of $\frac{1}{4}$ inch. At a depth of $\frac{1}{2}$ inch it will not grow at all. It shows no growth in anaerobic cultures nor in an atmosphere of hydrogen. On all solid materials the organism seems to grow more freely on media of increased spissitude. Thus it will grow more freely on agar which has been prepared some weeks, so that slight shrinkage of the medium from the tube has taken place, than it will on the same medium freshly prepared. In hanging drop there is neither motility nor molecular motion. The streptothrix stains very freely with all of the ordinary aniline dyes. It is not acid fast. Decolorization is rapid and complete, with dilute mineral acids as well as with Gabbett's acid methylene blue. It is not decolorized by alcohol. It is brilliantly stained by Gram. Neisser's method shows no polar bodies. Special technique (Loeffler and Van Ermengem) fails to show any flagella.

4. **The Preservation of Hearing.**—W. Sohier Bryant calls attention to the advantages of periodical aural examinations, and the benefits which would accrue to the patient through the easy correction of aural defects which, untreated, would later become serious or incurable, impairing the hearing and menacing the well-being, and perhaps even the sanity and life of the individual. The layman has not yet learned to practise the same economy of his ears as he does of his teeth, for example. He does not go at regular intervals to the otologist, as he would to the dentist, in order that

connecting defects may be corrected before they become serious. Nor does he go to the otologist as he does to the ophthalmologist as soon as any deterioration has taken place. A slight deterioration in sight is immediately perceived, whereas a great loss of hearing may be brought about entirely unsuspected. The changes which affect the hearing most insidiously are of two kinds; those chiefly inflammatory, and those chiefly due to defective ventilation. The final results in either case are much the same. The inflammation first causes congestion and increase of the connective tissue elements, then contraction, anæmia, faulty nutrition, atrophy, and degeneration. The choking of the Eustachian tube causes the same results without intervention of inflammation direct through the congestion and stagnation of blood and lymph. Defect in the manometric balance of the tympanum directly affects the drum membrane. When there is negative pressure the membrane is sucked inwards flexing the ossicular chain. When there is increased pressure in the tympanum, the membrane is pushed outward, extending the ossicular chain. Either of these positions is detrimental to the best sound transmission, and when continued long the effect is lasting. Early observation will detect these insidious conditions, which cause over 95 per cent. of deafness, and judicious treatment cures them before serious impairment has taken place. Bryant suggests that the otologist should be consulted once a year, after every cold, and when anything unfavorable is noticed in the ear.

BRITISH MEDICAL JOURNAL.

February 25, 1907.

1. The Objects of Hunter's Life and the Manner in Which He Accomplished Them (*Hunterian Oration*),
By H. T. BUTLIN.
2. Clinical Remarks on Ichthyosis and Its Treatment.
By W. A. JAMIESON.
3. The Treatment of Rodent Ulcer by Zinc Ions,
By H. L. JONES.
4. A Case of Secondary Suture of the Great Sciatic Nerve,
By J. SHERREN.
5. A Case of Idiopathic Dilatation of the Rectum and of the Colon as Far as the Hepatic Flexure,
By H. M. FLETCHER and H. B. ROBINSON.
(*The Science Committee of the British Medical Association. Reports for 1906.*)
6. Observations on the Parathyroids and Accessory Thyroids in Man,
By D. FORSYTH.
7. The Influence of Increased Barometric Pressure on Man—Saturation of the Tissue Fluids with Nitrogen.
By M. GREENWOOD, JR.

2. **Ichthyosis.**—Jamieson states that variations in the oiliness and dryness of the human skin are very considerable, though not often very noticeable. The lubricity of the skin is greatest in adolescence and early adult life, diminishing with age. Extreme dryness of the skin is less frequent; it is met with in the old as a part of the general atrophy of the skin with lessened glandular activity. It is also met with in very thin skinned persons, in whom the physiological exfoliation is not sufficiently compensated for by growth from beneath; the use of much or poor soap aggravates the condition. In certain persons this dryness of the skin becomes so marked as to be considered a disease—"ichthyosis." It commences in intrauterine life, but is usually in abeyance until some months after birth, after which it manifests itself with ever increasing aggressiveness. Whatever may be its hidden cause, it must be regarded as an exaggerated development of epidermis, or a hyperkeratosis with atrophy of the deep layers of the rete mucosum. Any inflammatory appearances are probably accidental rather than inherent. Its essence consists in undue retention of the corneous

layer, exfoliation being in abeyance. In treatment our efforts must be directed to promote and secure regular systematic exfoliation of the unduly adherent and effete horny cells. Sulphur thins the epidermis, but adds to the dryness and is apt to set up inflammatory changes. Resorcin, however, not only favors continual desquamation, but tends to leave the underlying surface polished and pliant. Combined with starch and glycerin (the resorcinized glycerin of starch) it proves beneficial in all cases if begun early enough and steadily persevered in. A superfatted soap, to which resorcin and salicylic acid have been added, must also be used. Internal remedies are of little use in ichthyosis, the only one of service being codliver oil in small doses at night.

3. **Ionization in Rodent Ulcer.**—Jones states that the treatment of rodent ulcer has been much more satisfactory of late years. Both the x rays and radium give good results, many cases being cured by them. But in the case of the x rays, an elaborate apparatus is required and there is a certain amount of risk, while radium is an extremely costly material. The author has obtained as quick and satisfactory results much more cheaply and simply by the introduction of zinc, or rather of ions of zinc, into the tissues of the ulcer by means of a continuous current. They exercise a profound influence upon rodent ulcer, causing it to assume the appearance of an ordinary simple sore and in many instances to heal up in about two weeks after a single application. The term "zinc ions" signifies the condition of the atoms of zinc when one of its salts is dissolved in distilled water; when conduction of electricity takes place in such a solution, it takes place only by the conveyance of the electrical charges by an actual movement or migration of the ions. In the case of zinc sulphate, the zinc ions with their positive charges move towards the negative pole and the negatively charged sulphuric ions move towards the positive pole. Now if at the positive pole there is lint wet with a solution of a zinc salt, and if the negative pole be placed at some other part of the patient, the zinc will begin to move inwards on its way to the negative pole the moment the current begins to flow. In an application lasting ten minutes some of the zinc ions will penetrate to a depth of one, two, or three millimetres beneath the positive pole. Rodent ulcer, being superficial in its early stages, lends itself well to medication in this way. The ions enter not only the lymph spaces, but also the protoplasm of each cell they reach. The sulphuric ions move towards the electrode; if this be made of zinc, they combine with the metal to form more zinc sulphate, thus keeping up the supply of fresh ions of that metal. The amount of current shown by the galvanometer enables one to estimate the amount of zinc introduced in a given time. The apparatus required is simple; an ordinary medical continuous current battery, with a galvanometer, a pair of wires, a flat pad for completing the circuit at the negative pole, and a rod or other electrode of zinc. This last is covered with several layers of lint, which serve as a reservoir to hold the two per cent. zinc sulphate solution. This solution must be made of freshly cleaned or amalgamated zinc in distilled water. The electrode or its covers must not be touched with the fingers, as every touch adds sodium chloride and reduces the efficiency of the process by bringing in foreign ions. A current of five, eight, or even ten milliamperes should be used, according to the size of the electrode. The sensation is a burning one, like that of a mustard plaster. If necessary a little pure solution of cocaine can be used. Difficult cases are those with nonulcerated surfaces, and those which have been treated with the x rays or with the knife. This mode of treatment is excellent in pustular eczema, but has little effect in cases of lupus or other forms of tuberculosis of the skin.

5. **Dilatation of the Colon.**—Fletcher and Robinson report the case of a boy, aged twelve years, suffering from idiopathic dilatation of the rectum and colon as far as the hepatic flexure. The abdomen was opened, the colon incised, and evacuated. The boy recovered and did well for almost two years, when he had a sudden attack of abdominal pain, went into collapse, and died in less than forty-eight hours. Among the points of interest were the following: Absence of symptoms in early life, beyond large size of the abdomen and a tendency to constipation. Sudden onset of symptoms; rapid wasting with great abdominal distention. Great improvement in health following the simple operation of completely emptying the gut. Long duration of the improvement. Sudden termination in coma, possibly due to the ingestion of some toxic substance taken in by the mouth. From the success in their case the authors urge that a similar procedure of emptying the bowel by abdominal section be attempted as a routine measure before proceeding to more serious operations. Post mortem examination showed that considerable diminution in the size of the gut had taken place.

6. **The Parathyroids in Man.**—Forsyth's observations on the parathyroid and accessory thyroid glands in man are based on an examination of nearly sixty human cadavers. The number of parathyroids in man has been stated to be two on each side, but he found the number to be very variable. On one side of the neck one parathyroid was present in less than one half the cases, two in about one quarter, in a few cases three, in two cases four, in two cases five, and in one case six. In a few cases no parathyroid at all was found. Their position is inconstant and there is rarely symmetry between the two sides. The most frequent site is on the lateral surface of the thyroid gland, at or near its posterior border beneath the inferior thyroid artery. One third of the glands found lay in this locality. The parathyroid cannot be identified with certainty except by microscopical examination. In size it varies from little more than a pin point up to 2.5 cm. They occur in greatest number in the first year of life, and decrease progressively from then on. Accessory thyroids were frequently found. The writer is not disposed to admit for the parathyroids that physiological value attached to them by many observers.

LANCET

February 16, 1907.

1. Leucoderma and Analogous Changes in the Pigmentation of the Skin (*Erasmus Wilson Lecture*),
By W. H. EVANS.
2. Injury and Deformity of the Epiphysis of the Head of the Femur: Coxa Vara (*Erasmus Wilson Lecture*),
By R. C. ELMSLIE.
3. Some Affections of the Pancreas,
By S. PHILLIPS.
4. A Large Vesical Calculus (18 oz. 5 drms.) Successfully Removed by the Suprapubic Operation,
By H. LITTLEWOOD.
5. A Case of Cancer of the Oesophagus of Unusual Type,
By E. PRATT and C. LOCKYER.
6. Notes on the Value of Bacteriological Examinations of the Blood in Typhoid Fever and Other Bacteræmias,
By F. G. BUSHNELL.

1. **Leucoderma.**—Evans states that loss of pigment from the skin may occur from many causes; it may follow an injury or an inflammation; it may occur in the anæsthetic variety of leprosy; it may result from the retrocession of a psoriatic patch; and it is not rare as the sequela of a secondary syphilitic eruption. All these are secondary; the author limits his remarks to leucoderma, vitiligo, or primary loss of pigmentation of the skin. The disease may occur at any age, but is most frequently seen between the ages of twenty and forty years. It has been observed as early as the fourth year, and also to commence in advanced old age. It is not very rare, but is probably even more frequent

than is generally supposed. The two sexes are fairly equally affected. The disease is more commonly seen in the colored races; this is partly to be ascribed to its being more readily recognizable, and partly to the fact that such peoples live in warm climates. The author thinks that tropical climates have a definite ætiological importance. Leucoderma begins by the appearance of small round spots of a clear white. These steadily increase in size, and coalesce to form large white patches. They have a very definite, clearly defined margin, always convex towards the unaffected skin. This convexity shows that the white area is the abnormal portion. The whiteness is absolutely dull, contrasting unpleasantly with the surrounding pigmented area. Any hairs on the affected part nearly always lose their coloring matter, and occasionally they fall out. The surface is absolutely unaltered in level, and its sensibility is never affected in the slightest degree. The change is merely a change of color and nothing more. Symmetry is an important character of leucoderma; sometimes it amounts to little more than a tendency, but often the symmetrical distribution is extremely well marked. Occasionally the depigmentation is so extensive that a very dark person, such as a negro, may become almost white. The author has been struck by the large proportion of cases of leucoderma in which there have been morbid affections of the alimentary canal, especially ulceration. Many of the cases seen in England have lived in tropical climates and have suffered from dysentery or typhoid fever. The frequency of the connection leads to the suggestion that the cause of the skin lesion is to be sought in the alimentary canal, and that the cause is in all probability a toxine which is absorbed from the intestine, carried by the portal blood stream or by the mesenteric lymphatics into the general circulation when it produces its local effect upon the skin. The chief localizing features are mechanical or chemical, trauma, and light. Pressure probably also plays some part. The actual mechanism of depigmentation is probably the vital action of peripatetic cells. The toxine from the diseased alimentary canal stimulates macrophages to attack the pigment of the skin, the locality being determined by trauma and light. The pigment removed is carried downward into the derma, and also outwards in a centrifugal direction; this last would explain the increased pigmentation seen at the margin. Seldom indeed is it that the peccant macrophages can be induced to retrace their steps and to deposit once more the pigment where it should be. The author carefully reviews the various theories which hold the condition to be of nervous origin, and concludes that in no way does the nervous system have any act or part in the localization of the patches of leucoderma.

3. **Diseases of the Pancreas.**—Phillips discusses some of the affections of the pancreas, dealing especially with cancer and chronic inflammation. The differential diagnosis of the two conditions is of great importance, the following being the main points of distinction: 1. A history of acute onset of symptoms with pain and pyrexia points to nonmalignancy. 2. Glycosuria does the same. 3. The more rapidly the evidence of complete obstruction develops—i. e., the more quickly the fæces become quite devoid of bile, and the more rapidly the gallbladder becomes distended; the more probably is the disease malignant. 4. The greater the distention and enlargement of the gallbladder, the more likely is the disease malignant. 5. Hæmatemesis and melaena point to malignancy as likewise do (6) enlargement of the cervical glands, (7) œdema of the feet, and (8) rapid emaciation and loss of strength. 9. Enlarged glands in the neighborhood of the pancreas are softer and more confluent in malignant than in simple disease, and calculi in the biliary passages and adhesions are much more common in nonmalignant affections.

LA PRESSE MEDICALE

February 2, 1907.

1. Auscultation of the Apex of the Lung in Young Soldiers. Respiratory Acomiales. By G. H. LEROUX.
2. Social Hygiene. Maternal Assistance. By V. BUI.
3. How and When Should the Stomach Tube be Employed?

3. How and When Should the Stomach Tube Be Employed? Martinet divides cases generally into three classes: (1) Those in which the use of the tube is dangerous; (2) those in which the use of the tube is useless; and (3) those in which it is useful. Its use is dangerous in cases of ulcer or advanced morbidness of the stomach. It is useless in temporary digestive troubles, in gastric trouble of nervous origin, or when it is a manifestation of neurasthenia, and in moderate gastrointestinal atony without retention or stagnation of the food. It is useful in the third class of cases for diagnostic and therapeutical purposes. For diagnosis in the removal of the contents of the stomach for chemical and histological examination, and to determine whether the stomach has retained food at a time when it should be empty. Therapeutically for evacuation of the stomach in cases of poisoning, in cases of insufficient motor power, in cases of chronic gastritis, in cases of hypersecretion, and for the introduction of food and medicaments in certain cases.

LA SEMAINE MEDICALE.

February 6, 1907.

Posthemiplegic Contractures, By Professor L. BARD.

Posthemiplegic Contractures.—Bard states the classical division of posthemiplegic contractures into two varieties, the early, which are accidental and transitory, and the late, which are fixed and irremediable. The late contractures appear from six weeks to three months after the attack of hemiplegia, are preceded by exaggeration of the tendon reflexes, progress slowly, are followed by muscular atrophy or progressive nervous cachexia, and finally fix the limbs in characteristic attitudes, flexion of the upper and extension of the lower limbs. The early contractures appear soon after the attack without any regularity, are transitory, are variable in their intensity, and may disappear rapidly, or may sometimes give rise to deformities, but they never create fixed and definitive attitudes. The latter are symptoms of more or less serious inflammation, and therefore partake the same transient and contingently curable nature. The late contractures are signs of degenerative changes, stable and irreparable. He then reports the case of a man, fifty-three years of age, who entered the hospital on the third day of an attack of clearly defined left hemiplegia. The attitude of his limbs was that characteristically produced by late posthemiplegic contractures. The tendon reflexes were exaggerated, foot clonus distinct and easily produced, Babinski's reflex, extension of the great toe, present and well marked. His general condition was good. As these symptoms had appeared within three days of the attack and did not appreciably change during the month he was in the hospital, the case was one in which an early contracture presented all the characteristics of a late contracture, and the author suggests the term "pseudo early" (pseudoprécocé) to designate cases of the class to which this belongs.

BERLINER KLINISCHE WOCHENSCHRIFT.

January 21, 1907.

1. Ascending Tuberculosis in the Female Genital Tract, By P. v. BAUMGARTEN.
2. Concerning the Diagnostic Certainty and the Specificity of the Complement Union Method in Typhus and Paratyphus, By J. LEUCHS.
3. The Application of Light in Dermatology, By KROMAYER.
4. Concerning Subglottic Laryngoscopy, By M. SENATOR.

Silver Spirochaeta,

Novaspirin, an Improved Preparation of Aspirin,

By E. GIERKE.

By J. LEUCHS.

7. The Question of the Secretion of Mucus in the Stomach in Acute, By J. LEUCHS.
8. The Rectum in Typhus, By J. LEUCHS.

2. The Diagnostic Certainty and the Specificity of the Complement Union Method in Typhus and Paratyphus.—Leuchs gives first, in tabulated form, the cultural results of three stocks of typhus and three stocks of paratyphus bacteria which he employed in the preparation of immune sera from rabbits. The efficiency of these immune sera was then tested against extracts from the same bacterial stocks from which they had been obtained, and also against extracts from other stocks. The technique of the experiments is explained and the results, which were obtained, are presented in tabulated form.

3. The Application of Light in Dermatology.

Kromayer reports several cases of red naevus in which he has used the Finsen light. He divides these naevi into three groups: (1) Those due to a dilatation of the subepidermoid capillary network, presenting a bluish red color with a smooth epidermis and no other anomaly; (2) those in which not only the capillaries, but also the afferent arteries are dilated and are usually characterized by a hypertrophy of the connective tissue, which causes the surface to be uneven and irregular; (3) those in which the dilatation and increase of the cutaneous veins forms the prominent feature. He finds that improvement may be expected from the use of the Finsen light in the first and second varieties, but not in the third. Although improvement, or perhaps a cure, may be obtained in cases which belong to the second group recurrence will be apt to appear because the deeper arteries may not be influenced by the treatment with light.

4. Concerning Subglottic Laryngoscopy.—Senator reports a case in which he was enabled to recognize the presence of a small tumor on the lower surface of the vocal cord by means of Gerber's method of subglottic laryngoscopy. The subglottic examination is made by means of a mirror, specially constructed for the purpose, which is introduced into the larynx in such a way as to reflect the lower surface of the vocal cords to the eye of the observer. He considers that the cases in which the use of this method is indicated are quite rare, as they include none except those in which the laryngeal cannot be recognized through the use of the ordinary means of examination.

6. Novaspirin.—Witthauer says that novaspirin does not weaken the stomach and causes no gastric trouble, a respect in which it is superior to aspirin. It is not so powerful as aspirin, and can therefore be given for a longer time and perhaps in larger doses. Its antipyretic action is good, its diaphoretic and analgesic action less so. He recommends its use particularly in influenza.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT.

January 21, 1907.

1. The Spirilla of Tick Fever, By FRÄNKEL.
2. Is the Action of the White Blood Corpuscles Heterolytic? By MOSSE.
3. Concerning Heredity in Ulcer of the Stomach, By HUBER.
4. Pathology of Appendicitis, By FLEISCH.
5. A Case of Recovery From Severe General Tetanus, By GLÄNZEL.
6. A Case of Traumatic Apoplexy Late in Appearance, By HUBER.
7. A Case of Ascending Arteriitis Obliterans After Trauma, By HUBER.
8. Monolateral Drumstick Finger, By GRÜDEL.
9. Concerning the Frequency of Gonorrhoea in Germany, By BLASCHKE.

10. With Regard to Statistics of Gonorrhœa in Men and Its Consequences in Their Wives, By VÖRNER.
11. Concerning the Color Index of the Red Blood Corpuscles, By TÜRK.
12. What Do We Know in Regard to the Active Agent of Vaccine? By MÜHLENS and HARTMANN.
13. Concerning the Superficial Effect of the Percussion Blow, By WEIL.
14. Camilio Golgi, By GALLI.
15. Albert Schinsinger,

1. **The Spirillæ of Tick Fever.**—Fränkel has experimented with the *Spirochata Duttoni*, the parasite of the African tick fever, and states that he is able to demonstrate without difficulty in various kinds of animals which have been made immune that the spirillæ of tick fever are different from those met with in recurrent fever.

3. **Heredity in Ulcer of the Stomach.**—Huber reports nineteen observations in which ulcer of the stomach affected different members of the same family. They render plausible the theory that this disease is hereditary.

4. **Pathology of Appendicitis.**—Flesch believes that there is a hereditary tendency to appendicitis in certain families, and quotes in support of this theory a number of cases in which this disease was present in successive or alternate generations.

5. **Recovery from Severe General Tetanus.**—Glänzel reports the case of a man, eighteen years old, who came under observation with symptoms of general tetanus which had resulted from an injury to the hand. The wound was laid open freely, a foreign body searched for, but not found, thorough disinfection practised, and an antiseptic dressing applied. Two grammes of Tizzoni's antitoxine dissolved in twenty grammes of sterilized water were then injected subcutaneously. Three hours later one gramme of the antitoxine dissolved in ten grammes of water was injected. In the meantime the patient had been given an enema which contained two grammes of chloral hydrate and about midnight 0.02 gramme of morphine was given hypodermically. On the following day the patient's condition was rather worse than better. The wound was reopened, curetted with a sharp spoon, and an antiseptic dressing reapplied. One gramme of Tizzoni's antitoxine in ten grammes of water was injected morning and evening, two grammes of chloral hydrate were given twice, 0.02 gramme of morphine once, and 0.01 gramme once. On the next day there was still no change. Fifty units of Höchster's fluid antitoxine were injected morning and evening, and in addition four grammes of chloral hydrate and 0.04 gramme of morphine were administered. During the next day one gramme of Tizzoni's antitoxine was injected morning and evening, two grammes of chloral in the morning, 0.02 gramme of morphine at midday, one gramme of veronal in the evening, and 0.01 gramme of morphine at night. A marked improvement was evident on the following day, and from this time on there was a steady progress toward recovery.

6. **Traumatic Apoplexy Late in Appearance.**—Hochheim reports a case in which symptoms of apoplexy developed in a man, thirty-four years of age, two months after he had received a severe blow on the head. Recovery was incomplete. The author compares this case with the small number of similar ones which are on record.

7. **Ascending Arteriitis Obliterans After Traumatism.**—Rupfle reports the interesting case of a man, thirty-five years of age, who consulted him on account of complete occlusion of the right brachial artery and of its branches. The patient stated that during the summer two years before he had received a severe blow on the volar surface of the tips of the fingers of the right hand. At first he noticed only a hypersensitiveness of the tips of the fingers, but at the beginning of winter

this became very marked first in the forefinger, then in the middle, the ring, and finally in the thumb. The little finger was not affected. Itching and numbness then gradually appeared in these finger tips, and these were relieved by allowing the hand to bang down. Occasionally, in very cold weather, the finger tips became painful, and the pain was relieved by warm applications. During the following spring and summer attacks of pain grew in frequency until in October the pain had become constant and gave him no rest. It gradually spread to the wrist, the forearm, and the arm, which finally felt as though dead. The right hand was colder and paler than the left. After a careful physical examination in which he found complete occlusion of the brachial artery, Rupfle decided that this was a case of ascending arteriitis obliterans which had originated from the traumatism mentioned, because no other cause could be ascertained.

10. **The Statistics of Gonorrhœa in Men and Its Consequences in Their Wives.**—Vörner criticises in detail the paper on this subject recently published by Erb.

LA RIFORMA MEDICA

February 2, 1907.

1. The Clinical Value of the Blister Test, By C. G. MIRANO.
2. Hypertrophic Tuberculosis of the Pelvic Portion of the Colon, By LUIGI VACCARI.
3. Cholerrhagia and Its Treatment with Adrenalin, By FEDERANDO GANGITANO.
4. A Case of Superficial Inguinal Hernia, By I. BRUCHI.

1. **The Blister Test in Tuberculosis.**—Mirano discusses the clinical value of the examination of the leucocytes found in the fluid of blisters. This test was suggested in 1901 by Roger and Josué in the diagnosis of tuberculous infection. These authors believe that the scarcity of acidophile cells was a positive diagnostic criterion of tuberculosis when found in the fluid of blisters. They also maintain that the degree of infection is inversely proportionate to the number of eosinophile cells in the blister. Mirano's researches did not definitely confirm the diagnostic value attributed to this test by the authors mentioned. According to Roger and Josué a healthy man will show from 19 to 25 per cent. of eosinophiles in the blister fluid, while in the subject examined by Mirano there were 6.75 per cent. of these cells. If the diagnostic test described by the French authors were valid, such healthy persons would have to be considered sufferers from tuberculosis, when they showed a lessened number of eosinophiles. In tuberculous individuals, on the other hand, Mirano could not find the diminution in eosinophiles described by Roger and Josué. Mirano, furthermore, does not find that the swelling and hydropic condition of the cells, which these French authors spoke of as characteristic, is in any way diagnostic of tuberculous infection. This effect upon the cells, according to Mirano, depends upon a peculiar action of the vesicant. Mirano thinks it is much better to examine the blood itself than to examine the blister fluid, as practically the latter is a reflection of the condition of the blood.

2. **Tuberculosis of the Sigmoid.**—Vaccari reports a case of tuberculosis in the lower colon. The patient, a young man of nineteen, was seized suddenly with abdominal pain, followed later by diarrhœa with blood in the fæces and rectal tenesmus. On palpation in the lower left quadrant a hard, slightly movable mass, somewhat painful, was felt, and upon rectal palpation the finger could not reach this mass. When a rubber rectal tube was introduced for twelve centimetres it brought out some blood clot. On microscopical examination no tubercle bacilli were found in the fæces, but the serum reaction of Arloing and Courmont was positive. The diagnosis was a tuberculous lesion in the sigmoid, and as the patient did not improve a laparotomy was performed. The walls of the sigmoid were

found thickened, but without any nodules. The entire segment of intestine between the last portion of the descending colon and the beginning of the rectum was invaded by the process. Under these conditions it was deemed inadvisable to perform any resection or to establish an artificial anus. The abdomen was therefore closed. The case is reported on account of the rarity of this localization of tuberculosis. The point to be noted is that in the early stages at least tuberculosis of the sigmoid does not produce stenosis, and that the chief symptoms to which it gives rise are pain, diarrhoea, and tenesmus. Operative interference is not advisable when large segments of the gut are involved, and especially if the mesentery is infiltrated.

3. Cholerrhagia Treated with Adrenalin.—Gangitano treated successfully with adrenalin a case of cholerrhagia, the latter being a term applied for the loss of bile, which occurs after operations upon the liver. This is a frequent complication of these operations, and while usually the amount of bile lost is slight there may be a very serious loss of this fluid. This loss of bile especially occurs after the removal of echynococcus cysts. Gangitano succeeded in checking a cholerrhagia of severe type, which occurred after the removal of such a cyst from the left lobe of the liver. The patient was losing bile in large quantities, which was oozing through the dressings. The cavity was washed out with sterile water and a mixture of ten parts of adrenalin and of 90 parts of distilled water was injected. The remedy was allowed to act for fifteen minutes, and the cavity once more was washed with sterilized water. This did not do any good, and adrenalin in the pure state was put upon gauze and the latter used to pack the cavity. After the second day from the beginning of this treatment the secretion of bile diminished, and five days later had practically disappeared entirely.

ROUSSKY VRATCH

January 13, 1907.

1. The Digestion and Absorption of Proteids in the Stomach of the Dog, By G. F. LANG.
2. The Temperature Curve in Scarlet Fever, By I. A. BARANIKOFF.
3. A New Syringe for Hypodermic Medication, By A. M. ANTONOVSKY.
4. Report of the St. Petersburg Municipal Lying-In Asylum for 1905 (to be continued), By L. A. KRIBSKY.
5. The Radical Operation for Hydrocele According to Winkelmann's Method, By Z. I. PONOMAREFF.

5. Radical Operation for Hydrocele.—In 1898, Winkelmann suggested the following operation for chronic hydrocele: An incision, 3 to 4 cm. long, is carried from the upper end of the swelling to its lower pole, the tissues being divided down through the tunica vaginalis. After emptying the hydrocele the testes is seized and the tunica propria is turned with the serous surface outward. The edges of the tunica propria are united in front of the spermatic cord so that the testes can no longer enter the cavity of the tunica. The serous surface, together with the testes, is now returned into the cavity of the scrotum, so that the serous membrane faces the wide meshed tissue of the tunica vaginalis communis with which it soon coalesces. The skin suture finishes this completely bloodless operation. The patients recover within three or four days. Since 1898 a number of modifications were introduced in Winkelmann's method, and the results have been found quite satisfactory by most authors. Klaussner collected the histories of 104 cases operated in by Winkelmann's method, among which only two recurrences were noted. Ponomareff, the present author, reports twenty cases operated in by this method, in every case save one under local anæsthesia. A one per cent. solution of eucaine was injected locally, and ten minutes before the operation a dose of morphine was administered subcutaneously. The usual length of the incision was from 5 to 6 centimetres. Two or three, rarely a

greater number of silk sutures, sufficed to retain the tunica in position around the spermatic chord. The chief point in the operation is the complete inversion of the tunica, so that its serous surface should face the subcutaneous cellular tissue. When the sac was large it was difficult to secure this. The pain lasted but three hours after the operation, and some patients got up on the second day. In most patients some degree of œdema appeared in the scrotum on the second day, but gradually disappeared. The wounds generally healed slowly, and the sutures were removed on the seventh or eighth day. Small areas of gangrene of the skin around the wound were occasionally noted, but they remained localized and were probably due to the local anæsthetic. The wound healed better in the single case operated in under chloroform. The thirteen patients who were observed after the operation had no recurrence.

1. Pirogoff and the Problem of Private Aid During a War. (Oration Delivered on the Twenty-fifth Anniversary of the Death of Pirogoff), By N. A. VELIAMINOFF.
2. A Case of Idiopathic Achylia Gastrica, By G. U. IAWEN and M. L. KOHEN-DELBARY.
3. The Temperature Curve in Scarlet Fever (Concluded), By I. A. BARANIKOFF.
4. Changes in the Aorta of Rabbits in Poisoning with Adonidin, By A. P. VESEKOFF.
5. Acetone in Histological Technique, By N. A. VELIAMINOFF.
6. Japanese Firearms and Bullets as Used During the Recent War, from the Surgical Viewpoint, By L. M. POSSEP.

1. Private Aid in Wars.—Professor Veliâminoff, in this address, called attention to the work of Pirogoff, who advocated the thorough organization of private aid to the armies in the field in time of war. This movement originated in Russia in 1854, when the Grand Duchess Helen Pavlovna organized the first order of Sisters of Mercy that ever accompanied an army to the theatre of war. This order was under the direction of Pirogoff. In 1855, Florence Nightingale started her great campaign in England, while in 1859 the campaigns of Napoleon III in Italy gave rise to the foundation of the Red Cross of Geneva by Henri Dunant. In the Civil war in America private aid was organized by Henry Bellows and by Miss Clara Barton, the work including the formation of 32,000 women's associations, and the private subscriptions during that war amounted to \$212,000,000. In the Civil war, private aid seemed to be necessary on account of the distrust of the public of the ability of the government to cope with its tasks. An analogous feeling pervaded the Russian public during the recent Japanese war. Private aid was organized in Russia on a large scale, the funds amounting to about \$20,000,000. (The author does not say anything about the scandals which developed in connection with the disposal of these funds, and the thoroughly organized system of graft that prevailed. It is doubtful whether the soldier in the ranks actually benefited by the generosity of the patriotic people at home.)

5. Acetone in Histology.—Anitchkoff found that acetone so distorts some tissue elements that its use in histological technique is limited. It is useful in the study of some isolated cells as, for instance, on epithelia, nerve cells, etc. Acetone is applicable on hardening tissues for paraffin embedding, and also in rapidly preparing tissues for sectioning in pathological specimens. Acetone is used for hardening, etc., chiefly as a substitute for alcohol, the method having been suggested by Henke and Zeller in 1905.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

February, 1907.

1. The Symptomatology, Diagnosis, and Surgical Treatment of Cervical Ribs, By W. W. KEEN.
2. Compulsory Vaccination, Antivaccination, and Organized Vaccination, By G. DOCK.

3. The Clinical Manifestation and Treatment of Some Forms of Acute Cardiac Dilatation.

By B. ROBINSON.

4. Experimental Studies of Cardiac Murmurs.

By W. S. THAYER and W. C. MACCALLUM.

5. Aneurysm of the Arch of the Aorta; Rupture Into the Superior Vena Cava.

By M. H. FUSSELL.

6. A Study of the Different Forms of Albumin Occurring in the Urine.

By T. W. HASTINGS and B. R. HOOBLER.

7. The Pathology and Treatment of Nephritis.

By R. W. WEBSTER.

8. The Use of the X Rays in Unresolved Pneumonia.

By D. L. EDSALL and R. PEMBERTON.

9. A Brief Study of a Diphtheria Epidemic at the Adirondack Cottage Sanatorium for Incipient Tuberculosis.

By L. BROWN, A. H. ALLEN, and E. J. S. LUPTON.

10. The Chemical Affinity of Mucus for Hydrochloric Acid.

By N. B. FOSTER.

1. **Cervical Ribs.**—Keen contributes an exhaustive paper on this vice of development which may or may not be associated with other developmental faults. Symptoms may be entirely wanting, and when they occur it may be at a late period in life. The x ray is responsible for the discovery of a large number of cases in recent years. It is more frequently bilateral, but one rib may be less well developed than the other. In most cases it arises from the seventh cervical vertebra. Four degrees of development have been noted, from a mere rudiment to a completely organized rib. The anomaly is of especial importance because of its anatomical relations to the subclavian artery and vein, the brachial plexus, the muscles, and the pleura. When the vessels and nerves pass over the rib the results may be serious. Symptoms are: 1. There may be a hard tumor in the neck with a high and obliquely pulsating subclavian artery. A skiagraph will usually decide the question. 2. There may be severe neuralgic pain, perverted sensation, and hoarseness. 3. There may be thrombus in the subclavian, gangrene of the extremity with œdema, and a suggestion of aneurysm. 4. There may be wasting of the muscles of the arm, dysphagia, and scoliosis. Treatment consists in removal of the bone.

2. **Vaccination.**—Dock concludes an interesting consideration of the various aspects of this subject with the following propositions: 1. Present methods, which vary so widely in different states make certain a high ratio of smallpox cases with low protection to the individual. 2. There is nothing in the fundamental law of the land to prevent the passage of efficient vaccination laws. 3. Such laws should aim at widespread protection by vaccination and revaccination. 4. Compulsion should not be necessary and should not take the place of safe and certain vaccination. It should not be practised when there is doubt as to the fitness of the subject. 5. The operation should receive permanent record, and a certificate from an authorized official should be sufficient proof of vaccination. 6. Operators must be trained for their work, familiar with vaccination laws, and obedient to them. 7. The manufacture of vaccine should be controlled by experts and institutions established to facilitate its distribution. 8. The operation should be done at definite periods of the year when epidemics are prevalent, and in suitably equipped places. The patient should be examined after the operation at a fixed time, or at once, if complications are suspected. Private vaccination should be permitted only under special conditions; proper details being required.

4. **Cardiac Murmurs.**—Thayer and MacCallum base the statements of their paper upon experiments made upon dogs. Murmurs of all kinds were induced; the following is a summary as to the basic systolic murmurs which were investigated. As to the aortic murmurs: 1. Systolic murmurs at the aortic ring were

never found in the normal heart. 2. Nitroglycerin or adrenalin would not produce them. 3. They appeared in conditions of low pressure. 4. Adrenalin with resulting rise in pressure causes the disappearance of a murmur. 5. Systolic aortic murmurs were present after the infusion of salt solution subsequent to hæmorrhage. 6. Such murmurs were associated with abrupt action of the ventricle and large excursions of the pulse. As to the pulmonic murmurs: 1. Systolic murmurs may be produced by pressure on the conus arteriosus or the pulmonary artery. 2. They may be developed after hæmorrhage. 3. They may occasionally be developed after the administration of nitroglycerin. 4. They may be increased by adrenalin, but diminish with the succeeding period of high pressure in the general circulation, increasing again when the pressure falls. 5. They are usually developed by infusion of salt solution. 6. In general they may be developed by conditions which cause abrupt action of the right ventricle, and large excursion of the pulse wave in the pulmonary artery.

6. **Forms of Albumin in the Urine.**—Hastings and Hoobler accept the general conception of the term albuminuria, namely, albumin in the urine as excreted from the bladder. The albumin bodies of endogenous origin occurring in the urine include serum albumin, serum globulin, fibrinogen, fibrin nuclealbumin, nucleoproteid, mucin, albumose, digestive albumose, and true peptone. The four of these which are most significant are serum albumin, serum globulin, nuclealbumin, and albumose. Four tests were used in a great number of urine analyses made by the authors: (1) Heat and acetic acid; (2) cold acetic acid with diluted urine; (3) heat and acetic acid, after first adding saturated sodium chloride solution; (4) the test for serum globulin. Serum albumin must be differentiated from nuclealbumin in testing urine, the latter being of little clinical importance. The cases of well established Bright's disease in which the symptoms and physical signs pointed to renal lesion included only 12.59 per cent. of all the cases in which albuminuria was found by the authors. Albuminuria does not necessarily nor usually indicate nephritis. If casts are present also there is probably nephritis, either temporary or permanent. The authors wish to emphasize the frequency of nonrenal albuminuria and the occurrence of nuclealbuminuria alone in a large percentage of cases. The separation of the albumin bodies as a matter of practice is not necessary.

9. **A Diphtheria Epidemic.**—Brown, Allen, and Lupton offer these conclusions: 1. In institutions during a diphtheria epidemic immunizing doses of antitoxine of 500 units or more should be given at the end of two and again at the end of four weeks. 2. Diphtheria may occur two weeks after such an immunizing dose. 3. If immunization is carried out it may not be necessary to separate those who have positive cultures from the nose and throat without clinical symptoms from those with negative cultures. 4. One negative culture from the throat is not enough for diagnosis nor for raising quarantine. 5. Cultures from the nose need not be taken except in nasal diphtheria. 6. Isolation for three or four weeks under a competent nurse is desirable. 7. A rash, swelling, and malaise with slight temperature, may follow injection. 8. If outdoor treatment is insisted upon an epidemic will usually be brief. 9. Patients with pulmonary tuberculosis during such an epidemic should be treated like others who are without diphtheria. 10. Should such patients contract diphtheria they must be moved out of doors as soon as possible. 11. Mild diphtheria has no harmful influence on the pulmonary lesion. 12. The antitoxine has little or no effect on the tuberculosis. 13. Complications after diphtheria are no more frequent in the tuberculous than in the nontuberculous.

ANNALS OF SURGERY.

February, 1907.

1. Sequestration Anæmia in Deep and Shallow Sequestra.
By R. H. M. DAWLARN.
2. Papillary Cystadenomata of the Breast.
By R. B. GREENOUGH and C. C. SIMMONS.
3. Puerperal General Peritonitis.
By E. McDONALD.
4. Subacute Perforation of the Stomach and Duodenum.
By B. S. A. MOYNIHAN.
5. Report of a Case in Which a Large Number of Foreign Bodies Were Removed From the Stomach.
By A. E. BENJAMIN.
6. Sarcoma of the Small Intestine and Mesentery.
By G. BARLING.
7. Congenital Lumbar Hernia at the Triangle of Petit.
By C. N. DOWD.
8. Tuberculosis of the Bladder.
By G. WALKER.
9. Recurrent Intermittent Retention of Urine Occurring With the Remission in a Case of Pernicious Anæmia. The Final Result of a Bottini Operation for Associated Prostatic Hypertrophy.
By J. H. CUNNINGHAM, JR.
10. Arthroplasty Upon the Elbow Joint.
By C. L. SCUDDER.

1. **Sequestration Anæmia.**—By sequestration anæmia, Dawlarn means the confinement, to a considerable degree, of the circulating blood in the lower extremities by means of rubber tubes fastened around the thighs near the junction with the body. It nearly stops the venous flow, but not the arterial. The author thinks the following are the chief advantages of the method by sequestration in certain varieties of brain work: 1. Diminution in the quantity of anæsthetic required, with relative safeguard against bleeding from straining connected with vomiting, also against hernia cerebri, also against lowering of vital heat. The operative analgesia is only to be obtained with limbs well swollen and dusky. 2. Easy control of hæmorrhage during operation on account of lessened intravascular tension. 3. Shortening of the operation because of dryer field. 4. Lessened danger of sudden death from pressure upon the respiratory centre with lowered intracranial pressure on account of accumulation of the blood in other parts of the body. 5. More space between the brain and its envelope, thus enabling the surgeon to remove clots, or separate adhesions without risk of laceration of the brain surface.

2. **Papillary Cystadenomata of the Breast.**—Greenough and Simmons thus summarize a study of twenty tumors of this type. The tumors were single or multiple, involving the large ducts near the nipple, and contained one or more cavities from which grew papillary outgrowths containing a stroma of fibrous tissue and an abundant growth of duct epithelium. They may occur in the male breast, and they occur at all ages and independent of trauma, marriage, or lactation. Usually painless, they are small, but may attain the size of an orange. They are usually near or beneath the nipple, and develop slowly. The most characteristic symptom is a serous or bloody discharge from the nipple, but do not cause enlargement of the axillary glands. Fifteen per cent. of the cases were associated with adenocarcinoma of a low grade of malignancy. Such tumors should be entirely removed, by excision or by amputation of the breast, and the excision may be made by plastic resection or by an areola incision. The association of several of these tumors with cancer justifies their separation from other fibroepithelial tumors of the breast in clinical and patho-

3. **Puerperal General Peritonitis.**—McDonald observes that the problems of puerperal infection are still unsolved, and that aseptic methods have resulted in no decided advance as to its prevention and treatment. Its course is not materially different from that of severe infections in other parts of the body. As causes are mentioned increased susceptibility of the pregnant woman, disturbed metabolism, traumatism,

and changed anatomical relations. The endometrium is the usual point of entrance of the infective material. Streptococcus infection with lymphangitis is the most common variety of the disease, but the gonococcus, staphylococcus, pneumococcus, and colon bacillus are responsible for many cases. The presence of pathogenic microorganisms in the lochia does not prove that infection is necessarily present. Of the clinical symptoms pain is almost invariably present and is believed to be due to an accompanying lymphangitis. Other symptoms are abdominal rigidity, vomiting, and oscillating temperature. A weak and rapid pulse is more positive evidence of the disease than is fever. The red blood cells are diminished and the leucocytes are increased. Treatment by antistreptococcic sera has not given brilliant results. An abdominal section with both abdominal and vaginal drainage is often useful if performed at an early period. The prognosis is frequently bad, with or without an operation.

4. **Subacute Perforation of the Stomach and Duodenum.**—Moynihan thinks this accident is by no means a rare one. He has operated for its relief in fifteen cases. The ulcer which ruptures is always of the chronic variety. It occurs suddenly, but the contents of the viscus are not poured out profusely as in acute rupture, and hence there may not be extensive resultant peritonitis. He has seen this lesion under the following conditions: 1. An empty stomach. With an acute ulcer the stomach is usually full. 2. The opening of the ulcer may be plugged with a fragment of omentum. 3. The opening may be sealed by layers of plastic lymph, which check the diffusion of the stomach contents. 4. The stomach may become adherent at the base of the ulcer to the abdominal wall, the liver, or the pancreas. The symptoms are the same as in acute perforation, but are not so intense. The chief difficulty in the diagnosis of this lesion when near the pylorus is in differentiating it from cholecystitis. If the case is seen at the onset of the perforation the author believes it is wisest to treat it as if it were an acute perforation, that is, by immediate operation, but it may be desirable to do a gastroenterostomy.

THE PRACTITIONER

1. The Treatment of Some of the Forms of Gout.
By G. H. BATE.
2. Posterior Lateral Resection of the Vertebral Column of Mikulicz and Wladmiroff, with Report of a Case, and Remarks on the Operative Technique and the Applicability of the Procedure.
By A. YOUNG.
3. Valvular Disease of the Heart. Tricuspid Stenosis.
By T. C. CANNON.
4. Post Partum Hæmorrhage.
By E. S. BISHOP.
5. The Interpretation of Sphygmograph Tracings and of Tracings Produced by Compressing the Brachial Artery. The Factors Which Are Involved by the Production of Anacrotism.
By T. LEWIS.
6. Intracranial Abscess. When and When Not to Operate.
By J. WYLLIE.
7. On the Possibility of Two West African Diseases Akatama and Vonulo Being Malarial Paroxysmal Neuroses.
By F. C. WELLMAN.
8. Orthopædic Surgery.
By A. H. TUBBY.
9. The Relative Value and the Selection of Disinfectants.
By G. H. BATE.

1. **The Treatment of Some Forms of Gout.**—Luff calls gout the result of faulty intestinal and hepatic metabolism with autointoxication. The climax usually consists in the deposit of sodium biurate in the joints or tissues. Uric acid has an unmerited importance in this disease, since it is poisonous only to a slight degree. The following are the objects of treatment: (1) Relief of the pain in the acute paroxysm; (2) relief of the subacute or chronic condition, and prevention of recurrence; (3) removal of deposits from the joints and prevention of permanent deformity; (4) treatment of irregular or abarticular forms. For the acute at-

tack the author advises calomel and a saline, raising the member attacked and applying a soothing lotion. Internally colchicum with an alkali may be given, aided by veronal or trional if there is insomnia. In sub-acute gout guaiacum may be added to colchicum, sodium salts being also given as hepatic and gastrointestinal stimulants. Potassium iodide will be useful if neuralgia is a complication. For the swollen joints hot douches, or alternate hot and cold, followed by sponging with cold salt water, galvanism, and massage, are recommended. For gouty dyspepsia the diet is to be carefully regulated and taka diastase and magnesium peroxide may be taken internally. The diet need not be free from proteids, but they must be taken in moderation the entire regimen being based on simplicity.

2. Tarsal Resection of the Foot.—Young quotes with approval the indications for this operation advanced by Mikulicz, namely: 1. Caries of the foot, where the disease is confined to the astragalus, the os calcis, and the ankle joint. 2. Extensive loss of skin substance in the heel. 3. Injuries, especially gunshot, with destruction of the heel. He doubts the justification of the second of these indications, however, since skin grafting to an extensive degree is now done so very successfully. Malignant growths, shortening of a limb from accident, osteomyelitis, and paralytic talipes, are further indications. A case with tuberculous disease of the right tarsal bones was subjected by the author to this operation, the only portions retained being fragments of the three cuneiform and the cuboid. A suitable shoe and leg support is of course always required after so extensive an operation, but the advantages over amputation of the foot are very great, and in the case in question, after four years of experience, the functional condition was found very satisfactory.

3. Tricuspid Stenosis.—Crawford speaks of the great difficulty in the diagnosis of this lesion. In a table of 117 cases, by Lendet, it was made out during life only six times. The lesion is almost always combined with mitral stenosis, and both usually result from rheumatism. The patients are mostly females and rarely more than forty years old. With the usual signs of mitral stenosis are associated, when combined with the tricuspid lesion, a feeble thrill and murmur over the sternum. The enlarged auricle is also likely to be notably enlarged, and before the heart breaks down there is likely to be subcutaneous dropsy, turgidity of the jugular veins, cyanosis, and dyspnoea. The prognosis is very bad in congenital cases, children seldom exceeding the fourth or fifth year. In the acquired disease the average duration of life is thirty-five years. The prognosis will depend upon the severity of the back pressure and the power of response to measures of relief. These measures should aim more at the relief of resistance than at increasing the power of the heart. The heart needs soothing and rest, and if these are obtained relief for a considerable period may result.

5. Sphygmograph Tracings.—Lewis offers the following conclusions to his paper: 1. Pulse tracings taken with the Dudgeon sphygmograph show disproportion in the ordinate lines. The systolic phases of the waves are exaggerated, compared with the diastolic. If several varying traces are taken from the same pulse, the safest criterion in choosing a tracing is the relative excursion of the diastolic phases. 2. Compression tracings are of value, since they prolong the diastolic phases of a beat and allow easier investigation of the outflow of blood. They provide a clinical method for testing the diastolic pressure of the pulse, especially valuable in aortic regurgitation. 3. The majority of anacrotic pulses and flat topped pulses have common factors of origin, the latter being a later stage of the anacrotic pulse. Anacrotism is produced locally by a loss of the normal relationship between the pressures

of the wave entering a vessel and the resistance encountered in the vessel. General anacrotism depends on the same cause, though the wave in this condition is anacrotic from the beginning.

6. Intracranial Abscess.—Wyllie urges the supreme importance of operating for this condition as soon as the symptoms point with reasonable certainty to its diagnosis. Most important is the state of the pupils: if they respond quickly to light pressure from abscess accumulation may be excluded, though headache, vomiting, paralysis, and disordered reflexes may be present. When they become sluggish or fail to react to light the chances for favorable operation are slight. If they are contracted and insensitive, or dilated, and unequal an operation is likely to prove fatal. Rigors suggest breaking down of tissue, when there is drowsiness, rapid pulse, fever, and active pupils, but with coma lowered pulse and inactive pupils they signify septic absorption. Convulsions at an early period signify only cerebral irritation, at a late period and followed by paralysis they signify pressure upon or destruction of nerve centres. The first stage of the pyogenic process is that of nutrition, the second of pressure, the third of pressure plus toxæmia. The first stage may continue days or weeks with headache, vomiting, stupidity, constipation, fever, paresis, and normal pupils. The second stage lasts but a short time with exaggeration of the symptoms mentioned, and is the time for operation. The third or toxæmic stage does not imply absolute hopelessness after operation, but the chances are poor, especially with convulsions, blindness, and optic neuritis.

7. Akatama and Vonulo.—Wellman thinks his investigations have shown that these two West African diseases are not associated with malaria. As to akatama, he found the average spleen index, blood condition, and post mortem condition of the tissues at variance with that of malaria. The disease is confined to the Angola highlands of West Africa, being markedly absent from some of the well known malaria districts. The well marked rigors by which it is characterized militate against its being a malarial vasomotor paroxysmal neurosis. Vonulo has almost the same reasons for being excluded from malaria. As in the case of akatama no other cause for its occurrence has been demonstrated, though cultures have been made from the sputum, and examinations of the blood and excreta. The possibility that these two little known diseases may be malarial cannot be dismissed from the mind, though its existence has not been demonstrated, and we are equally in the dark with respect to any other possible cause.

9. The Relative Value and the Selection of Disinfectants.—Bate thinks the present methods of gauging disinfectant values are unsatisfactory, and that it is impossible from data now available to arrange the order of their value. The ideal disinfectant must not exhaust itself indiscriminately upon organic matter, living or dead, and must have the specific power of killing living germs without being too readily used up in the process. It should also do its work in a short time, and if it has a slight odor it will be useful to disguise the odors of the sick room. If it is used to disinfect fluid material its dilution by such material must be remembered in preparing a solution of desired strength. It has been proposed as a standard that it should be based upon the destruction of *Bacillus typhosus* in a broth culture, and that phenol should be the standard for comparison.

THE MILITARY SURGEON

March, 1907.

1. Tendon Tissue *versus* Catgut. By NICHOLAS SENN.
2. Laboratory Work Aboard Ship. By ALFRED W. BALCH.
3. Penetrating Wounds of the Abdomen. By R. R. WREDIN.

4. A Case of Multiple Gunshot Wounds.

By LEON T. DE WALD

5. A Case of Fracture of the Skull.

By SAUL M. W. GORDON

6. First Aid Splint Packet.

By RAYMOND SPEAR

7. Natural versus Mechanical Ventilation of the Lungs.

By PRESTON H. BAILHACHE

1. **Tendon Tissue versus Catgut.**—Senn, after giving a historical sketch of the material used as ligatures asks: What is catgut? How this material was ever called by this name is unexplainable, because catgut literally means the intestine of a cat, while the catgut in use is made of the small intestines of the sheep. After describing the method of preparing catgut for its use in surgery he speaks of tendon tissue, and states that the compact, nonelastic tendon tissue of some of the larger land and sea animals furnishes the most desirable and useful material for buried sutures and ligatures. The primitive fibrils of firm nonelastic tendons are arranged longitudinally, and will not yield under the traction to which they are exposed when employed as sutures or ligatures. The dense connective tissue of which tendons are composed is but scantily supplied with bloodvessels, and is less subject to microbic invasion than any other tissue in the body, with the exception of cartilage. The comparative avascularity of tendon, the compactness of the fibers of which it is composed, resist cell invasion and absorption for a much longer time than muscle, elastic and loose areolar tissue. The tendon suture of the same size as catgut and prepared in the same manner can be depended upon to serve much longer as an efficient mechanical support than catgut. Dr. Senn became interested in tendons of large sea animals as a substitute for catgut last summer during his trip to the heart of the Arctic with Commander Peary. The skill of the Eskimo women as seamstresses attracted his attention; they make their own thread out of the tendon of the narwhal (*Monodon monoceros*). He acquired tendons of this mammal and upon his return prepared them and used them in his operative work. The results were all that possibly could be desired. He observes that the fresh tendons of the animals in the arctic regions are not only aseptic but slightly antiseptic, as these animals imbibe iodine from the sea water and ingest it with their food. This material could be obtained for a trifle from the natives through the agency of whalers who visit the east coast of Greenland annually. He also experimented with the tendons of other arctic animals and comes to the conclusion that the tendon of the narwhal comes first, of the walrus next, and of the whale last. He is satisfied that the tendon tissue of these sea animals of the arctic regions is far superior to the tendon tissue of land animals, from anatomical and bacteriological standpoints, and he hopes that it will receive the attention to which it is entitled by its intrinsic qualities.

2. **Laboratory Work Aboard Ship.**—Balch gives an interesting report of the laboratory work aboard ship. He says that the naval test case and microscopical outfit now supplied to naval vessels is sufficiently complete for any ordinary diagnostic work which may arise. He reviews the bacteriological examinations, the examinations of the blood, urine, stomach, feces, and water.

3. **Penetrating Wounds of the Abdomen.**—Wredin, chief surgeon of the Russian army in Manchuria during the late Russo-Japanese war narrates his experience and comes to the conclusion that the active operative intervention, when admitted by the general condition of the wounded and the surrounding circumstances, is indicated in all cases of perforating wounds of the abdominal cavity with the exception of wounds inflicted with the modern small caliber undeformed rifle bullet. In cases of wounds inflicted with the modern

rifle bullet the expectant treatment, as the most rational one, gives the best results. All wounded in the abdomen need full rest at least during the first week after the infliction of the wound.

New Inventions.

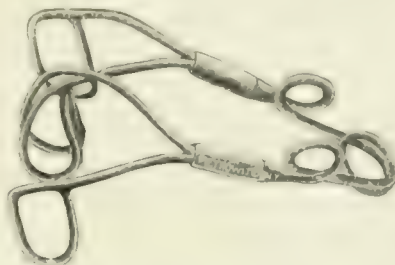
A SELF RETAINING NASAL SPECULUM.

By A. J. HERZIG, M. D.,

New York,

Surgeon in Chief, Harbor Dispensary, Eye and Ear Department.

The accompanying cut represents a new self retaining nasal speculum. In employing this instrument the operator is able to use both hands for his work, and also to see both sides of the nasal cavities at the same



time. To use the instrument, compress the lower portions and introduce into both nasal orifices at the same time. Then allow the parts to spring apart, the middle brackets holding upon the septum. The side brackets are regulated and curved by the operator to suit the sizes and shapes of various nostrils.

Letters to the Editors.

BIRTH PALSIES.

1344 SECOND STREET.

RENSSELAER, N. Y., February 15, 1907.

To the Editors: The able article in a recent number of your journal, on The Surgical Treatment of Birth Palsies, tempts me to record a proceeding of my own in the line of possible prevention of such palsies which I have never seen in print and which I had to learn for myself, having had ample time in a practice of thirty-four years. The idea is, in forceps cases, to unlock the forceps, between the pains, keeping a finger under the lock to protect the tissues of the mother, and then to close the forceps gently before the coming pain gathers force. There is usually time enough, too much it often seems, but a quick delivery is nearly always a mistake, except under rare and unusual circumstances.

VIRGINIA HARLEY MCKNIGHT.

AMAUROTIC FAMILY IDIOCY.

21 EAST SIXTY-FIFTH STREET.

NEW YORK, February 21, 1907.

To the Editors: In your issue of February 16th, Dr. Alfred Gordon, of Philadelphia, published an article entitled Cases Allied to Amaurotic Family Idiocy, with Remarks on the Pathogenesis of the Affection. I have refrained hitherto from protesting against numerous mistaken diagnoses with reference to this disease, as recorded in articles published both here and abroad, and while it is very gratifying to me to note that the disease in question is attracting so much attention, such misleading statements as are contained in Dr. Gordon's article cannot pass unnoticed. It is not necessary to take up his statements in detail, for the cases to which he refers are so widely different from those described

by Tay and myself that there is no possible resemblance between those to which he refers and the type to which he thinks they are "allied." All I need to say in this connection is that youthful patients, suffering from mental enfeeblement and from some form of defective vision, are not necessarily afflicted with amaurotic family idiocy.

If Dr. Gordon would confer with some of his distinguished confrères in Philadelphia, a plausible diagnosis of his cases will be easily established. I am loath to deprive them of this privilege. B. SACHS.

Proceedings of Societies.

PHILADELPHIA NEUROLOGICAL SOCIETY.

Meeting of October 23, 1906.

The President, Dr. D. J. MCCARTHY, in the Chair.

(Continued from page 430.)

Facial Diplegia Associated with Labioglossolaryngeal Paralysis.—Dr. ALFRED GORDON exhibited a patient and stated that the woman had bulbar palsy and presented some unusual features. The orbicularis palpebrarum, also the external recti muscles, were equally affected. This pointed to a probable association of the nucleus of the upper facial nerve with that of the sixth. Another interesting feature of the case was the total motor aphasia, which was quite unusual for the classical bulbar palsy where dysarthria or anarthria only was present. Finally, the patient presented a total suppression of salivary functions; her mouth was unusually dry. The most important point about the case was the involvement of both superior facial nerves, as such an occurrence in association with the typical bulbar palsy had been reported only in family bulbar palsy of children.

The PRESIDENT stated that two months ago he had seen a case five weeks after an attack of diphtheria. The symptom group of cranial nerve involvement was rather irregular; the first symptoms were those following usually an attack of diphtheria with paralysis of the soft palate, with regurgitation of fluids through the nose, and followed after several weeks by a paralysis of the seventh on one side and later both sixth nerves and then by involvement of the third nerve and subsequently paralysis of the ninth and tenth, with disturbance of the diaphragm and very shallow respirations. The patient, however, finally recovered, but it seemed that there was some latent intoxication indirectly connected with the previous attack of diphtheria. He thought the case Dr. Gordon had presented would correspond in a way to the case just narrated; some time after an attack of diphtheria or throat infection there had been involvement of the cranial nerves, multiple and more or less bilateral.

Dr. SPILLER said he had seen several cases of palsy following diphtheria. He had never seen a case of bulbar palsy occurring in an adult with involvement of the upper part of the face. Cases of muscular dystrophy involving the muscles innervated from the medulla oblongata and pons and cases of multiple cranial neuritis causing bulbar symptoms had been observed. The patient presented by Dr. Gordon had the ability to lower her eyelids when she looked downward, but she could not close her lids when she tried to do so voluntarily.

Dr. SPILLER thought the hypæsthesia of the face and reaction of degeneration strong evidences of multiple neuritis. Another point of importance was in regard to vision. The woman talked like a person with bulbar palsy, and not like one with aphasia.

Dr. GORDON stated that the "yes" that she said is very indistinct, and the "no" was absolutely indistinct. As to the lesion in this case, he did not think it was

of a cortical nature. He believed it was a case of poliomyelitis; the nuclei involved were those of the sixth, seventh, ninth, tenth, and twelfth nerves.

The Second Anatomical Proof of the Value of the Paradoxical Reflex.—Dr. ALFRED GORDON presented this communication. After briefly reviewing Dr. Dercum's communication made at the February meeting concerning a patient with a hæmorrhagic pachymeningitis, who during life had presented the paradoxical reflex on the side opposite the lesion, Dr. Gordon reported another case in which the paradoxical sign existed on one side without the Babinski or Oppenheim phenomenon. The operation was based exclusively upon the existence of this reflex, and when careful decompression was done the reflex totally disappeared. The patient recovered completely. This was verified by Dr. Mills and Dr. Dercum at the Jefferson Hospital, where the patient was placed. Incidentally, Dr. Gordon mentioned another case of epilepsy which was now under his care at the same hospital. Upon admission the patient presented no abnormal reflexes. While in the hospital he was attacked with convulsions. Immediately after the knee jerk became increased and a distinct paradoxical reflex appeared on both sides; Babinski's sign was slight on one side, but there was no Oppenheim sign. Six days after the seizure all abnormal reflexes disappeared completely. Dr. Gordon drew the conclusion that his reflex was a sign, to say the least, of cerebral irritation (motor area) or of a beginning lesion of the motor pathway, while the Babinski phenomenon was a sign of a well established lesion of the same tract.

Dr. MILLS stated that it might be interesting to Dr. Gordon to know that a few days ago, in his office, he had had a case in which this paradoxical reflex was present on one side when neither the Babinski nor the Oppenheim phenomenon could be elicited. Curiously enough, this was a case of multiple neuritis of acute but not very severe type. The woman was still able to keep her feet, and got to Dr. Mills's office with a member of her family from somewhere out of town. She had not lost her knee jerks. Dr. Mills expressed his pleasure in being able to testify to the two cases. He had in many cases examined patients or had them examined by his assistants in his presence for this paradoxical reflex, at the same time that the Oppenheim and Babinski reflex were tested for. He had never seen the paradoxical reflex demonstrable when the Oppenheim and Babinski reflexes were absent, except in these two cases. The great value of a sign of this kind was shown when one could elicit it in the absence of other signs. If it could be elicited in the absence of other signs, it had certainly some value.

Dr. DERCUM stated that he had seen Dr. Gordon's sign a number of times independently. He had demonstrated it in his clinic only a week ago, when it was the only symptom present, the Oppenheim and Babinski signs both being absent in a case of mild hemiplegia, with slight exaggeration of the knee jerk on the paralyzed side. Deep pressure upon the gastrocnemius and soleus near the origin of their tendon gave extension of the toe as a marked, clean cut reaction.

In regard to the first case Dr. Gordon had spoken of, the man in whom it occurred was an assistant in the clinic at Jefferson. Dr. Dercum had studied him very carefully. He had a Gordon sign, and no other sign except an exaggerated knee jerk. The case was one of hæmorrhagic pachymeningitis. Dr. Keen operated upon the opposite side of the head, and as soon as the skull was opened there was a tremendous gush of bloody and serous fluid; immediately afterward the Gordon reflex disappeared. A few days later the man became restless and Dr. Dercum again tested him for the Gordon reflex; it was again present. The wound was reopened, retained discharges were allowed to escape, and again the Gordon reflex disappeared. To Dr. Der-

even this was a clear demonstration of the value of this reflex. He regarded it as a distinct addition to our clinical knowledge. It would certainly often enable us, in the absence of other signs, to determine which side to attack in case of an operation.

The PRESIDENT stated that when Dr. Gordon had brought his reflex to the attention of the society, some months before, he had thought it was identical with or a modification of the Oppenheim and the Babinski reflexes. Since that time he had made extensive trials for it and found it in a case diagnosed as a præfrontal tumor transferred from the insane to his service at the Philadelphia Hospital. In this case it was the only sign apart from some mental phenomena present. He had found the Babinski reflex present in several cases in which the Gordon reflex was not present. If the condition was to be considered as a modification of Oppenheim's reflex, he was sorry to hear Dr. Mills give this case of multiple neuritis as an example of the reflex. If there was anything in the case, it lessened the value of Dr. Gordon's reflex as a symptom of disease or disturbance of the central motor tract. At the same time the case quoted by Dr. Dercum seemed to show that the reflex was certainly an addition to methods of clinical diagnosis. From all the investigations he had carried on, Dr. McCarthy was still confused as to its exact value. The cases in which it occurred in which the Babinski sign was also present, and the cases in which it did not occur and the Babinski sign occurred, had not come to autopsy—or, if they had, Dr. McCarthy had not followed them; that was the difficulty with the work at Blockley, where the next service came along and, in the absence of the chief making the original observation, the cases were not followed up.

Dr. GORDON said, concerning Dr. Mills's report, that he wished to relate the following fact: A patient came to Jefferson Hospital with a supposed sciatica on one side. He was examined as usual very carefully and Dr. Gordon found a distinct paradoxical reflex on the diseased side, with an exaggerated knee jerk. A month later the patient showed weakness on the opposite side and had difficulty in micturition, and finally the case turned out to be one of myelitis with difficulty in walking and paraplegic symptoms.

In regard to Dr. McCarthy's remarks, it was true that we did not have many autopsies; but what about Dr. Dercum's case reported in a September issue of this *Journal*; also, what about his case, verified by Dr. Mills and Dr. Dercum, where there had been, not only before the operation the reflex demonstrated in a clean cut manner, but also disappearance of it after the patient recovered from the immediate effect? As to the reflex being a modification of the two other reflexes, Dr. Gordon said he did not know. We could not give the proper explanation for any of these reflexes, but simply strong inferences.

Besides these two anatomical proofs, Dr. Gordon was in possession of a number of clinical facts showing the value of this sign. As to its exact significance, he stated that he could only repeat what he had stated in his first clinical contribution, viz., the paradoxical reflex was a delicate sign of an early stage of a lesion or only of irritation of the motor tract. The latter particularly was seen from the case examined by Dr. Mills and Dr. Dercum; Babinski's sign showed a definitely established lesion of motor system. Dr. Gordon stated that he had examined two hundred and fifty normal persons, and has never found the presence of the paradoxical reflex. It was always in conjunction with any of the classical symptoms pointing to the involvement of the motor tract. The demonstration of the reflex depended a great deal upon the method. If the rules laid down by Dr. Gordon in his original contribution were adhered to, he believed it would be demonstrated in a larger number of cases.

Book Notices.

Practical Surgery, in Cases and Principles. By M. D., Examiner in Surgery, Board of Regents of the University of the State of New York; Emeritus Professor of Surgery in the New York Polyclinic, etc. Containing 888 Text Illustrations and Four Colored Plates, all Original. Two Volumes. Philadelphia: W. B. Saunders Company, 1907. Pp. ix-722, ix-711.

The appearance of this book within a few months of the author's death makes it the final expression of his life's work, the summation of his study and experience, and it is painful to think of the fugacious character of the labor and investigation included within these pages. With Fowler living the book would have been popular and in demand during all his years; with Fowler dead, how soon will it join the works of Gross and Agnew and others that were popular during the authors' life, but since their death are rarely consulted.

The author aimed to bring together in these volumes the most recent and improved methods of surgical practice, and to arrange these with the aid of numerous cross references in a form to be readily available to the student and practitioner. Preliminary to the consideration of surgery in general, the fundamental principles that underlie that science are set forth, and the work opens with a section on inflammation that describes the tissue changes which follow the infliction of wounds and the bacteriological infections that are associated with the condition.

The section on injuries and diseases of separate tissues is followed by one on gunshot injuries that is illustrated by some excellent Japanese photographs of gunshot wounds received during the Russo-Japanese war. Bacteriology is necessarily the basis of the section that describes erysipelas, gangrene, septicæmia, pyæmia, tetanus, and rabies, and the inoculation or serum treatment is recommended for the two last named diseases. In the chapter on syphilis it is held that the disease is caused by a microorganism, but no mention is made of the spirochæta.

Tumors are classified according to their structural characteristics. While it is held that the only trustworthy method of dealing with a tumor is to effect its removal or destruction, there is no description of the methods by which the latter could be accomplished.

The value of the section on laboratory aids in surgical diagnosis in a work of this kind seems questionable; it is too brief to be satisfactory, and the whole subject should be relegated to a work on clinical diagnosis.

The sections on the general considerations in operating, on surgical anesthesia, on the principles of technique, on operations, on individual structures, on foreign bodies, and on bandaging are quite satisfactory.

The subsequent sections are devoted to regional surgery, and there are good descriptions of the various conditions that are likely to require surgical intervention, of the operative measures that should be adopted, and of the ætiology and pathology of the morbid processes.

In general, the author's position has been conservative, as is shown in the comment following the description of the operation of decapsulation of the kidneys—that it had not been accepted generally by the profession, a criticism that might have been applied appropriately to the Talma operation to cure ascites caused by hepatic cirrhosis. But sometimes the advice is radical, as that splenectomy is indicated in enlargements of the spleen due to malaria. Most of these cases are amenable to medicinal treatment, and the counsel may be acted on disadvantageously by some

ambitious surgeon in malarial regions. The value of the x ray in the diagnosis and treatment of fractures is given no prominence, and there are few Röntgen pictures.

The volumes are profusely illustrated, and in most instances the illustrations are from original sources. It is noted that figure 53 is repeated as figure 57, figure 42 as 321, figure 477 as 642, and figure 214 as 691. Such repetitions should be omitted in a future edition. There is a good index.

Tropical Medicine, with Special Reference to the West Indies, Central America, Hawaii, and the Philippines, including a General Consideration of Tropical Hygiene. By JAMES W. JACKSON, M. D., Lecturer on Tropical Medicine, Jefferson Medical College, Philadelphia, Member of the American Society of Tropical Medicine, Lately Captain and Assistant Surgeon, United States Volunteers. Philadelphia: P. Blakiston's Son & Co., 1907. Pp. 536.

We are glad to announce the publication of the first systematic work on tropical medicine by an American. Dr. Jackson, who was in the medical department of the United States volunteer army during the Spanish-American war and had an admirable opportunity to study tropical diseases in Cuba and in the Philippine Islands, is entitled to much credit for the work under review.

The book opens with an introduction on the general consideration of tropical hygiene, which includes a short description of mosquitoes, their eggs, and their larvæ. Then follows a description of the diseases classified as "systemic diseases, chiefly bacterial in origin." In this section Dr. Jackson includes malarial fever and amœbic dysentery, although in the preface he apologizes for placing these diseases in this group. We think it would have been decidedly better to make a separate group of diseases due to protozoan parasites, and to consider under this head malarial disease and amœbic dysentery, which we think might better be called intestinal amœbiasis. Yellow fever, of course, must still remain among the diseases due to bacteria, although it is not beyond the range of possibility that this disease, as well as dengue, may in the future be shown to be due to a protozoan parasite of some sort.

In his discussion of beriberi Dr. Jackson accepts as proved the theory of Hamilton Wright, which is, briefly, that beriberi is a multiple neuritis depending upon an acute duodenitis of bacterial origin. As we pointed out in our editorial columns some time since, the bacillus of Hamilton Wright is by no means proved to be the cause of beriberi. Indeed, it is quite likely that this organism has nothing to do with the ætiology of the disease. We think it rather unfortunate that Dr. Jackson should have so completely accepted Wright's theories.

In the part devoted to animal parasites are discussed ankylostomiasis, filariasis, trypanosomiasis, bilharzia disease, *Schistosomum japonicum*, endemic hæmoptysis, Guinea worm disease, liver and intestinal flukes, and intestinal cestodes and nematodes. As we have before stated, we think it would have been very much better if there had been a section devoted to diseases due to protozoan parasites. The discussion of trypanosomes should be placed in such a section.

In the last section of the book diseases of an indetermined or uncertain causation, both local and constitutional, and skin diseases are treated of. In this part of the book the author takes up acute febrile icterus, febrile splenomegaly, tick fever, epidemic dropsy, tropical ulcer, yaws, tropical sloughing phagedæna mycetoma, climatic bubo, ainhum, goundou, and skin affections. We think it is pretty definitely proved that febrile tropical splenomegaly, better known as kala-azar, is due to the Leishman-Donovan body, and we

think that this might also appropriately be discussed among the diseases due to protozoan parasites. It is probably quite right not to place oriental sores in this category yet, although in several instances the Leishman-Donovan body has been found in the scrapings from these lesions; such a case has just been reported by Manson (*Journal of Tropical Medicine and Hygiene*, January 15th).

The book ends with an appendix which contains a list of essential articles for laboratory work in tropical diseases and a fairly complete bibliography. It is quite natural that Dr. Jackson should make numerous and repeated references to his own experience while on tropical service with the United States army, and that he should quote extensively from the report of the surgeon general of the army. We are quite sure that there are many things contained in the report of the surgeon general of the United States army which are of value to the general medical profession, and it is rather unfortunate that the report is not better known through a wider circulation. A careful reader of Dr. Jackson's book, however, will discover the good scientific work done by the medical officers of the army.

Helouan, an Egyptian Health Resort, and How to Reach It. By H. OVERTON HOBSON, M. D. (Edin.), Egyptian Government Medical Director of the Baths, Helouan; Examiner in Medicine, Egyptian Government School of Medicine, Cairo, etc. New York: Longmans, Green, & Co., 1906.

Physicians who are called upon to advise wealthy patients as to winter health resorts will find in Helouan an attractive place for the jaded nerves of the world weary, combining the charm of novelty with a dry, equable climate, suitable for cases of incipient tuberculous disease, nephritis, anæmia, and neurasthenia. It will be astonishing to many to learn that in the heart of the Egyptian desert there are now at Helouan excellent hotel accommodations, golf courses, a club house, and a model bath establishment. The waters, which are used both for drinking and bathing, are warm (91° F.), sulphurosaline, and stronger in the amount of sulphur than any similar springs in Europe. Dr. Hobson's well planned guide contains all the information desirable for the invalid traveler in that part of the world, and it is illustrated with numerous half tone reproductions of scenes which will be enticing for the ordinary tourist.

BOOKS, PAMPHLETS, ETC., RECEIVED

Clinique thérapeutique du praticien. Par H. Huchard, de l'Académie de médecine, et Ch. Fiessinger, membre correspondant de l'Académie de médecine. Paris: A. Maloine, 1907.

Annual Report of the Surgeon General of the Public Health and Marine Hospital Service of the United States for the Fiscal Year 1906. Washington: Government Printing Office, 1907.

A Pocket Formulary. By E. Quin Thornton, M. D., Assistant Professor of Materia Medica in the Jefferson Medical College, Philadelphia. Eighth Edition, Revised. Philadelphia: Lea Brothers & Co., 1907.

Manual of Clinical Chemistry. By A. E. Austin, A. B., M. D., Professor of Medical Chemistry and Toxicology in the Medical Department of Tufts College, Boston. Boston: D. C. Heath & Co., 1907.

Biographic Clinic. Essays Concerning the Influence of Visual Function, Pathologic and Physiologic, Upon the Health of Patients. Volumes IV. and V. By George M. Gould, M. D. Philadelphia: P. Blakiston's Son & Co., 1906.

Medical Diagnosis. A Manual for Students and Practitioners. By Charles Lyman Greene, M. D., Professor of the Theory and Practice of Medicine in the University of Minnesota, etc. Philadelphia: P. Blakiston's Son & Co., 1907.

Essentials of Obstetrics. By Charles Jewett, A. M., M. D., Sc. D., Professor of Obstetrics and Gynecology in the

Long Island College Hospital and Obstetrician and Gynecologist to the Hospital, etc. Assisted by Harold F. Jewett, M. D. Third Edition, Revised and Enlarged. Philadelphia: Lea Brothers & Co., 1907.

A Manual of Prescription Writing. By Matthew D. Mann, A. M., M. D., Professor of Obstetrics and Gynecology in the Medical Department of the University of Buffalo, etc. Revised by Edward Cox Mann, M. D., Lecturer on Obstetrics in the Medical Department of the University of Buffalo, etc. Sixth Edition, Revised, Enlarged, and Corrected According to the U. S. Pharmacopœia of 1906. New York: G. P. Putnam's Sons, 1907.

Miscellany.

Neurasthenia as Modified by Modern Conditions; and Their Prevention.—Ely summarizes this subject in the following: The prevention of neurasthenia must be along the line of knowing causes and avoiding them. 1. Let every individual know his limitations and act accordingly. Let every individual know his own boundary line of nerve force and never cross it. Let every individual recognize heredity, predisposition and individuality of nerve force. 2. Learn to hurry little and to worry not at all. 3. Discourage and prevent intermarriages of those of neurotic tendency and parentage, who are unfortunately apt to be fond of each other and to seek such unions. 4. Follow strictly the laws of hygienic life, thus avoiding, as far as it is possible, not only pure neurasthenia, but the neurasthenia incident on organic disease. Lead the simple life of plain food and regular occupations. 5. Be sure that ideals and aspirations of life are true. Study limitations and qualifications and work along the lines of least resistance. Work, which may seem to be a cause of neurasthenia, is often a prevention and cure, diverting the mind from those troubles and anxieties which do not exist in reality.—*Journal of the American Medical Association*, December 1, 1906.

The Typhoid Bacillus in the Urine.—Napier and Buchanan write that Hueppe has the credit of having first directed attention to the occasional appearance of the typhoid bacillus in the urine, just twenty years ago. The methods for the identification of the organism were at that time very far from adequate, yet the correctness of this discovery, and of the work of a number of men who followed Hueppe on the same lines, cannot, from the point of view of the present day, be doubted. In 1898 Petruschky advanced our knowledge considerably by showing the enormous number of bacilli shed in the urine, and their long continuance in the urine during convalescence. It is not a little remarkable that a complication of typhoid apparently permitting of such easy proof was only made known so recently. Before a few years ago the danger of the spread of infection by the urine was scarcely taken into consideration. It is now fairly well established that the bacilli appear in the urine in about one fourth to one third of all the cases. Their appearance in the urine is at earliest towards the end of the second week; usually later, and most frequently not till convalescence. The bacilli may be so few in number in the urine as to produce no evident change in its physical characters. As a rule, however, they appear so suddenly and in such numbers as to render the urine cloudy. The number of typhoid bacilli excreted in this way is enormous. Petruschky found more than 100 million per c.c. Their appearance may coincide with the presence of some albumen and even a slight amount of blood. On the other hand, the shedding of the bacilli may be attended with very severe kidney disturbance, marked by profuse and long continued hæmorrhage. The bladder in the majority of cases remains unaffected, and, indeed, the bacilli may continue to be shed in enormous numbers without giving rise

to any subjective discomfort. This lightness of the affection causes the condition to be overlooked, and in this way the spread of the disease is facilitated.—*The Glasgow Medical Journal*, December, 1906.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending March 1, 1907:

Places.	Date.	Cases.	Deaths.
California—Los Angeles	Feb. 2-9	2	0
Georgia—Augusta	Dec. 12-19	2	0
Illinois—Castleton	Jan. 12	2	0
Illinois—Chicago	Feb. 16-23	2	0
Illinois—Galesburg	Feb. 9-16	11	0
Illinois—Jacksonville	Jan. 11-15	3	0
Indiana—Elkhart	Feb. 9-16	3	0
Indiana—Indianapolis	Feb. 10-17	8	0
Indiana—Lafayette	Jan. 27-Feb. 1	2	0
Indiana—Lafayette	Feb. 1-18	1	0
Indiana—South Bend	Feb. 9-16	2	0
Indiana—Vincennes	Feb. 9-16	1	0
Iowa—Mahaska County (Oska- loosa included)	May 28-Feb. 22	141	0
Kansas—Kansas City	Feb. 9-16	3	0
Louisiana—New Orleans	Feb. 9-16	10-15	0
Mississippi—Natchez	Feb. 9-16	3	0
Missouri—St. Joseph	Feb. 9-16	30	0
Missouri—St. Louis	Feb. 9-16	1	0
New York—New York	Feb. 9-16	2	0
Ohio—Cincinnati	Feb. 16-22	2	0
Washington—Spokane	Feb. 9-16	12	0
Wisconsin—La Crosse	Feb. 9-16	2	0
Wisconsin—Milwaukee	Jan. 26-Feb. 2	4	0
Wisconsin—Milwaukee	Feb. 9-16	4	0

Smallpox—Foreign.

Africa—Lorenzo Marquez	Dec. 1-31	1	0
Brazil—Pernambuco	Jan. 2-15	68	0
Canada—New Brunswick	Feb. 21	1	0
Nova Scotia—Musquash—Glas- gow	Feb. 9-16	7	0
Nova Scotia—Truro	Feb. 9-16	1	0
Chile—Coquimbo	Jan. 12	1	0
Chile—Iquique	Jan. 12	1	0
France—Paris	Jan. 26-Feb. 2	7	0
Great Britain—Bristol	Jan. 26-Feb. 2	1	0
India—Calcutta	Jan. 5-19	41	0
India—Rangoon	Jan. 5-12	2	0
Mexico—Vera Cruz	Feb. 2-9	1	0
Netherlands—Rotterdam	Feb. 2-9	1	0
Russia—Moscow	Jan. 26-Feb. 2	1	0
Russia—Odessa	Jan. 19-Feb. 2	48	0
Russia—St. Petersburg	Feb. 12-26	3	0
Spain—Barcelona	Jan. 21-31	6	0
Turkey in Asia—Beirut	Jan. 26-Feb. 2	1	0

Smallpox—Foreign.

Mexico—Vera Cruz	Feb. 26	1	0
Venezuela—La Guayra	Jan. 9	2	0
West Indies—Trinidad, Port of	Feb. 4-5	1	0

Cholera—Foreign.

Philippine Islands—Provinces	Jan. 5-12	2	0
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Cholera—Foreign.

Ceylon—Colombo	Jan. 15-22	4	0
India—Calcutta	Feb. 2-9	26	0
India—Rangoon	Jan. 2-12	15	0

Plague—Foreign.

Hawaii—Honolulu	Jan. 29	1	0
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On S. S. America Mailed.

Australia—Brisbane	Dec. 15-22	1	0
Chile—Antofagasta	Jan. 12	6	0
India—General	Jan. 5-12	12-14	0
India—Bombay	Jan. 15-22	43	0
India—Calcutta	Jan. 5-19	26	0
India—Rangoon	Jan. 5-12	17	0
Japan—Matsuyama	Jan. 14	1	0
Japan—Osaka	Jan. 14	1	0
Peru—Callao	Jan. 19	1	0
Peru—Catacaos	Jan. 8	1	0
Peru—Chilayo	Jan. 8	1	0
Peru—Lambayeque	Jan. 8	1	0
Peru—Palta	Jan. 8	1	0
Peru—San Pedro	Jan. 8	1	0
Peru—Trujillo	Jan. 8	6	0

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending February 27, 1907.

BOGGESE, J. S., Passed Assistant Surgeon. Relieved from duty at Stapleton, N. Y., and directed to report to the Chief Medical Officer, Ellis Island, N. Y., for temporary duty, after which to proceed to St. John, N. B., for exclusive duty in connection with the examination of aliens.

BULLARD, J. T., Acting Assistant Surgeon. Granted leave of absence for thirty days, from February 21, 1907.

CREEL, R. H., Assistant Surgeon. Granted leave of absence for one month.

GOLDSBOROUGH, B. W., Acting Assistant Surgeon. Granted extension of leave of absence for fourteen days, from February 16, 1907.

McCONNELL, E. F., Acting Assistant Surgeon. Granted leave of absence for thirty days, from February 25, 1907.

MILLER, W. W., Assistant Surgeon. Granted leave of absence for twelve days, from February 19th, on account of sickness.

MORRIS, G. A., Pharmacist. Department letter of January 31st granting leave of absence for fifteen days amended to read for eleven days only.

SPRAGUE, E. K., Passed Assistant Surgeon. Granted leave of absence for two days.

Resignation.

Mr. A. M. THOMAS resigned as pharmacist of the third class, effective February 23, 1907.

Removal.

Pharmacist C. H. Woods removed from the Service, effective February 28, 1907.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending March 2, 1907:

ASHFORD, B. K., Captain and Assistant Surgeon. Detailed a member of the examining board to determine the results of preliminary examination of applicants, and for final examination of candidates for admission to the Medical Corps of the Army, vice Harry L. Gilchrist, captain and assistant surgeon, hereby relieved.

MORRIS, S. J., First Lieutenant and Assistant Surgeon. Granted four days' leave of absence, to take effect about February 26, 1907.

SHEPARD, J. L., Captain and Assistant Surgeon. Advanced from the grade of first lieutenant to that of captain, from February 21, 1907.

STEER, S. L., Captain and Assistant Surgeon. Granted leave of absence for three months and fifteen days.

WAKEMAN, WILLIAM J., Major and Surgeon. Sick leave of absence further extended one month.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending March 2, 1907:

BOGERT, E. S., JR., Surgeon. Detached from the *West Virginia* and ordered home.

CURL, H. C., Surgeon. Detached from special duty in the Bureau of Medicine and Surgery, Navy Department, and ordered home to await orders.

HAMMAR, A., Pharmacist. Discharged from treatment at the Army General Hospital, Fort Bayard, N. M., and ordered home to await orders.

LUMSDEN, G. P., Medical Inspector. Ordered to the Naval Recruiting Station, Indianapolis, Ind.

MARSTELLER, E. H., Surgeon. Detached from the *Franklin* and granted sick leave for six months.

MICHELS, R. H., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from October 8, 1906.

_____, _____, Surgeon. Commissioned a surgeon from September 6, 1906.

REEVES, I. S. K., Passed Assistant Surgeon. Discharged from treatment at the Naval Medical School Hospital, Washington, D. C., and ordered to the *Franklin*.

Births, Marriages, and Deaths.

Born.

JOHNSTON.—In the National Soldiers' Home, Virginia, on Sunday, February 24th, to Dr. J. A. Johnston and Mrs. Johnston, a son.

Married.

BARRELL—FOLSOM.—In Brookline, Massachusetts, on Wednesday, February 20th, Dr. Charles Sewall Barrell and Miss Elizabeth Folsom.

CUMMINGS—CLARK.—In Abingdon, Virginia, on Wednesday, February 20th, Dr. J. W. Cummings and Mrs. Fannie S. Clark.

FIGLEY—KINKADE.—In Philadelphia, on Wednesday, February 27th, Dr. Oscar George Figley and Miss Lidie Parker Kinkade.

HALGREN—JAMESON.—In Westchester, N. Y., on Monday, February 25th, Dr. Charles C. Halgren and Miss Florence Ross Jameson.

JACKSON—PANCOAST.—In Germantown, Philadelphia, on Tuesday, February 26th, Dr. Edward Jackson, of Atlantic City, and Miss Estelle Elizabeth Pancoast.

METCALFE—BEVERLY.—In New York, on Wednesday, February 27th, Dr. Raymond F. Metcalfe, U. S. Army, and Mrs. Gertrude Marshall Beverly.

SNYDER—ROWLAND.—In Philadelphia, on Wednesday, February 27th, Dr. Walter J. Snyder and Miss Maye B. Rowland.

THURSTON—HAZEN.—In Somerville, Massachusetts, on Sunday, February 17th, Dr. Rufus L. Thurston and Mrs. Laura Nelson Hazen.

Died.

ARCHER.—In Emmorton, Harford County, Maryland, on Sunday, February 17th, Dr. George W. Archer, aged eighty-three years.

BAKER.—In New York, on Tuesday, February 26th, Dr. Louis B. Baker, aged forty-six years.

BEDFORD.—In Kansas City, Missouri, on Wednesday, February 13th, Dr. T. D. Bedford.

BERRY.—In Baltimore, Maryland, on Wednesday, February 20th, Dr. John R. Berry, aged thirty-seven years.

BRADY.—In Philadelphia, on Friday, February 22nd, Dr. John C. Brady, aged fifty-four years.

COLLINS.—In Medway, N. Y., on Sunday, February 17th, Dr. David E. Collins, aged eighty-two years.

DOYLE.—In Chicago, on Monday, February 18th, Dr. Luke M. Doyle, aged thirty-seven years.

FOSTER.—In Washington, D. C., on Wednesday, February 20th, Dr. David L. Foster, aged sixty-four years.

GREENWALT.—In Pittsburgh, Pennsylvania, on Tuesday, February 19th, Dr. Jacob Greenwalt.

KENDALL.—In Paris, Virginia, on Tuesday, February 19th, Dr. W. J. Kendall, aged forty-five years.

LARONGE.—In Cleveland, Ohio, on Monday, February 25th, Dr. Lewis L. Laronge.

LOCKWOOD.—In Chicago, on Sunday, February 17th, Dr. Frederick H. Lockwood, aged thirty-nine years.

LOEB.—In Stamford, Connecticut, on Tuesday, February 26th, Dr. Joseph A. Loeb.

MERRILL.—In Skowhegan, Maine, on Sunday, February 24th, Dr. Frederick Gilbert Merrill, aged fifty-two years.

PARRISH.—In Louisville, Kentucky, on Friday, February 22nd, Dr. David A. Parrish, aged twenty-eight years.

PRICE.—In Portland, Oregon, on Friday, February 22nd, Dr. Benjamin Franklin Price, aged sixty-two years.

PROVAN.—In Brookline, Massachusetts, on Saturday, February 16th, Dr. Robert Provan.

RIDDICK.—In Whaleyville, Virginia, on Saturday, February 16th, Dr. Robert E. Riddick.

ROGE.—In Baltimore, Maryland, on Thursday, February 21st, Dr. Francis Louis Roge, aged forty-five years.

SCHILDKNECHT.—In Plattsmouth, Nebraska, on Friday, February 22nd, Dr. W. P. Schildknecht, aged seventy years.

WALLACE.—In Philadelphia, on Sunday, February 17th, Dr. Eilerslie Wallace.

WILLIAMS.—In Gladys, Campbell County, Virginia, on Thursday, February 21st, Dr. Herbert B. Williams, aged twenty-nine years.

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Original Communications.

LIMITATIONS OF THE SURGICAL TREATMENT OF UTERINE FIBROIDS.*

BY HENRY C. COE, M. D.,
New York.

The criticism is properly made that this and all other gynæcological subjects have been so thoroughly threshed out that nothing new remains to be said. In one sense that is true; in another gynæcology is still a progressive science and, to quote Thomas's familiar saying, we may still "correct the errors of yesterday by the wisdom of to-day."

Few subjects have been more discussed than that of the surgical treatment of fibroids, so that the student and younger practitioner can hardly help inferring that this is the only treatment in all cases. I regret to see that the laity have been won over to the same opinion. Without desiring to intrude the personal pronoun into this paper, it has been borne in upon my mind of late that I have a message to deliver on this theme, and I care not what heterodoxy may appear in my brief expression of opinion on a question upon which I feel so strongly. The text is furnished by no less than six patients with uterine fibroids who came to my office within the last fortnight, and like "ships that pass in the night," I shall doubtless never see them again. All had been advised to undergo a surgical operation and all went away happier than they came, because I positively advised *against* operation. I have not the least idea that this advice of mine will be lasting, for they have all been told that they had "tumors," and sooner or later they will yield to persuasion and submit to operation.

In every instance the so called tumor was not larger than a small orange, caused no symptoms—pain, pressure, or menorrhagia—and was, from my viewpoint, simply of clinical interest. And yet these women had been urged by their family physicians, or by gynæcologists (for whose opinions I entertain the highest respect) to have their uteri removed, even though they were in the prime of life! Until I obtain more light on this subject than I have at present, I shall follow the same course which I have pursued for twenty years, and shall set my face steadily against this course. A double responsibility rests upon us who are teachers, many of whose students are doing as good work as ourselves, and better. Shall we foster these radical opinions and lead the way in what I regard as retro-

gression, rather than advance? God forbid! I assume that you are sufficiently familiar with the usual indications for the surgical treatment of fibroids and know that in skilled hands the mortality following hysteromyomectomy is now so slight that one approaches an ordinary operation with perfect confidence. The technique is practically crystallized into a form which is not likely to be modified in the present generation. You are also familiar with the recent observations on the degeneration of uterine fibroids, the complication of pregnancy with this condition, the exploded ideas that these neoplasms disappear or become quiescent after the menopause, etc. I would insult the intelligence of this audience by reviewing these well known facts.

Assuming the general knowledge of these subjects by the profession, I merely wish to call attention to this one fact—that confidence on the part of the operator has led to too radical views. The tendency to generalize is one against which the surgeon must ever be on his guard. If there is one truth which that severe, but faithful, teacher, experience, instils into one's mind, it is this, and happy is he who learns it as the result of many mistakes and failures. In direct opposition to many of my esteemed friends and confrères, I wish to state the proposition that the mere presence of a small uterine fibroid is *not* an indication for operation. You may agree with me here, but do you apply it in the consulting room and at the operating table?

I assume that we all have the best interests of our patients at heart, that a successful operation per se (yes, and the interesting and ever present financial question) is no longer the chief desideratum. Surgeons have learned from long and painful experience in the treatment of malignant disease of the abdominal and pelvic viscera that the word recovery is *not* synonymous with *cure*. The pendulum has swung so often in this country between radicalism and conservatism that we have attained rather an unenviable reputation for inconstancy. I have lived long enough to see many a vaunted fad relegated to oblivion, and the end is not yet. Excluding cases of fibroids in which the indications pain, pressure, profuse hæmorrhage, steady increase in the size of the neoplasm, evidences of degenerations, complications (local and general), etc., are so clear that the majority of surgeons would advise operation, I shall consider only the class of cases to which I have referred, small interstitial growths, with few if any symptoms, not affecting the general health—in short, causing the patient no discomfort or disquietude, until after she has been indiscreetly told that she has a "tumor." When will medical men

* Read before the Obstetrical Section of the New York Academy of Medicine, January 24, 1907.

not over the pernicious habit of "thinking aloud." The young and inexperienced practitioner, who unguardedly informs patients that they have a "tumor," "heart disease," a "tendency to Bright's disease," a "weak spot in the lungs," etc., makes a grave mistake which it is difficult to correct, for he lodges a poisoned shaft in the mind of a nervous woman, from the effect of which she may never recover. Heaven forgive us for all our careless and thoughtless words when we are supposed to speak as doctors.

I have been censured more than once in this hall during the past twenty years for my ultraconservatism, and find myself to-night reviewing my own record critically. Why, I ask myself, do I so often find myself at variance with gynæcologists so much wiser and more skilful than myself? Why do I decline to operate when they strongly advise it? Why do I shrink from operations which I used to perform unhesitatingly? Is it from growing timidity, because of higher mortality, because of imperfect technique, or a failure to adopt the latest methods? It may be so, yet I have honestly tried to make each year a little better than the preceding one. It cannot be the result of a growing pessimism, a *laissez-faire* spirit, born of advancing years. Perhaps it is from a menacing sense of responsibility which come to every thoughtful man as he compares the past with the present, and sees, not sadly or enviously, but hopefully and optimistically, his ardent younger brothers pressing on to fill his place so much better than he has done; it is rather the earnest wish that they shall avoid his errors and elevate still higher the standard of that profession to which we are devoted.

Now why, I ask again, does the mere presence of a small uterine fibroid impel the examiner not only to inform the patient (hitherto in blissful ignorance), but also to advise operation? I reject the financial motive, though away down in our heart of hearts every one of us must confess that he is influenced to some degree by that. I find that most of the patients whom I pass as not requiring even medical treatment are told that the tumor "will grow," that "it will become malignant," that "it will give trouble at or after the menopause," or the flimsy argument is advanced that the patient has a neoplasm, and it must be removed.

It not infrequently happens that I cannot find a tumor at all, but simply a large, hyperplastic or asymmetrical uterus, the diagnosis being unchanged after examination under anaesthesia. This would seem to be the fault of our present methods of clinical instruction, at least judging from observation of the graduates of my own college, the students of which are supposed to have two years of practical teaching in gynæcology. Doubtless we have made great strides during the past two decades, but I cannot help thinking that more careful and thorough pelvic examinations were made under the old *régime*, before Lawson Tait bluntly stated that "the only way to make a diagnosis is to open the belly and find out." Knowledge thus acquired filled a good many graves in preaseptic days.

First, then, it behooves the general practitioner to be sure that the patient has a tumor before he informs her of the fact, or advises an operation, for once the fatal words have escaped his lips, all the

specialists whom she afterwards consults cannot convince her to the contrary.

Secondly, what is the clinical history of the case? Has she had any symptoms referable to the increased weight of the uterus, vesical or rectal irritation, displacement of the uterus, interference with the normal functions of the pelvic organs? I have been watching many patients from ten to fifteen years, with small fibroids, who have never complained of such disturbances. I would be the last to counsel delay in any case of profuse hæmorrhage, growing lesion, or where evidences of degeneration are present.

The question of pregnancy is always an important one. In my experience patients with fibroids are not likely to become pregnant, or if they do they should be kept under careful observation, the accoucheur being prepared to interfere at any time if necessary, as I have stated in former papers.

I am far from commending the ultraconservative attitude of those who believe that a patient should be tided over the period of menorrhagia preceding the climacteric, under the mistaken idea that the tumor will "disappear" after this time. I do not remember a case in which a fibroid has entirely disappeared after either the natural or artificial menopause, though I have seen them diminish in size, and all troublesome symptoms vanish. On the contrary, I recall half a dozen distressing cases in which women have died of exhaustion from loss of blood under unwise palliative treatment, or in which the fibroid has undergone cystic, purulent, or sarcomatous degeneration after the change of life. Surely, there is a middle ground between this unjustifiable course and the radical teaching that every uterine fibromyoma must be extirpated, even in young women, simply because it is discovered at the examining table. I am still old fashioned enough to believe that much may be accomplished by palliative treatment in the case of small interstitial tumors, without marked symptoms. Hæmorrhage may be controlled by thyroid extract, adrenalin, hydrastine and ergotine, by astringent douches and tamponade, or by curettement, or even by vapocauterization in suitable cases, pressure symptoms being relieved by bandages and pessaries, pain by aspirin and codeine. Even pregnancy and parturition do not present any terrors to the careful accoucheur, who keeps his patients under observation through pregnancy.

In short, the whole question of the treatment of uterine fibroid turns on the proper recognition of the variety, site, and symptoms caused by the tumors. The mere diagnosis of the presence of the growth is elementary—to be made by the tyro. It is a reproach to our diagnostic and clinical experience if we jump at the conclusion that surgical treatment is indicated simply because we happen to discover a tumor. Shall we at once inform the patient? Unfortunately in this age of competition if you do not, the next consultant may blurt out the fact, to your discredit. I should prefer to inform the husband or friends and make as light of it as possible. The patient should be kept under observation, in view of the possible growth of the neoplasm and the development of complications, but why destroy a woman's peace of mind without good reason? If she has no symptoms, why suggest them? Of course, much depends upon the patient

himself, man would prefer to ignore the truth, while others had better be kept in ignorance of it. After all, every biologist must be guided by his own skill, experience, and conscience.

So far as I personally am concerned, while I would shrink from no necessary operation, I still adhere to the opinion that the safety of a surgical procedure does not justify its performance in a case in which the indications are not clear and well defined.

8 WEST SEVENTY-SIXTH STREET.

GENERAL INFECTION BY THE COLON BACILLUS WITH RAPIDLY FATAL SEPTICÆMIA AND HÆMOGLOBINÆMIA*

By A. D. BLACKADER, B. A., M. D.,
Montreal, Canada,

Professor of Pharmacology and Therapeutics, McGill University, and Physician to the Montreal General Hospital,

AND

B. D. GILLIES, B. A., M. D.,
Montreal, Canada,

A Civil Pathologist to the Montreal General Hospital.

The colon bacillus is usually ranked in the saprophytic group of bacteria rather than placed among the organisms distinctly pathogenic for man; but we know that it is far from being devoid of virulence, and that it is capable under certain conditions of gaining increased powers of invading the organism and of manifesting very definite pathogenic effects. Blachstein,¹ working under Welch, by employing this bacillus in different degrees of virulence and by varying the amounts inoculated into animals, showed that there might be produced an acute disease terminating in thirty-six hours; a subacute, with fatal ending before the twentieth day; and a chronic condition in which, after a period of latency, progressive emaciation sets in, finally ending in death. Charlton,² working under Adami, injected into the circulating blood small repeated doses of living cultures of the colon bacillus and found that the erythrocytes were particularly susceptible to the proximity and action of this organism, rapidly undergoing hæmolytic. A very characteristic anæmia, similar in many respects to pernicious anæmia, can be thus produced.

Very occasionally in man does it give rise to septicæmia. In most of the cases reported in literature the infection has either been a terminal one, or has taken place as a secondary invasion, when the normal resisting powers of the patient have been seriously weakened by a previous infection. Instances, however, are numerous in which this organism has acted as the exciting agent of grave local inflammation.

The present case is, I think, unique in the acuteness and toxicity of the infection which suddenly supervened in a young woman, apparently in fair health and spirits, and proceeded to a fatal termination in forty-eight hours. It has an added interest in the extreme amount of hæmolytic which was developed:

Case I. S. A. of twenty-one years, was admitted to the wards of the Montreal General Hospital, June 26, 1905, suffering from pyrexia and malaise, with slight diarrhoea, rigors, tenderness, and a general feeling of the skin to indicate danger that had appeared and continued during a dark Indian.

The history related from her mother was as follows. She was a middle-aged woman, had two children living, was recently separated from her husband, had always been strong and healthy, was born in Canada and had lived in Montreal all her life with the exception of a few months spent in New York some years ago. She was said by friends to be in good health until the evening of June 24th. According to her mother, menstruation had stopped some two months previously and she had been taking drugs to bring it on, but exact details we were unable to obtain. The evening of the 24th was spent on her doorstep talking to friends, until she was seized with severe abdominal pain, nausea, and vomiting, associated with uterine hæmorrhage. The pain persisted through the night. In the morning she was removed to her mother's house, where she was seen by Dr. Patrick, to whom I am indebted for this history. When seen by him she had a temperature of 102° F., and a quick pulse. There was moderately profuse hæmorrhage with marked tenderness on deep pressure in the hypogastric region above the pubes. A hot douche was given and the cervix packed with sterilized gauze. At a later visit, he found the hæmorrhage controlled, but the pulse and temperature were higher. She was sent to the hospital at a late hour that evening.

On her arrival in the ward, the patient's mind was wandering, and her pulse was scarcely perceptible at the wrist. Stimulation was at once employed. Subcutaneous injections of normal saline solution and of strychnine and camphor were given, and inhalations of oxygen were ordered. The bowels moved freely during the night; the stools were fluid in character and brownish in color. I saw her on my morning visit and her condition was then described as follows:

Patient is a fairly well nourished woman, of moderate size. She lies supine on her back in bed. Her mind is dull and occasionally wanders. The eyelids are half closed; the pupils are dilated, but equal; the sclerotics are tinted of a brownish yellow. The skin is smooth, but is everywhere of a brown tint resembling that of a dark Indian. The extremities are cyanotic and cool. There is a slight enlargement of the lymphatic glands in the neck, especially those in the left posterior triangle; the glands elsewhere are not to be felt. The lungs are normal. The cardiac dullness begins at the upper border of the fourth rib and extends from the left edge of the sternum outward three inches. The first sound is weak. Splenic and hepatic dullness are both normal. There is some tympanites; deep pressure elicits tenderness over the suprapubic region, but there is no marked resistance in the abdominal walls, which move freely with respiration. Both flanks are resonant on percussion. The temperature was 103° F., the pulse 130, feeble; the respirations 36.

The urine was scanty, dark in color, highly albuminous, contained numerous red blood cells, a few hyaline and coarse granular casts, and many short motile bacilli, but no streptococci. It gave no reaction for bile pigment.

Examination of the blood showed 2,704,000 red cells, 79,200 white cells, and 48 per cent. hæmoglobin. The differential count of the white cells showed: polymorphonuclears, 88 per cent.; large mononuclears, 5 per cent.; small mononuclears, 2.5 per cent.; transitional, 4 per cent.; nucleated reds, 0.5 per cent. The blood was noted as dark and flowing with difficulty. Under the microscope the serum appeared of a yellow tinge; there was slight poikilocytosis, but no eosinophiles were seen; hæmatoblasts, dust bodies, and cel-

* Read at the meeting of the Association of American Physicians, Washington, May, 1906.

¹ Intravenous Inoculation of Rabbits with the Bacillus Coli Communis, *Johns Hopkins Hospital Bulletin*, 1891, II, pp. 396 to 403.

² A Study of Chronic Infection and Subinfection by the Colon Bacillus, *Journal of Medical Research*, 1902, p. 344; 1904, p. 507.

lular debris were abundant; fragments of red cells were observed in some leucocytes. One needle crystal of hæmoglobin was seen. Crenation came on rapidly in about ten minutes. The fibrin net formed in seven minutes.—Death occurred the same evening.

Autopsy.—Four hours after death. The body is that of a fairly well nourished woman; sclerotics of a deeply icteroid tinge; skin of a deep bronze color, especially that of face and neck; toes and terminal phalanges somewhat purplish, nails deeply cyanotic. Post mortem lividity is but little developed over dependent parts; post mortem rigidity is just beginning. The subcutaneous fat is of a deep yellow color.

The intestines present a bronze tinge similar to that of skin.

The right lung shows a small calcareous nodule at the apex of the upper lobe; the lung tissue is otherwise normal. The left lung is also normal. The heart is of normal size. The valves are normal. The muscle is extremely pale in color and of a somewhat flabby consistence. The intima of the aorta and the endocardium covering the valves are of a chocolate tinge. The peritonæum is glistening. The right kidney is large; the capsule peels off readily leaving a smooth surface which is of a reddish black color. On section the cut surface is dull red and the consistence fairly firm. The normal markings are poorly defined. The cortex is somewhat thickened and can only be distinguished from the medulla with difficulty. The left kidney is the same as the right. The suprarenals are normal. The liver is of normal size, its surface is smooth and its edges sharp; its consistence is somewhat softened. On section the lobules are not visible; the cut surface presents a diffuse brownish yellow color and has a greasy feel. The gallbladder is distended with a black, viscid bile. The bile ducts are patent. The spleen is large, the capsule fairly smooth, its consistence firm. On section, the parenchyma is of a deep, red color; the Malpighian bodies are not prominent. On scraping considerable pulp comes away. The uterus is large; its walls are soft and thickened. The inner surface is lined with a softened, shaggy membrane, which extends throughout the body leaving the cervix free. A purulent exudate, small in quantity, is contained in the cavity of the uterus. The tubes and ovaries are normal. The vagina is normal. The bladder is small; the mucosa is dark and œdematous, and the submucosa is infiltrated with chocolate colored serum. The rectum is normal. The intestines show normal contents which are bile stained. The mucosa is normal. The stomach is of normal size and its mucosa is normal, showing no evidence of inflammatory reaction. The œsophagus is normal. The thoracic and abdominal aorta are elastic; the intima is smooth and of a pinkish brown color. The blood from the ventricles is of a deep chocolate tint and gives a spectrum indicating the presence of methæmoglobin.

Anatomical Diagnosis.—Septicæmia, hæmolysis, and methæmoglobinæmia; subinvolution of the uterus; retained secundines; acute cystitis, hyperplasia of the spleen; healed tuberculosis of the apex of the right lung; cloudy swelling of the kidneys; fatty liver.

Bacteriological Diagnosis.—Cultures from the blood taken eighteen hours before death gave a pure culture of *bacillus coli communis*. The blood was drawn from the median vein, observing every aseptic precaution. Cultures from the blood of the ventricles, taken four hours after death, gave a pure culture of *bacillus coli*. Cultures from the lining membrane of the mucosa of the uterus showed *bacillus coli* in pure culture. Smears from this part showed bacilli presenting the same morphological appearances and the same staining and cultural properties as *bacillus coli*. Cultures from the spleen and kidney showed *bacillus coli* in pure culture. Cultures from the urine before death gave

bacillus coli in pure culture. No growth was obtained from the liver, gallbladder, and brain; the inoculated medium remained sterile.

The various isolations, both ante mortem and post mortem, were identical in morphology, staining, and cultural peculiarities. The organism was a Gram negative, small, sluggishly motile bacillus occurring singly and in pairs. It produced abundant gas in dextrose media; litmus milk was coagulated in fourteen to twenty-four hours; later, peptonization of the medium occurred. The bacillus gave a positive test for indol in peptone solutions. The growth on blood serum, gelatin, agar, potato, etc., was luxuriant. In sugar media involution forms were numerous.

Microscopical Examination of Organs.—The sections from skin showed nothing worthy of note. The lungs showed a fairly well marked emphysematous condition. The heart muscle fibers showed cloudy swelling; the nuclei were somewhat indistinct and striation was much less clear than normal. Sections of the heart fixed in formaldehyde and stained in scarlet R., showed a marked diffuse fatty change in the muscle fibers. The fat occurred in the form of fine droplets closely packed within the individual fibres. The kidneys showed an extremely marked hyperæmia, but no indication of a distinct inflammatory reaction. Cloudy swelling of the cells lining the tubules of the kidneys was noticed almost throughout their entire extent. This process was less marked in the collecting tubules than in those of the cortex. The tubules were filled with a substance having a uniform pale chocolate color, consisting of some blood cells, but chiefly of blood debris, which stained a faint blue when treated with potassium ferrocyanide and dilute hydrochloric acid, showing the presence of hæmosiderin. The chocolate colored substance also filled and distended Bowman's capsules to such an extent as to crowd the normal contents of the capsule toward the centre. Some cells of the tubules showed a slight fatty change. The liver showed a diffuse cloudy swelling; the cells contained a large quantity of fat. There was no evidence of any local infective process in any part of the liver tissue. Sections stained in scarlet R. showed an extreme grade of fatty infiltration of liver cells. The fat appeared in the form of small droplets distributed generally throughout the lobule. The spleen showed a marked hyperæmia throughout. The lymph cells were closely packed together. The connective tissue trabeculæ were seen with difficulty from the large increase of lymphoid and plasma cells. The Malpighian bodies were easily defined and were enlarged. Sections fixed in formaldehyde and stained with scarlet R. showed no fat. The uterus showed the presence of decidual cells lining the inner wall; chorionic villi were also present. A marked inflammatory reaction was noted in the mucosa of the uterus, the inner wall being infiltrated with a mass of round cells. The reaction was widespread and extended deeply into the walls. The blood in the vessels of the tissues of the various organs showed a marked increase of the polymorphonuclear leucocytes.

In this case we have evidently had to deal with an abortion between the second and third months of pregnancy, which in all probability took place a few days before the occurrence of the toxic symptoms; this was followed by a colon bacillus infection of the uterus, as shown by the smears and the cultures. Succeeding this local infection, and probably favored by the patient sitting out in the cool night on stone steps, there occurred an aggravation of the local trouble, a depression of the normal resisting powers of the patient, and an invasion of the blood stream with severe septicæmic symptoms, and finally, with rapid destruction of the blood cells and the development of hæmoglobinæmia.

The question at once arises whether any other poison was associated in this very remarkable condition. As careful an investigation as was possible at the time indicated that no drugs had been taken for some days previous to the development of the toxic symptoms; of the drugs which had been taken with a view of bringing on a miscarriage we could obtain no exact information; but against the view that the hæmolytic action was due to a drug, it was noted at the autopsy that neither stomach nor the intestinal mucous membrane indicated the previous presence in them of any irritant. The fatty degeneration found in the cardiac fibres and liver cells pointed very clearly to an infectious toxæmia, as did also the great increase in the polynuclear leucocytes, and the lesions found in the kidneys did not resemble those met with after any irritant poison that I am acquainted with. The pronounced pyrexia at the onset was opposed to the supposition that the destruction of the red cells might have been due to enormous doses of the coal tar products.

Lazarus³ divides the exciting causes of hæmoglobinæmia into two groups. In the first group he places a small number of poisons, for us of practically slight importance, which bring about hæmocytoysis without modifying the hæmoglobin. This group includes a few animal poisons of which the most important are the various snake poisons; some vegetable poisons, of which notable instances are phallin, croton, ricin, cyclamin, and sapotoxine; and a few mineral poisons, such as arseniureted hydrogen and certain inorganic acids. In the second group he places those poisons which not only possess the ability to dissolve and destroy the blood corpuscles, but are also able to change the oxyhæmoglobin into methæmoglobin. In this group he places certain chemical agents, such as potassium chlorate, pyrogallol, and hydrazin, and its derivatives, especially phenyl hydrazin. Aniline and its derivatives have also in large doses given rise to a destruction of the red cells with methæmoglobinæmia. Hæmoglobinæmia has also been reported as a sequence of extensive and deep burns of the body, and as a consequence of the transfusion of blood serum from one animal to another of different species. It has been met with also in severe malarial and other tropical affections; but in these cases it has been questioned whether the massive doses of quinine administered did not contribute to the result.

More important than the preceding, and more interesting for us, is the destruction of the red cells which takes place as the result of the action of special lysins, the products of various forms of bacteria. Since the discovery of tetanolyisin by Ehrlich, in 1898, other lysins elaborated by special organisms have been observed and their action carefully studied. Among others the lysins of the bacillus pyocyaneus, the bacillus typhosus, bacillus diphtheriæ, and bacillus coli communis; of the staphylococcus aureus and albus, and of the streptococcus pyogenes. The development of these lysins is in the main extrabacillary; it begins under favorable circumstances between the second and third day, and increases rapidly to a maximum on the sixth or seventh day, after which it slowly decreases. Abbott,⁴ writing of them, says that in some the ac-

tion on the blood is closely allied to that of proteolytic enzymes, digesting the stroma of the red cells and thereby liberating the hæmoglobin; in others, the toxic molecules appear to be a composite of haptophore and toxophore groups, the former having the power of binding the lysin to the susceptible cell and the latter the power of destroying the cell to which the haptophore links it. In still other instances the destruction of the blood cells *in vitro* seems to be the result of detrimental physical and chemical conditions by the growing bacteria.

That a hæmolytic action may be brought about by bacteria in different ways, however, is evident, for while in many experiments the hæmolysis is due to the slow development of a definite lysin, in others it rapidly makes itself manifest during the early stages of bacterial growth. In recent experiments by Abbott,⁴ while blood suspensions inoculated with sterile filtrates rarely exhibited hæmolytic activity if the cultures were less than seventy-two hours old (and not infrequently still older cultures were required before active hæmolysis set in), blood suspensions inoculated with very small quantities of living bacteria showed evidence of a hæmolytic action within a few hours, sometimes long before bacterial growth in the inoculated suspensions was visible to the naked eye. Moreover, the hæmolysis thus produced, was always peculiar from the dark red color of the dissolved hæmoglobin, showing the presence of methæmoglobin, in contrast to the bright red color which was maintained in the suspensions inoculated with sterile filtrates.

As an explanation of the hæmolytic action of the developing bacteria, Abbott⁴ suggests that the erythrocytes with which the bacteria were in intimate contact stimulated in a specific way those atom complexes of the bacterial protoplasm having affinity for the erythrocytes, and that as a consequence there resulted a sufficient overproduction of these atom groups to account for the prompt destruction of the erythrocytes and the consequent liberation of their contained hæmoglobin. Such a proposition coincides with the theory advanced by Professor Welch, in his Huxley Lecture (1902), to the effect that certain functions of bacteria are exhibited only under the influence of specific stimuli. Just as the somatic cells under the influence of certain intoxicants become active in the multiplication of certain atom complexes normally contained within them, "antibodies or receptors," so by a reverse process, we may conceive increased development of particular complexes normally present in the bacterial or other living alien cells, to result from the stimulating influence of special integers resident within the tissues of the host. It appears extremely probable that some action of this character took place in the blood of our patient.

This case is in our opinion of much interest, since a careful search through medical literature has not brought to light any instance in which such a severe grade of hæmoglobinæmia, due to bacterial activity, has been observed clinically. Thanks are due Dr. Duval and Dr. Paterson for assistance with the microscopical portions of the autopsy.

230 MONMOUTH STREET.

³ A Study of the Proteolytic Enzymes and of the Specific Hæmolysins and Some of the Clinical Features of Malarial Research, L. W. SARGENT, 1904, p. 68.

⁴ On the Nature of the Proteolytic Enzymes and of the Specific Hæmolysins.

TRACHOMA, CLINICALLY AND SOCIALLY
CONSIDERED.*BY HOWARD F. HANSELL, M. D.,
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The importance of the prevention and cure of trachoma or granular conjunctivitis when viewed from an economic standpoint can hardly be overestimated. The full understanding of the morbid process which involves the conjunctiva in its entire extent and depth, necessary for the appreciation of the signs of the disease and therefore the diagnosis from other conjunctival affections, can only be reached by laborious laboratory investigations and extensive clinical experiences. The demands on one's time and ability for laboratory research are to most of us incompatible with those of close clinical study. The all round ophthalmologist of the present day is almost as rare as the general practitioner. The science of ophthalmology embraces the pathologist, the operator, the refractionist, the clinician, the physician, the writer, and the student, specialists, and ultra specialists. The study of trachoma alone constitutes the work of a lifetime and then it is not completed.

A review of the labors of the microscopists who have endeavored to determine the special causative germ and to differentiate it from others appalls the reader with the magnitude of their work. Thus, Hirschberg and Krause found in the secretion of the acute form, rodlike bacteria; Sattler, a round micrococcus somewhat smaller than the gonococcus of Neisser, but resembling it in other respects. Michel's findings were practically identical. Baumgarten denied the inferences drawn by these investigators that this germ was the specific infecting germ of trachoma. Müller's thorough studies are interesting. In Vienna he found in eleven out of fifteen cases of trachoma a bacillus which differed but slightly from the influenza bacillus. In Pest he found the same bacillus in twenty-three out of sixty-three cases. He continued his investigations in Egypt with the same result in all the chronic cases examined. He says "the conclusion of these studies has strengthened my opinion over and over again that the bacillus discovered by me has an ætiological significance in trachoma." He adds emphatically: "But I am not fully convinced." Uthoff says: "Considering all the evidence which has been brought forward, the question of the cause of trachoma is still unsettled, but the opinion is almost universal that the disease arises from a specific microorganism." These few quotations and statements show the persistence of modern investigators and indicate the magnitude of their labors and, unfortunately, their limitations. The discovery and identification of the bacillus would be of almost incalculable benefit to mankind for the stamping out of this dread disease. It would mean the saving of eyesight to tens of thousands of individuals and of money in vast amounts. When we realize that among the causes of blindness trachoma stands third in the list, yielding precedence to only congenital malformations and purulent ophthalmia, one may begin to grasp its social and pecuniary significance.

Trachoma is confined to no one country, nor to one race of men, but prevails in all quarters of the

globe and among all nations. Its virulence and its prevalence are, however, not the same in all lands and among all people, but increase according to the conditions favorable for its spread and development. It was well known to the ancient Greeks and Romans, and was prevalent in Egypt in ancient times, although knowledge of its existence in Egypt did not reach Europe until near the close of the sixteenth century. It was imported from Eastern countries by the returning Italian, French, and English soldiers, and was spread by these armies throughout Europe. Its frequency in proportion to the population is approximately given by various authors from whose statistics I cull the following: In Hungary 30,000 cases, or two per cent., of the total population, not distributed equally throughout the land; in Canton 700 among every 1,000 of the population; in Tokio 500 among 1,000; in Amsterdam 930 among 72,000 Jews and 40 among 3,800 Christians; in Bordeaux 25, in Venice 330, in Bombay 100, in Constantinople 150, in Posen 150, in Lisbon 125, in Berlin 14, in Glasgow 5, in London 5 among 1,000 inhabitants; in Iceland and among the Boers in South Africa occasionally and frequently in Syria and Palestine. It must be remembered in drawing inferences from these figures that the individuals affected, while ascribed to a particular place may have been foreign born, and also that those who are attacked by trachoma may have had a preexisting conjunctivitis of entirely different character. Ziem lays particular stress on this last point, and says, in some countries as in Egypt, South and North Africa, Syria, Palestine, Asia Minor, Greece, Hungary, and in many parts of eastern and western Germany, the people are exposed to dust and sand storms which have induced an irritability of the nasal and ocular mucous membranes. He believes that the wholesale destruction of forests in these countries has much to do with prevalence of trachoma, because while the contagion may not be carried by the winds, the people are more exposed to the wind and sand storms.

The contagiousness of trachoma cannot longer be doubted. Too much evidence may be found in the literature of the history of the origin and spread of the disease in the western countries to permit or foster the opposite view. Its unsuspected admission into schools, educational and reform, into barracks and ships, into benevolent institutions, into private families and the consequent infection of fifty per cent. to seventy-five per cent. of the inmates of these institutions are too well known to require confirmation. How can an affection furnish stronger proof of its infectiousness than Gossett's statement concerning trachoma that among 300 boy inmates of a house of correction 220 became trachomatous after drying their faces with a towel that had been previously used to wipe the trachomatous eyes of a recently admitted patient?

The existence of so called "monocular" trachoma is not a forcible argument against its contagiousness, for we are all familiar with monocular gonorrhœal conjunctivitis, and the gonococcus of Neisser is equally if not more inclined to spread to the sound eye than the bacterium of trachoma. Moreover, many monocular cases become binocular later in their history. I have a young man now under observation who had granular conjunctivitis and pan-

* Read before the Section of Ophthalmology, College of Physicians, Philadelphia, 1907.

mus in the left eye quite two years before it appeared in the right eye. And, again, it is possible that some of the cases defined as granular are merely follicular conjunctivitis, for often these two diseases are mistaken for each other. Such confusion is likely to arise when we remember that some clinicians consider the two affections to be identical. It has been abundantly shown that the source of the contagion is resident in the secretion, and that the disease is communicated by contact of the secretion with an hitherto unaffected conjunctiva.

Contagion, then, depends upon two conditions: 1. The exudation of the trachomatous conjunctiva must contain germs or their toxins, and, 2, the virus bearing secretions must come into actual touch with another conjunctiva, in such a state of health or disease that it is made adaptable to the retention and activity of the germs. Just what condition is necessary to make the soil fertile has not been discovered. It has been asserted by several observers that trachoma most readily and frequently affects conjunctivæ which are already the seat of inflammation excited by other kinds of bacteria and in individuals who are scrofulous, syphilitic, or gonorrhœal. Others again state that not one kind of germ only, but several kinds may, where a certain disposition or temperament exists, give rise to trachoma. It would seem from a study of the spread of trachoma that without a tendency or special disposition toward the acquisition, the disease would not have assumed the enormous proportions which it has. Many of us are exposed daily to the contagion from actual contact with trachomatous eyes and yet, I believe, it happens with the greatest rarity that physicians become infected for the reason that we are as a class cleanly in our habits, regular in our lives, not given to sensual indulgences, and not exposed to the deteriorating influences of excessive poverty or excessive wealth. On the other hand, Fick says, in confirmation of the statements of the contagiousness of the disease, "when oculists who have much to do with trachoma, for example, Quaglina, Cuignet, Rivers, Bisley, become trachomatous themselves the conclusions would seem fully justified." If the secretion contains the infective agent it follows that those forms are most contagious which have the greatest amount of secretion.

Trachoma has three stages: (1) The stage of development; (2) the stage of acute granulation; and (3) the stage of cicatrization. The secretion is abundant in the first two and scanty or wanting in the third stage. Hence, the danger of contagion is ever present until the third stage, when it is absent or reduced to a minimum.

Measures recommended or adopted for the prevention of the dissemination of the disease, in order to be effective, must be based on those facts, and they should also take into consideration all the other known factors which favor its spread. Of all the preventive means the most important and the most useful is the isolation of the patient or, more strictly speaking, the reservation for him alone of all materials that may come into contact with his eyes in the course of his daily life. For example, towels, handkerchiefs, sponges, bed linen, carpets, clothing may be directed or indirectly the means of contamination. The disease is preeminently one of poor peo-

ple, those who on account of poverty are obliged to live unhygienically, or those who because of an irresistible propensity to save money keep the cost of living at the lowest point. Thus, their eyes are subjected to the worst possible influences by reason of their surroundings, and not only are they exposed to contagion, but are forced to aggravate their susceptibility to eye disease by the necessity of earning their living, and in most instances by constant close work.

Fick urges the adoption of the following four rules by the management of institutions where many individuals occupy a limited space: 1. Every person who desires to become an inmate should be examined by a competent physician. If trachoma is present, admission is denied. Should, however, admission be compulsory trachomatous individuals must be isolated and placed under treatment. 2. Every inmate must have his own toilet articles, bed, handkerchiefs, and clothing. 3. Regular ocular examination of the inmates must be made, the frequency depending upon the number of cases and the malignancy of the trachoma, the trachomatous separated and treated. 4. Temporary leave of absence or leave of permanent departure may be granted only to the healthy or to those who have recovered.

Based upon the belief of the contagiousness of trachoma, the United States government has included it in the list of "dangerous contagious diseases." The latest act applying to the admission of immigrants was passed March 3, 1903, and is in part as follows: "Section 2. That the following classes of aliens shall be excluded from admission into the United States: All idiots, insane persons . . . paupers, persons likely to become a public charge, professional beggars, persons afflicted with a loathsome or dangerous contagious disease. . . ." The words "trachoma" or "granular conjunctivitis" are not specifically mentioned, but the inclusion of the disease would seem to be eminently proper and for a double reason: the trachomatous individual is unquestionable a source of danger because of the contagiousness of his disease, and he may also become a public charge because of blindness from cicatricial and atrophic changes in the conjunctiva, a common sequel of trachoma.

The question of serious import arises as to the justice of this act in the exclusion of *all* trachomatous individuals and as to the discrimination between them and others who have communicable diseases of other organs of the body or who, from diseases of any description, may become public charges. The question of the propriety of excluding the before mentioned classes of aliens may well be left for solution to the United States government. Certainly the people of this country cannot afford to be burdened with the care and support of the unhealthy of other nations, having quite heavy enough a load to carry in taking care for their own sick poor. But the interpretation of the act, being left entirely to the judgment of government officials, may properly be a subject of inquiry if not of criticism. If all cases of granular conjunctivitis are dangerous and contagious the officials, whose duty it is to carry out the law, have no choice, but if it is admitted by those who have made granular conjunctivitis their constant study for years and who have had most extended clinical and laboratory opportunities that

the contagion is limited to the first and second stages because during these stages only secretion is found, it would seem that the law should be interpreted to apply to those stages only. My opinion, as may be readily inferred, is that aliens who present themselves in the cicatricial stage and who have otherwise good eyes may be allowed to land. Those persons are probably more susceptible to conjunctivitis than those who have never had trachoma, but I believe they do not on that account become dangerous to the community, for the distinctive elements of the trachoma have long since disappeared.

The danger of blindness in a case of trachoma that has been brought to the third stage without other alterations than the characteristic changes in the palpebral conjunctiva, is remote. The inverted eyelashes may readily be removed, the entropion relieved by operation, errors of refraction corrected by glasses, and recurring inflammations, should they appear, be successfully treated by appropriate remedies. The scars of the preexisting trachoma are no greater evidence of present danger of contagion than the pits indicating recovery from a past attack of smallpox.

PATHOLOGY AND SYMPTOMATOLOGY OF CHRONIC ADHESIVE PERICAR- DITIS.*

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When a fibrinous exudate occurs in the pericardial cavity, the lymphatic masses are of differing size and strength, are at first mostly soft, friable, and easily broken by the cardiac movements; some may be absorbed with the rest of the lymphatic exudate, and some remain to become organized into connective tissue.

The exudate is first invaded by leucocytes, by connective tissue cells, and by newly formed blood vessels, all of which go to make up granulation tissue; as time goes on organization into connective tissue becomes more complete, and where the opposing surfaces are in contact, union of the two results. The most frequent site of adhesion is on the surface of the right ventricle, next the auricles, and lastly the left ventricle. Of the old adhesions, those at the apex may be long, thin threads, having been strung out by ventricular contraction, others have broken off and hang loosely in the pericardial cavity, while those at the base, where there is less movement, are apt to be thicker and denser. In cases where lymph has been excessive and organization complete, the pericardial surfaces may be entirely agglutinated with more or less thickening; in these cases the pericardial cavity is obliterated.

Secondary to the pericarditis we are apt to find cardiac hypertrophy and dilatation in varying degrees, sometimes slight, sometimes (when the adhesion is extensive) considerable, and when much thickening and stiffening result, enormous. Myocardial degeneration frequently occurs, often coronary sclerosis accompanies, and frequently chronic valvular disease, so that all factors may show in the

circulatory embarrassment. Chronic pericarditis and granular kidney often occur together. The most extreme degree of dilatation occurs in the right ventricle; this is because the right ventricle being thinner walled than the left is more easily stretched, and frequently before it can regain its former tone or become hypertrophied, adhesions have formed which hold it firmly in its new position. In other cases the inflammation extends beyond the pericardium and includes adjacent objects, notably the pleura and the mediastinal structures.

Indurative mediastinitis may exist alone or in conjunction with chronic pericarditis; sometimes, however, the pericarditis is secondary to the mediastinitis, which in turn originates from diseased bronchial or mediastinal glands, malignant growth, tuberculosis of lungs or glands, or by suppurative processes; the inflammation consists of a hyperplasia of mediastinal connective tissue, binding the structures firmly together, to the pericardium, to the pleura and lungs, anterior chest wall, and to the diaphragm, to the œsophagus and vertebral column; in rare cases thickening and adhesion have been so great as to lead to partial occlusion of the vena cava, aorta, and pulmonary artery; fatty degeneration sometimes occurs in this tissue, followed by the deposition of lime salts and calcification. These mediastinal cases can be divided into three varieties (Harris): First, where there is obliteration of the pericardial cavity, and a great increase in the mediastinal connective tissue, often with caseation; second, obliterative pericarditis, with adhesion to structures with which the pericardium is in contact, but without much increase in mediastinal connective tissue, and thirdly, mediastinitis without pericarditis.

When there is much proliferation of connective tissue, as with the mediastinal cases, chronic pleuritis, chronic perihepatitis, and proliferative peritonitis are apt to occur. The omentum is rolled up and thickened, there is new tissue in the mesenteric covering of the intestines, the liver and spleen are bound firmly to the diaphragm and neighboring structures, their vessels being engorged tremendously, their parenchyma atrophied; this causes ascites with the appearance of cirrhosis of the liver, the liver, however, really showing only slight increase of connective tissue. The heart is enormous in some of these cases, the valves are insufficient and the myocardium is degenerated; Osler reports one heart of ten and one-half inches diameter, the right auricle alone being six inches in diameter.

The pericardial growth often begins in childhood; in infancy pericarditis is rare, but in older children it is not uncommon; when occurring in childhood it is frequently accompanied by fluid, and this fluid may be bloody without apparently being tuberculous. It also becomes purulent more often than in the adult, the purulent effusion spreading by extension from a neighboring focus, as empyema, or being part of a general infection. Endocarditis is very common among children, and the worst cases of heart disease are those complicated by pericarditis, the chief danger being degeneration of the myocardium, fatty, granular, and later fibrous. We are apt to lose sight of the condition of the pericardium of those children who recover from their acute pericardial attacks, but they form a large percentage of the adherent pericardia which come to necropsy later in life.

* Read before the Academy of Medicine (Medical Section), December, 1896.

Tuberculous pericarditis is either a part of a general miliary infection, or occurs by extension from adjacent lung or pleura; primary tuberculosis is rare as reported by Virchow. Syphilitic inflammation of the pericardium is very uncommon; when it does occur it takes place as a late secondary or as a tertiary lesion, but may in rare cases be congenital; there is generally diffusely formed connective tissue, but there may be gummata. Syphilis of the myocardium is more common. New growth occurs as a part of a general mediastinal involvement.

Among 2000 autopsies at the New York Presbyterian Hospital there were seventy-seven cases of fibrous pericarditis, or about $3\frac{1}{2}$ per cent. of the post mortem examinations. Forty-five of these seventy-seven were extensive, involving the greater part of the sac; thirty-two were slight; there was but one case of mediastino pericarditis. In thirty-three of the seventy-seven there was existing endocarditis; in five, gross myocardial changes occurred; in fifteen, there was marked sclerosis of the coronary arteries; in four, severe aortic sclerosis; in four, aneurysm, and in thirty-three, chronic diffuse nephritis. Of these seventy-seven patients nine were tuberculous, four having pulmonary tuberculosis and five having general miliary tuberculosis. Among the 2000 autopsies there were 329 cases of chronic endocarditis, so that chronic pericarditis forms about 5 per cent. of cases of chronic valvular disease. Among 324 cases of pericarditis, reported by Breitung from the Charité Hospital, Berlin, there were 134 cases of pericardial adhesion, or 41 per cent. At St. Mary's Free Hospital for Children, New York, out of ninety-seven autopsies there were five cases of adherent pericardium; there were also among this number four cases of pyopericardium, with considerable thickening but without actual adhesion. Leudet, in 1,002 autopsies, found partial adhesion in 5 per cent., and total adhesion in 2.5 per cent.

Symptomatically the disease can be divided into a number of fairly well defined classes.

1: As before stated cases run a latent course and are only discovered upon the autopsy table. In these there may be more or less general adhesion, but the synechiæ seem to have caused no trouble during life.

2: Not infrequently we find patients, sometimes young adults, in whom we discern during routine examination, a harsh, coarse, systolic murmur over the pulmonary, increased by pressure and by leaning forward; the second pulmonary sound is accentuated, the murmur is too harsh for a hæmic bruit, there is no reason to think it transmitted across the sternum from the aorta, and the condition may or may not have caused symptoms. It seems to me that many of these cases have adhesions around the base of the heart. At the Cornell medical dispensary we have, during the last few years, collected a good number of such cases.

3: In other cases there may be circulatory embarrassment, palpitation, irregularity, and intermission of the heart beats, sometimes precordial pain; these breaks in compensation cannot be ascribed to any exact cause, there is moderate general hypertrophy, sometimes tenderness over the base of the heart; auscultation reveals no murmur or friction sound to account for the cardiac change so that we can make only a tentative diagnosis, from the absence of any direct signs. Not infrequently, how-

ever, hearts of this character do have over the pulmonary area a harsh, sometimes grating, systolic murmur, increased by pressure and by leaning forward. The picture reminds one of chronic endocarditis with exacerbations but without direct evidence of endocarditis. The incompetency is due to myocardial degeneration.

4: Where there is adhesion between the outer surface of the pericardium and the neighboring structures, there is considerable enlargement of the heart with diffuse pulsation of the præcordium, and systolic retraction of the apex, which may be in the seventh space even in the anterior axillary line; there may also be retraction at the tenth or eleventh rib, behind where the diaphragm is attached. The adhesions fix the heart pretty firmly to the chest, so there is practically no movement of the apex to right or left, as the patient turns from one side to the other, in the recumbent position; Litten's sign disappears with obliteration of the pericardial cavity; there is a decided rebound or shock synchronous with the diastole, which can plainly be appreciated by the hand. Paradoxical pulse, which becomes feebler and slower during inspiration may be present; this effect upon the pulse is due to constriction of the great vessels during expansion of the lungs. Diastolic collapse of the cervical veins is not a sign of much importance. Cardiac dullness may reach to the second or even to the first rib and to a proportional distance either side of the sternum, due both to the size of the heart and to the amount of mediastinal tissue involved. Auscultation may reveal murmurs of chronic endocarditis, pleuropericarditis, or relative insufficiency; these latter are usually systolic, but Osler and Hale White have called attention to presystolic murmurs as well.

5: Severe cases of mediastinopericarditis resemble the last group except that the mediastinal inflammation is more widespread, with consequently more serious changes in the abdominal viscera. The patients suffer from cyanosis and dyspnœa, and from constantly recurring ascites, as many as twenty or more tapplings being necessary sometimes. After the removal of the fluid, the liver is easily palpable. Increase in the size of the liver is owing mostly to passive congestion, due both to cardiac dilation and to obstruction of the vena cava by the pericardial and the perihepatic growth. The new tissue formed in the liver is seldom great in amount, and often not enough to account for the ascites by obstruction of the portal system of veins. The liver is sometimes nutmeg-like, the atrophic alteration being absent; occasionally, however, atrophic changes are present. A curious appearance is the frosted or iced liver. *Zuckergussleber*, a white thick fibrous mass of connective tissue coating the liver and leading to much irregularity and distortion. The spleen is usually not enlarged as it would be in portal obstruction, but also shows passive congestion.

Ascites occurs most frequently alone, but sometimes together with œdema of the extremities, although this latter is not a factor of the disease. subcutaneous œdema is due to cardiac insufficiency, the ascites may also be due to this cause, but more often is out of proportion to the general anascara, and also out of proportion to the changes found in the substance of the liver after death.

There are various opinions held as to the cause of

this ascites. Harris thinks the fluid due to chronic peritonitis produced by passive congestion of the liver. Pick holds it to be due to the connective tissue found in the liver, and that the peritoneal thickenings are due to the long continuance of the fluid. Others, as Weiss and Heidman, think it due to the fact that the peritoneal vessels show less resistance than those of the extremities and subcutaneous tissues. Rosenbach attributes it to fibrous alterations in the liver capsule, this being an extension from the pericardium. Other writers as DeRenzi and Kelly consider that there is first an exudation into the various serous membranes, a polyserositis, of slow and long continued course, and that the fluid portion is finally absorbed leaving adhesions which result in the obliteration of the cavities. None except Gibson attribute it to compression of the vena cava, by the great increase in connective tissue and calcareous material of the pericardium and mediastinum; to this I should like to add compression of the hepatic veins at their point of entrance into the vena cava, by the perihepatic thickening and the subdiaphragmatic connective tissue.

The primary focus of disease is difficult to determine and several different theories have been advanced; many observers place the pericarditis first and the pleuritis and peritonitis secondary. Certain it is that some of the reported cases give histories of former attacks of acute pericarditis, other observers look upon the perihepatitis as primary, the pericardium, pleura, and peritonæum being invaded by contiguity. Kelly thinks that all serous membranes become infected at the same time by some "noxious agent," and that the "noxious agent" travelling by the lymphatic system upward, causes most exudation and thickening about the liver and diaphragm.

Obliteration of the pericardium and other serous membranes is now looked upon by many writers as tuberculous in character, although tubercle bacilli cannot always be found; cases supposedly nontuberculous have been proved to be so upon inoculation.

The prevailing picture in this last variety of cases is enlargement of the liver and ascites, and it is difficult of distinction from cirrhosis of the liver. The chief factors of distinction are: Absence of the causes of cirrhosis, nondilatation of the superficial veins, absence of the common symptoms of liver obstruction as hæmatemesis, jaundice, hæmorrhoids, diarrhoea, or constipation, signs of chronic pericarditis. The course of the disease in the mild forms of chronic pericarditis extends over years; in the severe cases it is hard to determine, for we never know how long the disease has been present when first discovered; the outlook however is always grave.

The cause of death in the mild cases is that patients die of intercurrent diseases which have nothing to do with the pericarditis, while in severe cases death is usually gradual, owing to the gradual cardiac failure due to increasing dilation. Sudden death may occur however at any time from myocardial degeneration or coronary sclerosis.

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48 WEST FORTY-EIGHTH STREET.

A CASE OF RHINOSCLEROMA TREATED WITH THE X RAY.*

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Since 1870, in which year Hebra drew attention to the fact that rhinoscleroma was a distinct disease, our knowledge in reference to this affection has been greatly awakened. Hebra came to the conclusion that he had to do with a slowly progressing disease, which was characterized by the formation of hard nodules in the mucous membrane of the nose and throat, which eventually broke down into ulcerations, and finally formed into bands of connective tissue. This information, however, left observers in doubt as to the true nature of rhinoscleroma, and it was not until Mikulicz, in 1876, made careful pathological examinations of a large number of cases, that we derive our first definite knowledge of the true histology of this heretofore unknown affection.

The careful studies of this author now gave the disease a distinct character so that the clinical diagnosis no longer remained in doubt, and cases of this nature were no longer looked upon as a glioma, or granulation sarcoma, a tertiary syphilis, a lupus hypertrophicus, or as a sort of carcinoma or adenoma. The ætiology of the disease remained obscure, however, and it was not until six years later, namely, 1882, that Frisch discovered a short bacillus in the tissues of rhinoscleroma, which he regarded as the causative factor. Since that time cases have been reported in all parts of Europe and America, and we are no longer at a loss to make a correct diagnosis when we meet with a case of this nature. The disease itself seems to be endemic, being confined to certain localized regions, as, for instance, in Eastern Galicia, Russia, Russian Poland, Hungary, Bohemia, and Southern Austria. A few cases have, however, been observed in Central

* Presented before the Laryngological Section of the New York Academy of Medicine, October 24, 1906.

America, and Alvarez is said to have seen several cases in San Salvador. It is a surprising fact, however, that all the cases which we see here, and the large number which the writer had occasion to see in Vienna, were of Russian birth, and that all the cases reported in this country have been in individuals born in Galicia or in its vicinity. The disease does not seem to have the tendency to spread, and is not contagious. It is not transmitted from one person to another, so that its

are observed more frequently now, but mainly to demonstrate the surprising and beneficial influence of the x ray treatment upon growths of this nature. It has been only within the last year that the x ray treatment has been applied to this disease with such gratifying results that we may now say that we have at our command an agent by which we can stay the process of the disease, if not bring about a cure of this affection, which was formally looked upon as hopeless. As the x ray was the only agent used in the writer's case, he will briefly give its history, and will also add several photographs taken five months ago when the patient presented herself for the first time, and others taken recently, so that the reader can by comparison see for himself the gratifying and surprising result obtained by this mode of treatment.

Becky C., fifty three years of age, a Russian by birth, married. Family history, negative; no one having had a similar affection; children all healthy. Present illness dates back sixteen years. At that time the patient began to complain of a sore throat and a catarrhal condition of her nasopharynx; this grew worse until it finally resulted in ulcerations on the pillars of the tonsils, and on the posterior wall of the pharynx, which were treated at some clinic in Kiew, Russia; and event-



FIG. 1.—Taken June 1, 1906.

mode of acquisition is still obscure. It develops generally in middle aged persons of both sex, seldom in young individuals, and hardly ever in children under ten years of age, or in persons of advanced age.

Rhinoscleroma runs a slow insidious course often lasting months and years until cicatrization takes place, or the process finds a new focus for invasion. It does not affect the general system and may run on for years without creating any general disability. It remains localized to the mucous membrane of the nose and throat, and never undergoes metastasis to other regions of the body.

The prognosis has heretofore been regarded as very unsatisfactory so that all cases of rhinoscleroma have been looked upon as incurable. If we consult the most recent textbooks on the nose and throat and also the literature which has been published the last few years on this subject, it will be found that they all agree that medication of all kinds, both internally and externally, has proved a failure.

In presenting this case the writer does so, not so much because he has to do with a case of rhinoscleroma, since such cases, as stated already,



FIG. 2.—Taken June 1, 1906.

usually healed, leaving large linear cicatrices. When the process had gone on for four years, the uvula had entirely disappeared and firm connective bands formed in its place. From now on, the process began to spread up into the posterior nares and into the nose itself. The patient then complained of a slight discharge from her nose, and of difficulty in breathing, owing to her nasal obstruction. Several operations were then performed to remove the obstructing tissue in order to afford her some relief, and the tissue removed was at the same time examined pathologically, and found to be, according to the patient's own statements, rhinoscleroma. All

operative measures and internal medication proved useless, as the process kept on extending and the nares became more and more obstructed so that nasal respiration was entirely impeded. The process in the pharynx and posterior nares seemed to have become exhausted and the connective tissue bands which formed at that time remained stationary. Four years ago, the tumefaction in her nose increased rather rapidly, so



FIG. 3.—Taken June 1, 1906.

that it appeared externally in both nostrils and spread down towards the tip of the nose causing an enlargement of the entire organ to nearly double its size, and giving the patient a most ungainly appearance.

The writer saw her for the first time at the New York Ophthalmic and Aural Institute on May 26, 1906. She presented a well nourished individual in perfect health, with the exception of her nasal affection. In examining her throat the writer found the larynx absolutely free and not involved in the process. The pharynx was one mass of firm cicatrices showing that the process had run its course there, and was no longer any source of trouble to the patient. The uvula was entirely gone and presented the appearance of a partial cleft palate. Bands of connective tissue were also seen in the posterior nares with the postrhinoscopic mirror. The nose itself was enlarged to double its normal size. The nasal passages were entirely occluded so that respiration through the nose was entirely suspended. The upper portion was broadened out and the lower part was one large mass, so that the outlines of the nostrils were utterly obliterated, and the tumefaction extended down as a large projection almost to the upper lip. The entire organ looked like one globular mass, the skin was red and tense, and the lower part was covered with large ulcerations, which gave forth a watery secretion. The entire nose felt stony hard to the touch and seemed fixed (Compare Figs. 1, 2,

3). Upon careful examination the writer decided that he had to deal with a case of rhinoscleroma of long standing, and upon questioning the patient learned from her

that she was told in Kiew, Russia, that she had rhinoscleroma. Having been convinced from the reports of trustworthy sources and from personal experience that both internal and external medication proved of no avail, the writer advised the administration of the x ray, with the hope that improvement might be obtained. Having no x ray facilities at the institution she was first sent to Dr. Emil Mayer's clinic at the Mount Sinai Hospital on June 1st of last year; there a small piece was removed from the pharynx and sent to the pathologist for examination. His report was that the specimen showed all the characteristic changes of rhinoscleroma, so that the clinical diagnosis was verified. She was then transferred to the x ray department for further treatment.

Treatment.—This was carried out in the x ray department under the personal supervision of Dr. S. Stern. The treatment itself was simple and was accompanied by no unpleasant sequelæ. The x ray tube was entirely encapsulated with a layer of lead and over this a layer of felt, with the exception of a small orifice two inches in diameter through which the rays were allowed to act upon the diseased parts. The patient was placed in front of this tube with her nose three to four inches away from the orifice, and the rays were allowed to play upon the parts for three to four minutes. These sittings were carried out three times a week since June 1st, which is now a period of five months. The patient suffered no unpleasant effects from this treatment during this time, with the exception of a slight dermatitis now and then, when treatment would be suspended and again resumed when the redness passed away. According to Dr. Stern a great



FIG. 4.—Taken November 1, 1906.

deal depends upon the proper application of the ray. He states that it is far better in these cases to give short exposures with high frequency currents than long exposures with low frequency. The effect of this treatment has been remarkable, and more than had been expected. At the end of the fifth month the nose was reduced to almost its normal size, the redness disappeared, the tissues became softer and more pliable, and the outline of the nostrils which was entirely obliterated again returned. The tumefied masses which pro-

truded at the nostrils retracted entirely, the ulcerations dried up, and the inferior part of the tip of the nose, which reached down to almost the upper lip, retracted entirely.

The upper part of the nose is still somewhat broadened out, and the passages in the nose are still occluded, so that nasal respiration is not yet restored. The ungainly appearance of the patient is no longer



FIG. 5. Taken November 1, 1906.

evident, so that she can now go about without any embarrassment or without attracting any notice as prior to her treatment. It is hoped that with a continuance of this mode of treatment we will be able to bring about a perfectly normal condition, and that the obstruction which now exists will be entirely eradicated without any surgical intervention. In those cases in which pieces are removed from the nasal cavity to relieve the obstruction the tissue seems to have the tendency to grow more rapidly, so that the writer does not deem this a wise procedure. The cicatrices in the pharynx were not treated, as the process appears to have been exhausted there, and there has been no extension of the disease. It appears that as soon as cicatrices have formed, the disease has run its course and the affection remains stationary, so that we may no longer expect a continuance of the destructive process.

The case which Dr. S. Pollitzer showed also had a large tumefaction of the organ and occlusion of the passages. In this case the swelling disappeared under x ray treatment, but the obstruction in the nasal passages did not undergo much change, so that the interior of the nose was opened up surgically and splints allowed to remain until the parts became cicatricized. There is now a lapse of five months and no recurrence has as yet taken place.

What action the x ray has upon tumors of this character the writer cannot explain, but he thinks that the marked diminution in the size of the

growth is evidently not due to a breaking down of the tissue, but to a gradual absorption brought about by some chemical change. The excellent result obtained by Dr. Pollitzer and the marked improvement noted in the writer's case certainly demonstrate the remarkable effect of the x ray in growths of this nature, so that we may hope that we have at last found a means by which we can successfully treat cases of rhinoscleroma.

The important features in the writer's case are:

1. The duration of the affection, namely, sixteen years. This is an unusually long time; Miculicz also reported two cases in the *Archiv für klinische Chirurgie*, xx, 1876, in which the disease existed sixteen years. Medication of all kinds had been tried, but no improvement was obtained. Some authors have recently asserted to have obtained good results with thyroid extract, but the writer has never seen it used and cannot speak of its efficacy.

2. The complete freedom of the larynx. This is usually not the case, as it has been found that when the process is very extensive, as for instance in this case, the larynx is generally involved.

3. The extraordinary large size of the entire organ. Although the writer has seen cases in which the nose has assumed immense propor-



FIG. 6. Taken November 1, 1906.

tions, he has never met with a case in which there were such extensive masses around the nasal orifices, and in which the tip extended so far down, and was so tumefied. Freudenthal's case, recorded in the *New York Medical Journal*, February 1, 1896, shows a marked enlargement of the nose; this was, however, confined mainly to the upper portion and interior, but the patient also complained of nasal obstruction. The lower

part was apparently not involved and the outline of the nostrils remained unchanged. The marked enlargement at the tip and the raw ulcerating masses gave the writer's case this ungainly appearance, which no longer exists.

4. The case shows us the surprising effect of the x ray in growths of this nature. In all recent textbooks and in all cases of rhinoscleroma reported up to now the same opinion prevails, that treatment is of no avail. Freudenthal even states, "regarding the therapeutic measures to be taken in such cases we are entirely at a loss what to do." Other authors have expressed the same opinion, but if we take into consideration the case shown by Dr. Pollitzer and the result obtained in the writer's case, we see that this statement can not be refuted and may now place great hopes in the future use of the x ray. Dr. Stern has devised some small tubes with which he will try to have the rays play directly upon the interior of the nose, and by this means see if it is not possible to overcome the nasal occlusion without any surgical interference.

Whether these patients may be regarded as cured remains to be seen, as only time can decide this. It is hoped, however, that recurrence will not take place, and that we have at last found in the x ray a therapeutic agent by which we can at least stay the process of this disease. It is also to be hoped that we will eventually be able to state positively that we can (with the x ray) cure all cases of rhinoscleroma, which heretofore have been regarded as most refractory to treatment.

57 EAST NINETIETH STREET.

SPONDYLITIS DEFORMANS, WITH REPORT OF CASES.*

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This disease, to which the name of spondylitis deformans is now commonly given, is an osteoarthritis, which causes ankylosis of the spine alone, or of the spine and one or more of the large joints. In England it goes by the same name. In France, Marie named it spondylose rhizomélisque. In Germany, von Strümpell applied the term chronic ankylosing inflammation. In Russia, von Bechterew described it as ankylosing inflammation of the spine. The causes and types of this disease are not yet well defined, and about two hundred cases only have been reported, although the condition is a common one. The writer wishes to add to the list seven more, two of which are unusually interesting owing to the fact that the cause of their spinal conditions was probably the toxines of tuberculosis.

There are a number of causes for the onset. It most commonly appears in young adults, especially males, but may begin in old people. A hereditary history of the condition is sometimes found. In many cases the exciting cause has been overwork or exposure to cold and wet. Traumatism to the spine has been the chief factor in a small number. It may seem to depend upon coexisting lesions of the nervous system, e. g., syringomyelia. A preceding acute rheumatism or prolonged gonorrhoea appears in many histories. In some cases an infec-

tious disease, as influenza or syphilis, seems to have aetiological significance. In two of the following histories, (Cases VI and VII), it will be seen that the cases strongly suggest ankylosing tuberculous rheumatism. Poncet gave this name in 1890 to a form of joint trouble which may accompany tuberculosis of any organ. The lesion is a dry fibroarthritis tending to ankylosis and simulating subacute or chronic rheumatism. He believed that the lesions were irritative and due to the toxines and not to the local growth of the tubercle bacillus. The differential diagnosis is that in this form, the subjects are tuberculous as shown by their reaction to tuberculin, or the presence of bacilli in the sputum, or by autopsy. The lesions persist. The pain is central in the joint and not periarticular. The salicylates are of no value, and the whole course is atypical of rheumatism. In 1905, Poncet cited the cases reported by other men and brought the list up to fourteen, which included one case of spondylitis deformans. Maillard, in 1901, reported three cases of polyarthritis of this type in which the autopsies showed tuberculosis of the lungs or pleura. Edsall and Lavenson, in 1903, studied eighteen cases of arthritis deformans, subjecting all patients to the tuberculin test. Seven reacted strongly. One of these was a boy of thirteen years, suffering from Still's disease, nearly all the joints of his body being involved, including the cervical spine. As a result of their investigations, especially in this last case, they concluded that tuberculosis of a low grade, like other infectious diseases, may cause a chronic polyarthritis of the same type as arthritis deformans, but entirely unlike the classical types of tuberculous joint troubles as described in the textbooks. They drew attention to the following suggestive facts: There is often a family history of tuberculosis in these patients; there is sometimes a local tuberculous lesion; the French observers have produced tuberculosis in guinea pigs by injecting into them fluid or tissue obtained from such joints; in some the x ray seemingly showed disease by the rarefaction of the ends of the bones; as analogous conditions, some cases of chronic serositis are tuberculous, and some cases simulating pseudoleukæmia are instances of lymphatic tuberculosis. Githens says that tuberculosis is mentioned in a few cases of spondylitis deformans, and has been found in a large proportion of the autopsied cases. He thinks its frequency may be due to susceptibility from lessened expansion as a result of the kyphosis and the ankylosis of the ribs. In McCrae's list of twenty-two cases, the reaction to tuberculin was always negative. The recent work of Rogers on the treatment of gonorrhœal rheumatism by an anti-gonococcus serum is to be remembered in this connection, as two of his cases were indistinguishable from arthritis deformans, and in one of them great improvement as regarded active inflammation followed the use of the serum. To sum up the matter, it may be said that the onset of spondylitis deformans frequently follows infectious diseases, and that it is quite possible that tuberculosis may be numbered among them.

The pathology of the disease is the same as in general osteoarthritis. There are two general types. In the first, which is generally accepted as a form of arthritis deformans, there is enlargement of the

* Read at the Buffalo Academy of Medicine, November 7, 1906.

edges of the articular cartilages and growth of new bone over the sides of the vertebral bodies and into the ligaments. In the second the process begins as an ankylosis of the posterior articular processes, and the new bone spreads into the surrounding ligaments. The lesion usually involves chiefly the anterior ligaments, binding the vertebrae together, but it is unequally distributed on the sides of the bodies and in the different spinal regions. It may involve the posterior ligaments and press on the cord. New bone may form at the posterior articulations and cause root symptoms. If the rib articulations are involved there is little or no chest expansion. If the intervertebral cartilages ossify before absorption a straight "poker" spine results. If they atrophy first it causes a long general kyphosis. One writer has picturesquely said that it appears as if liquid bone had been poured over the spine and allowed to harden in irregular nodules and sheets. Certainly one is impressed in the examination of such a spine in the dissecting room, especially if he attempts to cut across an intervertebral disc or separate a rib from the spine without breaking it.

The onset of symptoms is usually acute with pain, stiffness, and soreness. It may be slow with gradually increasing stiffness as the only sign. The pain is local, referred indefinitely to the back, or peripheral, referred to the sides of the body and down the thighs. It is at times unilateral. It is usually steady and dull, and sometimes worse at night. With pressure on the nerve roots, it may be sharper and radiating, with paræsthesiæ. It is increased on jarring or motion, consequently the patients often wear rubber heels and hold themselves stiffly. The posture may be overerect with absence of the lumbar lordosis. On the other hand the patient may be bent forward in a roundshouldered position. In the extreme cases with hip involvement the patient may represent one long curve with the head in a wry neck position. The chief complaint is pain and stiffness, coupled with a general condition of depression, weakness, constipation, and disturbed rest.

On examination, the following objective symptoms are apparent. The patient looks pale and thin. The dorsal kyphosis is increased or lessened. The lumbar lordosis is usually flattened. Some lateral curvature may be present. The back muscles are atrophied. Tenderness on pressure is often present over the erector spinæ muscles or over the sciatic nerves. In many cases a peculiar hardness of the back muscles is found, which makes one think of myositis ossificans. Ruhräh, in fact, mentions the formation of bone in the trapezius muscle. This muscle rigidity, in itself, may limit the shoulder and hip motions even if those joints are not involved (see Case II.). On testing the spinal motions, muscular spasm is frequently found in the early case. Rigidity, the main diagnostic symptom, is apparent in part or all of the spine. Involvement of the upper cervical region will prevent the motions of yes or no, and the patient may be unable to look in the face of the person who is standing before him. By the tape measure one may find the chest expansion absent or greatly diminished, showing invasion of the rib articulations. This symptom occurred in four of Goldthwait's ten cases. The knee jerks are often increased in the acute stages, with ankle clonus. In

McCrea's twenty-two cases, thirteen showed spinal involvement only, and in the remainder other joints were affected. The blood is normal or shows a slight grade of anæmia. The x ray depicts shadows between the vertebral bodies. As in other diseases, certain types present themselves according to the region diseased. One of the most important is that in which there is a single or double sciatica due to bony pressure in the lumbar spine. This class is apt to be overlooked (see Case IV.), and it is a good rule to examine for rigidity of the lumbar region in persistent sciatica, as it is only in this way that the diagnosis can be made.

The prognosis is in general good. After a variable period of time, the acute symptoms ameliorate, the patient gains in weight, strength, and color; and stiffness alone remains. The disease is not apt to spread to other joints, although Marie gave the name of spondylose rhizomélisque to the condition because the neighboring hip and shoulder joints were invaded in his cases. Nothing can be done for the curvatures, except to try to prevent them from increasing. In one of the cases mentioned later on, exhaustion and death ensued from what seemed to be pressure on the spinal and possibly the sympathetic nerves. Ordinarily such pressure is lessened in the chronic stage by bony absorption and diminished hyperæmia. Tuberculosis of the lungs may develop when the chest is immobile.

The diagnosis is made from the history, the spinal rigidity without sharp kyphosis, the lessened chest expansion (a pathognomonic symptom according to Bradford and Lovett), the absence of reaction to tuberculin, and the x ray picture. If the x ray shows no new bone, the posterior articulations may alone be involved. Rarely one may feel bony nodules at the back of the pharynx or about the upper cervical vertebrae.

The differential diagnosis has to be made from other conditions which may cause spinal rigidity. The senile and occupation kyphoses show stiffness and deformity only, without subjective signs. In Pott's disease, the kyphosis is sharp, the pain acute and peripheral, and the x ray positive. In the typhoid spine the preceding history and quicker recovery aid in diagnosis. Trauma may cause a spinal rigidity of the Kummel type, where it stimulates Pott's disease by a sharp kyphosis and local symptoms. Or it may cause a sprain of the spine in which the rigidity is not absolute. Syphilis and malignant disease of the spine also simulate Pott's disease. In syphilis, other lesions are present, and in malignant disease there is steady progress toward a fatal termination. In the neurotic spine rigidity is again absent, and limited motion is due to pain or muscle spasm. Sciatica and sacroiliac disease may cause a scoliosis and muscular spasm in the lower back. It will be found by careful examination that pain prevents the normal motions. The spine is often involved in rheumatoid arthritis. In this disease other joints are affected, the lesions are not so persistent, and the cervical region is the area attacked. In osteitis deformans the spinal symptoms are similar, but the rigidity is not so absolute and the x ray shows involvement of other bones. Elliott and other observers describe a type of muscular spinal rigidity which is probably a chronic myositis.

The symptoms are lumbago, stiffness, and a peculiar hardness of the muscles. Under anæsthesia no ankylosis is found. The treatment is by passive motion, massage, and electricity. It must be remembered that stiffness of the spine may accompany tabes, syringomyelia, paralysis agitans, and other cord conditions.

The treatment is general and local. The general



FIG. 1.—CASE I.

treatment is not unlike that of a consumptive. Abundant fresh air, rest, generous feeding of meat, milk, eggs, and green vegetables. Laxatives to regulate the bowels. Tonics, especially arsenic and the syrup of iron iodide, which last is to be continued a long time. Sodium phosphate is strongly recommended. The local indication is rest for the spine, rest in bed while the symptoms are acute, then fixation for the spine when there is pain, even if the spine is rigid. The plaster or leather jacket, with or without head attachment are employed. Whitman has used the Sayre's suspension treatment for referred pains. Rubber heels afford additional comfort. As local measures, the cautery, hot air baking, and hot baths lessen the pain.

Summary of the following cases: Five patients were males and two were females. In one patient no cause was found, in the others were trauma, overwork, exposure, influenza, and tuberculosis. The symptoms began acutely in five cases, slowly in two. Two patients had the straight poker spine, one showed no change in contour, and four were arched forward. The spine alone was involved in six patients. The lumbar region was attacked in one pa-

tient; the dorsal in one patient; the dorsal and lumbar in one patient; the cervical, dorsal, and lumbar regions in four patients, one of whom has involvement of the atloaxoid articulations. Two patients died, and two were improved by treatment.

CASE I.—E. M., female, aged sixty-seven. (This case was mentioned in an article in *American Medicine*, August 1, 1903.) She had worked hard all her life in caring for a large family. Malaria at the age of thirty-five, with no recurring attacks. In March, 1901, Dr. J. W. Putnam referred her to the writer. She was then suffering from a neuritis of the right arm, following an attack of influenza. There was severe pain, weakness, atrophy, imperfect sensation, and tender points over the nerves. After one month of treatment, she was practically well. Four months later, she returned, saying that sharp pains had returned in the shoulder and arm. As the old symptoms had disappeared, and the arm was normal as to sensation and power, the spine was examined. There was a moderate even kyphosis in the dorsal region, which caused very round shoulders. A scoliosis with the convexity to the right existed. The entire dorsal spine was absolutely rigid, and stretching in the Sayre suspension did not affect the contour. There was no chest expansion, and the breathing was diaphragmatic. Attempts at motion were painful. Spasm was absent, and tenderness was moderate. Various measures were used in succession; rest in bed, a leather jacket, the cautery, hot air baking, and hot baths, and a number of drugs. Gradually the pains extended to the left arm, the chest, and upper abdomen. She grew weaker, lost flesh, and soon could not leave her bed. Finally, obstinate vomiting began, and she died in an emaciated, exhausted condition about a year after the onset of the disease. No autopsy could be obtained. There was at no time an indication of spinal cord trouble, but symptoms of nerve root pressure.

CASE II.—E. K., aged forty-two, widow, referred by Dr. J. W. Putnam, June 15, 1900. Family history, negative. Personal history, she had had two children. She had never had any serious illness or injury. The only apparent cause for her present condition was overwork in caring for a sick husband for six years. She said that for the previous year she had had aching pains and stiffness in the neck and between the shoulders. This had steadily grown worse, and interfered with her rest at night. All walking or jarring increased her pain. She had great difficulty in raising her arm, combing her hair, or in rising from a prone position. She was unable to sleep at night on her side, and had to be liberally supported by pillows. There was loss of flesh and strength and inability to work. She was a tall, pale, thin woman, whose facial



FIG. 2.—CASE II.

expression showed constant suffering. The upper spine was bowed in a long kyphosis. The head was bent forward and tilted to the right, so that on standing she could not quite see the face of a person standing before her. Her entire spine was rigid, including the cervical region. Absolutely no movement could be detected from the head to the sacrum. There was no chest expansion. All the back muscles, especially the trapezius and underlying muscles, were firmly contracted and peculiarly hard to the touch, so much so that one consultant thought it was myositis ossificans. Tenderness was marked. Treatment afforded her no relief. Four years later improvement began. In August, 1906, there were no longer any acute symptoms. Sudden jarring motions alone distressed her. She had gained in flesh and strength, and could do her own house work. Her chief complaint was inability to comb her hair and see people on the street. There remained the rigidity and hardness of muscle. The arms could not be raised above a right angle, and the thighs could not be flexed beyond a right angle or hyperextended. All other motions were good. This limitation seemed to be due to the rigidity of the muscles, as the scapulæ would not rotate and the lumbar lordosis was flat and rigid.

CASE III.—W. H., aged thirty-seven, referred by Dr. Charles G. Stockton, June, 1905. One brother had died of consumption; otherwise the history was negative. No infectious disease or injury. When twenty years old he had worked very hard one summer day and had become overheated. Then he had an acute onset the next day of lumbago, with severe pains and tenderness in all the back muscles. Sciatica was also present. He was confined to bed for two weeks. The pains, however, continued, and the lumbar region was tender for many years. During the past two years he had discontinued all manual work, confining himself to desk work. He no longer suffered pain, but complained of a stiff back and round shoulders. He had been to doctors, sanitarias, and osteopaths without result. Examination showed a well built, ruddy man of average size. The lumbar lordosis persisted, but the normal dorsal kyphosis was exaggerated, and the shoulders were forward. From the axis to the sacrum there was complete rigidity. All other joint movements were normal. The chest expansion was three quarters of an inch, whereas in youth it had been large. The reflexes were exaggerated all over the body. A complete physical examination by Dr. Stockton showed the internal organs in perfect condition.

CASE IV.—L. W. B., aged forty-four, examined in April, 1905. Occupation, a carpenter. This man had had acute rheumatism at the age of thirteen. He recovered, but soon developed a severe lateral curvature of the spine which was treated by plaster jackets for several years. His present trouble dated from a fall off a trolley car two years before. The left hip was injured, and since then the back and hip had become bent and stiff. He suffered continual pain and could walk only a short distance. A number of physicians had treated him for sciatic rheumatism. He stood with the body inclined forward about 45 degrees, chiefly owing to the hip flexion. There was a marked limp. On examination the usual S-shaped curvature with rotation was evident. The lumbar region showed no motion. The left sciatic nerve was tender throughout its length. Atrophy of the left thigh, one inch. The left hip joint showed absence of abduction and of rotation; adduction limited; flexion only to 90 degrees; extension considerably less than 180 degrees. The right hip was also affected, showing limitation of abduction and extension chiefly. He refused fixation treatment and passed from observation.

CASE V.—J. G., male, aged twenty-five. April, 1903. This case was seen but once, and the record made at

that time was incomplete. Without known cause the back had become stiff and painful two years before. On examination the dorsal and lumbar spines were found absolutely rigid, and the muscles showed tenderness and spasm. Deformity absent. No kyphosis or signs of Pott's disease. The other joints were normal and the general health good.

CASE VI.—M. S., aged forty-two, a Hebrew patient at the Erie County Hospital. Under observation during the past year. Syphilis and gonorrhœa denied; alcoholism admitted. Four years ago an abscess developed in the left testis, which was excised at the German Hospital, at Buffalo, with the written diagnosis of tuberculous testicle. No tubercle bacilli were found in the pus. One year later, after a period of hard work, an illness developed which was called chronic rheumatism.

His back became stiff and tender, and he was in bed for six months. Pain in the back and pains referred to the sides and hips began and have continued with slight remissions to the present time. The greatest comfort came from rest in bed or fixation by a jacket. He is a poorly nourished man with a straight "poker" spine. Head and cervical motions good, otherwise absence of spinal motions. Chest expansion, one inch and a half. Marked tenderness over the spinal muscles. The erector spinæ groups feel hard and contracted. Any attempt at bending the spine causes increased pain. The other joints are normal, except



FIG. 3.—CASE VI.

for the left ankle, which is deformed from an old Pott's fracture. Reflexes normal. In August, 1906, without apparent cause, the left knee became distended, tender, and painful. The muscles were spastic. Atrophy of the thigh, two inches, and of the calf, one inch. He had fever, increased pain in the back, loss of flesh and strength. Under general measures improvement followed. At the present time, he is able to sit up, and has gained some weight. The acute symptoms at the knee have subsided. Recently the tuberculin test was tried. There was no reaction after the injection of one and four milligrammes. The patient refused further injections.

CASE VI.—An Italian, aged forty, seen at the Erie County Hospital in 1904. This man had emigrated a few weeks previously, and during the voyage had developed acute pulmonary tuberculosis. He was sinking rapidly with all typical signs. Tubercle bacilli were found in the sputum in abundance. The spinal symptoms began shortly after the onset of the consumption. He complained of great pain and tenderness throughout the entire spine. Examination showed a rigid, straight spine from occiput to sacrum, suggesting an involvement of all of the articular processes. Death soon followed. No autopsy.

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20 CARLTON STREET

THE SIGNIFICANCE OF BLADDER SYMPTOMS IN RELATION TO SOME SPINAL CORD LESIONS.*

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The disturbance of the urinary function in patients suffering from real or suspected spinal cord diseases are of peculiar interest not only from the standpoint of diagnosis but of treatment. The mere fact that the bladder symptoms may be attributable to a cord lesion often causes them to be passed over lightly, the patient continuing to suffer for months or years before a proper diagnosis is made or remedial measures employed to alleviate them. Our knowledge of many affections of the bladder is still obscure and we are apt, as is common elsewhere in medicine, to term a condition which is uncertain in diagnosis a neurosis. As a matter of fact true neuroses of the bladder are rather rare affections. They are due either to irritability of the sensory or motor nerves or paralysis of the motor nerves, and are variously termed, "irritable bladder," "cystitis without catarrh," "neuralgia of the vesical neck," "paralysis of the bladder," etc. Atony of the bladder, which is usually placed under this heading, is not a neurosis but a degeneration in the muscle of the viscus, in all probability due to an arteriosclerosis of its blood-vessels, in the same manner that arteriosclerosis impairs the cardiac muscle.

Degeneration in the motor centres of the cord is only too frequently met with and is responsible for the frequency of urinary symptoms in myelitis, spondylitis, tabes, multiple latent sclerosis, etc. In myelitis, depending upon the site of the disease, the initial symptom may be referable to the bladder, especially if the disease

is of a subacute or chronic character, the symptoms manifesting themselves as polyuria and urgency, or by sudden complete retention. If the sacral cord with its reflex centres of the vesical functions is affected these symptoms are most severe.

In myelitis other symptoms develop with sufficient rapidity as to make the diagnosis comparatively simple, on the other hand in tabes the bladder disturbances may last for a long period before other confirmative signs appear. It is this phenomenon with which the surgeon has most frequently to deal—the patient considering the bladder trouble as the chief disease and consulting him rather than a neurologist. Leimbach, deriving his statistics from Erb's report of 400 tabetic patients, gives vesical disturbances a percentage of 30. In 32.5 per cent. of these the vesical symptoms had formed the initial symptom. The only other symptom which was more constant was the lancinating pains. These being present in 88.25 per cent., and being the first manifest symptoms in 67 per cent. The vesical disturbances in tabes are similar to those caused by organic changes in the bladder, prostate, and urethra. They may be so slight as to escape the patient's notice and may have to be inquired for, but as a rule if they are present at all, they are very definite. The patient may have a little hesitancy in starting his stream or it may flow too freely and the desire to urinate be so urgent that he will wet his clothes before reaching a proper receptacle to void the urine into. There may be slight incontinence, during laughing or coughing or on sudden changes of position and in sleep. When the disease is advanced, incontinence and retentions are common.

It has been stated that a diagnosis of tabes is practically justified if lancinating pains and bladder disturbances only are present in a patient. With these considerations in mind the cases, whose histories are embodied in this article, have been chosen with the idea to emphasize the necessity for a closer discrimination between urinary symptoms arising from degenerative changes in the motor or sensory centres in the cord and those due wholly to organic conditions in the bladder and its annexa. In illustration of some of the difficulties in diagnosis the following four cases have been selected:

CASE I.—The first, which I report through the courtesy of Dr. L. Bolton Bangs, came under his care some years ago. The patient was a temperate man of excellent general history, aged sixty-nine. For several years he had paroxysms of dyspnoea, especially at night, for which no organic cause in the chest or nasal passages could be discovered. For several years he had had attacks of intense pain in his right leg and heel. For an indefinite period he had had frequent urination most marked at night, some hesitancy and straining during the act, and occasionally stoppage of the flow of urine. The diagnosis of locomotor ataxia had been made upon him. The patient being a clergyman and knowing the stigma which such a diagnosis placed upon his good name, felt the ignominy of it and suffered mentally accordingly. When seen by Dr. Bangs his chief symptom was the stabbing pains in his legs. In view of the bladder symptoms, however, it

* Read before the Hospital Graduates Club, New York City, November 22, 1906.

was searched and calculi found to be present. Subsequently suprapubic cystotomy was performed and two calculi removed. (See Fig. 1.)

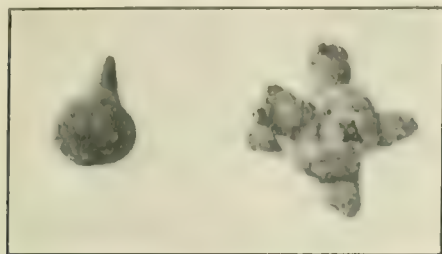


FIG. 1. Vesical calculi of remarkable shapes, giving rise to symptoms simulating tabes.

In reporting the case Dr. Bangs said: "The clinical features of this case to which I specially call your attention, were the attacks of dyspnea and the intense pain in his right leg and heel, which immediately disappeared after operation and have not returned, although he has been under my observation for over two years. This gentleman was a professional man of highly refined and delicate organization, which no doubt rendered his nerve centres susceptible to peripheral irritations long before a marked catarrh of the bladder was excited by the presence of the calculi."

CASE II.—The second case, a man fifty-six years of age, consulted me last June, presenting the following history: In his early twenties he had acquired syphilis and after a few months of treatment had been pronounced cured. He had led a temperate life, following this, with the exception of being an inveterate smoker. Four years previous to coming under my care he had been taken with sudden pains in the calf of left leg, radiating into his heel. These pains would come on in attacks and be so severe as to make him drop to the ground. As these attacks persisted he had consulted various physicians and specialists. A tentative diagnosis of tabes had been made. In March of this year, when he developed frequency of urination and slight incontinence, the diagnosis was considered positive. While I was examining him he went through one of his so called tabetic crises and fell to the floor writhing with pain. The bladder symptoms of which he then complained were frequency of urination and dribbling. There was no pain whatsoever connected with urination. He had lost his sexual power. His urine showed evidence of a mild degree of cystitis and was loaded with calcium oxalates. A searcher demonstrated the presence of multiple calculi in the blad-

der. Two days later I removed from his bladder eleven calculi by suprapubic cystotomy. (See Fig. 2.) The patient was back to his work in three weeks and up to the present time has not had a return of the attacks of pain. His urination is normal, he has regained his sexual power, but his bladder still retains two ounces of residual urine. The analysis of the calculi proved them to be largely made up of calcium oxalate. In view of the history it would be interesting to know how long the calculi had been in forming. The weight of the calculi (38.95 grammes) taken in consideration with the average total amount of oxalates excreted per day, namely 30 milligrammes, would point to it having taken at least three or more years for them to have formed. Such a period would coincide with the length of time in which his symptoms had been present.

In the third and fourth cases which I have included in this group of uncertain diagnoses there was definite spinal disease, but the urinary disturbances did not originate in the cord lesion.

CASE III.—This patient was sent to me three months ago, said to be suffering from tabes. He was fifty-nine years of age and had been a steady drinker for thirty years, rarely becoming intoxicated. Twenty years ago he had had syphilis and had taken a two years' course of treatment. He dates his present illness from an

attack of ptosis in his right eye, which suddenly appeared when fifty-three years of age. This cleared up under mixed treatment. Three years later frequency of urination and slight incontinence developed, with some unsteadiness of gait. The bladder symptoms progressed so that when first seen by me, he was urinating every thirty minutes and was compelled to wear a urinal on account of the incontinence associated with the frequency. His physician had told him that as his bladder trouble was of spinal origin local treatment would be valueless. For this reason he had gone on suffering without any attempt at relief until it had

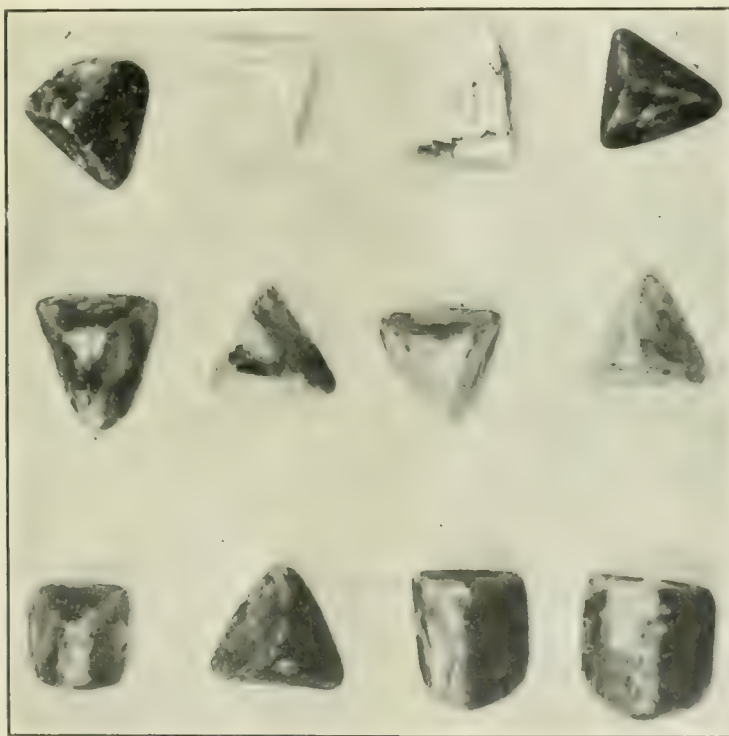


FIG. 2. Calcium oxalate calculi, about 40, actual size. Weight, 38.95 grammes.

become unbearable. His only solace was whiskey, and he was partaking of it freely. Examination of the patient showed a bladder distended almost to his ensiform cartilage. With a soft rubber catheter thirty ounces of urine were drawn and the procedure discontinued, the bladder being then only partially relieved of the overdistention. The patient was put to bed and was catheterized at twelve hour intervals, the bladder not being entirely emptied until the fourth catheterization, when fifty ounces of urine were drawn. His neurological symptoms consisted of exaggerated reflexes, sensory disturbances in the skin over the cervical distribution, coupled with some hesitancy in speaking. The pupillary reactions were sluggish. The

picture was more that of a disseminated sclerosis than of tabes. The subsequent history of the patient is as follows: He has been regularly catheterized and has had tonic applications made to the bladder and deep urethra. The incontinence has disappeared, being due of course, to the overdistention and not to sensory or motor nerve changes. Now at the end of three months treatment he has regained tonicity in the musculature of the bladder to such an extent that he can void urine easily after a residual of twelve or more ounces has collected in the bladder. He passes his catheter twice a day and has discontinued wearing a urinal. This case is regarded as one of true atony of the bladder. The patient evidences degenerative changes throughout his body. He has marked arteriosclerosis.

CASE IV.—The patient presents a history similar in prodromal symptoms to the preceding, but differing widely in the bladder lesion present. The patient was fifty-nine years old. In March, 1903, a sudden ptosis developed. He was under the care of Dr. Theodore C. Janeway, who put him upon antispecific treatment, although a definite history of syphilis was unobtainable. The ptosis cleared up in about six weeks when he began to have frequency of urination, urgency, at times slowness in starting the stream, and some nocturnal incontinence. There were also present unsteadiness of gait and pains in legs with diminished reflexes. In August, 1904, when Dr. Janeway asked me to see him with a view to possible surgical intervention, the urinary disturbances had increased to such an extent that he was passing urine ten to twelve times a night and almost every hour during the day. Rectal examination then showed a peculiarly prominent prostate but not greatly enlarged. After waiting he voided two ounces of urine and a soft catheter drew 8 ounces of residual. The prostatic urethra was exquisitely sensitive. There seemed to be such a large neurological element in the condition that he was told that this would have to be excluded before one could tell how much obstruction and other symptoms of prostatic were caused by the prostate. Local treatment of the bladder was commenced and faithfully carried out for a year, in which time his symptoms steadily increased in severity. The patient by this time had become worn out by the continual calls to urinate and disgusted with the filthy condition produced by the ever present incontinence. He begged for some operative relief, and it was decided to perform a prostatectomy and drain his bladder, if only to give him a rest from the incessant urination. On May 3, 1905, I removed the prostate through the perineal route. The lateral lobes were normal in size, but the median one was enlarged to three times its normal size. An uninterrupted recovery from the operation took place. The patient left the sanatorium at the end of four weeks. Since the operation he has not been absolutely free from urinary disturbances, but has enjoyed a measure of comfort which he had despaired of ever obtaining. He can hold his urine six or seven hours and there has been no incontinence during the day. At night, however, especially if he sleeps very soundly, a certain amount of urine will escape involuntarily. He has been able to control this largely, by learning to awake at regular intervals and evacuate the bladder. The ataxic gait has increased, which points to the lesion in the cord being progressive, and ocular symptoms have developed.

It is evident that much can be accomplished for the relief of bladder disturbances in tabetic cases when the symptoms are directly referable to degeneration in the cord centres the next history is illustrative.

CASE V.—This patient developed tabes when thirty-six years of age. He had acquired syphilis sixteen years before. The disease had run a mild course, and

he had been under treatment only for a year. The initial symptoms were frequency of urination and ataxic gait. By the end of two years additional signs of tabes had appeared, and the bladder symptoms had steadily grown worse. He was compelled to urinate four to six times at night with more or less incontinence while asleep. During the day it was necessary to wear a urinal, for he never knew when the urine would escape. The bladder contained a variable amount of residual urine, at times as much as eight or ten ounces. The patient was taught the use of the catheter and instructed to use it at regular intervals. Tonic applications were made to his bladder. As he had had two attacks of gonorrhœa, the urethra was searched with the endoscope and tender granulations found in the bulbous and penile portions. These were topically treated and healed up. He was put on increasing doses of belladonna. The treatment has been carried out for over a year and the change in the patient has been most gratifying. At present he can void his urine better and when the desire to urinate occurs can hold it until he can get to a urinal. He has long since discarded the use of the catheter and urinal. There is less disturbance at night and he occasionally goes three or four nights without incontinence. If incontinence does occur it is slight. The patient during the year of treatment has had of course his ups and downs. The symptoms have been made worse by fatiguing mental work or bodily exercise. He is an enthusiastic automobilist, and after long runs when he drives his car himself his discomfort is always increased.

These few detailed cases only go to prove how easy it is to mistake the true causative factor in dealing with certain urinary disturbances. Fully 90 per cent. of spinal cord diseases have their origin in syphilis. Tabes has been proved almost conclusively to originate from no other cause, and usually from a syphilis which has been mild in its early manifestations and has been untreated, or treated only for a short time. Although the neophyte in venery may become affected with the dread disease, it is usually the pitcher which has gone too often to the well that is broken. Thus these patients are entitled to inflammatory lesions from gonorrhœa acquired at the same source, and feeling a like sense of security from a short course of treatment, which merely ceases their immediate discomfort, abjure it. Therefore it is of prime importance in the care of tabetic bladders to seek out and treat, if they be present, any lesions of the urethra which may in the slightest way add peripheral irritation to the already degenerated cord centres. The treatment of vesical conditions due to spinal cord lesions is more or less identical to that of the organic local disease by which they are similarly produced. The spasm of the irritable structure can be relieved by the passage of a sound, and in like manner the vesical spasm of tabes may be relieved by the same procedure. The treatment of these cases frequently gives results far beyond that which one would be led to expect, in consideration of their causative factor. The utmost of persistence and perseverance is required, and nowhere in the realm of medicine is the carrying out of the details of treatment more necessary. A tabetic bladder should never be allowed to become overdistended. If it becomes necessary to place the catheter in the

patient's hands the most rigorous instruction in the technique of aseptic catheterization is imperative. Trophic disturbances are common to the disease, and on this account the patients are especially prone to infection, and a tabetic bladder once infected is no easy matter to restore to a state of asepsis. Further the smallest source of irritation should not be overlooked. Sometimes the mere division of an abnormally small meatus will do much towards relief of a vesical spasm. Mitchell, Frenkel, and others have accomplished considerable for the ataxia of tabetic patients by motor reeducation. In like manner a certain amount can be gained in relieving the weakened viscus by educating the abdominal muscles to aid the vesical detrusor. Of the drugs, belladonna administered internally is the most efficient to relax vesical spasm. For toning up the bladder and preventing inflammation, solutions of silver nitrate act better than the newer silver salts.

But little can be hoped for from electricity or vibratory massage to the cord or applied locally to or over the bladder. Relapses will occur because as yet we have not discovered a means for eradicating the primary cause of the disease, but it is well worth striving for if we are able to give even a little comfort to these poor sufferers who are traveling to certain death by a route so terrifying.

20 EAST FORTY-SIXTH STREET.

GONORRHOEAL JOINT DISEASE AND ITS TREATMENT.*

By P. W. NATHAN, M. D.,
New York.

Few, if any, familiar with the literature, doubt that the gonococcus may and often does enter the circulation and thus induce metastases in the joints, endocardium, and other organs. It has not alone been demonstrated in the joints of those suffering from infection, but it has also been found and cultivated from the blood. The fact that gonorrhoeal joint disease exists therefore needs no argument.

To judge, however, from the discussions and the papers which have recently appeared, there still appears to be a decided lack of unity in the ideas regarding the pathogenesis of the various forms of joint disease which follow in the train of gonorrhoeal infection. Those who have seen a large number of cases are familiar with a number of variations in the course, the symptoms, and the sequelæ of their cases; but as it happens, just these observers are the ones who seem to have been least able to make the subject precise and clear. For this reason, though we are all more or less familiar with gonorrhoeal joint infection, there still remain a number of important details which have not been explained.

To properly understand the gonorrhoeal joint diseases it is necessary to study the subject from two sides: viz., the bacteriological and the pathological sides. Only in this way can we learn to understand the peculiar characteristics of the condition and the reasons why in some cases it

is mild and evanescent, while in others it leads to marked and permanent disability.

The gonococcus, though usually mild in action, has nevertheless certain characteristics which have led to its being grouped with the so called septic bacteria, that is, the streptococcus, staphylococcus, pneumococcus, etc. It may, like the other microorganisms in this group, enter the circulation from a local focus and cause general infection; it may cause a mild toxæmia; and it not infrequently leads to metastases, *i. e.*, a pyæmia in the older sense. The gonococcus is said to be incapable of multiplication in the blood (septicæmia); but as there are cases on record in which the general constitutional reaction was severe enough to cause a fatal termination, and the fact that the cocci have been cultivated from the blood, seems to me to indicate that they do not, under all conditions, differ from the septic microorganism even in this respect.

As a general rule, however, the gonococcus remains only a short time in the circulation. On the other hand it is not far behind the other septic microorganisms in the tendency to form metastases. It is because the organism remains so short a time in the circulation that the general constitutional reaction is either only short or entirely absent, and thus the absence of definite fever in gonorrhoeal joint disease is readily explained.

The most common sites for gonococcal metastases are the joints, the bones, the synovial membranes, and the endocardium. With the exception of those mild and evanescent joint symptoms which are probably due to intoxication from the absorption of bacterial proteins (the gonococcus forms no toxines) the joints are directly invaded by the organisms; and, though the general infection is usually transitory, these joint infections are really local manifestations of a general infection. This fact must always be borne in mind when we are considering both the pathology and the treatment of this condition. It must be remembered that the condition is virtually a pyæmia (in the old sense); that besides the apparent foci there may be others not demonstrable (cryptic) which may be at fault in causing recurrence of the general infection with metastasis, not only in the organs previously involved, but in others; and the presence of a gonorrhoeal joint is in itself a focus from which renewed general infection may arise.

Compared to the serious septic joint infections gonorrhoeal joint infection is as a rule mild. But just as the other septic bacteria vary in their activity and often cause mild infections, so the gonococcus varies greatly in its virulence and may cause very severe joint conditions which lead to permanent disability. Moreover, just as I have shown to be the case with the other septic infections,¹ the results following gonorrhoeal infections depend a great deal upon their treatment during the acute stage.

The joint condition of gonorrhoeal infections depends mainly upon two factors: First, upon the structures involved; second, upon the number and virulence of the invading organisms. It

* Read before the Genitourinary Section of the New York Academy of Medicine, December 19, 1906.

¹ *American Journal of Medical Sciences*, 1906, January, April, December.

will be noticed that I place the number and virulence of the invading organisms second. I do this because I do not believe this factor to be nearly so important as the site of the focus. It is true, as most authors maintain, that the virulence of the condition depends upon the number and virulence of the organisms which invade the joint membranes; that, depending upon them, there will be a serous, seropurulent, purulent, or even a hæmorrhagic exudation. However, this is only true when the gonococci invade the joint membranes primarily. But the more malignant forms of gonorrhœal joint disease are those in which the primary focus is in the articular end of a bone, and these may cause only a simple serous exudation or none at all.

This is the key which unlocks the door to a proper understanding of the gonorrhœal joint infections. So soon as we appreciate that there

forms of infection, the bone focus is primary: Some years ago Sudek and following him Kienbok and others find that in the earliest stages of bone inflammation, from no matter what cause, there occurs a peculiar rarefaction of the bone, which can always be demonstrated in the radiograph. This rarefaction I have been able to demonstrate in all forms of infectious osteoarthritis at a very early stage. The rarefaction, or, as it has very inaptly been called, atrophy, always involves the part of the bone adjacent to the focus. It is eccentric and in no way resembles the so called atrophy of disuse. It never occurs in the synovial form of joint disease (arthritis), no matter how long it continues or what its cause.

This bone rarefaction appears a few days after the onset in gonorrhœal osteoarthritis. And as it can always be demonstrated in good radiographs and never appears in arthritis at any stage, we have here a ready means for early differential diagnosis, and can with more or less certainty make a prognosis. It can be said with certainty that when the rarefaction is absent after the lapse of a week or ten days that we are dealing with an arthritis and therefore never will have bone destruction, bone over growth, or bony ankylosis. This is true even when we have a purulent exudation in the joint³.

On the other hand, its presence is an absolutely sure sign that we are dealing with an osteoarthritis. In these cases we are sure to have bone destruction and more than likely to have permanent disability. It is not, therefore, mixed infection which causes the very serious forms of gonorrhœal joint disease with bone destruction, but the fact that we have a primary bone focus to deal with which leads to these serious consequences.

The pathology of gonorrhœal osteoarthritis exactly resembles that of all the other infectious osteoarthritis of the septic type. In the beginning there is either a focus with an area of rarefaction surrounding it, or there is a diffuse infiltration of the articular end of the bone. In either case, the infection may spread directly to the joint surface, when the cartilage degenerates in part or as a whole, and thus the infection invades the interior of the joint.

It is plain therefore that the joint involvement is secondary and not primary in osteoarthritis, as has been heretofore supposed. This is well illustrated by those cases of osteoarthritis in which the joint proper is never invaded at all. Aside from the reflex purely serous effusion the joint never becomes affected in these cases, and there may be complete resolution without loss of joint motion. I show you (Fig. 1) the radiograph of the knee of a patient who had gonorrhœal osteoarthritis in which the joint has remained free, and the child has recovered completely with good joint motion. The thickened periosteum and the rarefaction are all that remain of the previous disease.

The more virulent forms of gonorrhœal osteoarthritis are just like the other septic forms; the joint becomes invaded, and we have a very acute

I have tested this in a great many cases of infectious joint diseases, gonorrhœal and otherwise, and have never known it to fail.

are two specific forms of joint infection, gonorrhœal or otherwise, the whole difficulty of classifying the various forms of gonorrhœal joint disease disappears. In every infectious joint disease, the symptoms, the course, the sequelæ, and naturally the treatment depend upon the primary seat of the disease. The primary focus may be in the bones, or it may be in the synovia. In the one case we have an infectious osteoarthritis with characteristic symptoms, course, etc., in the other we have an arthritis with its own distinct characteristics.

Heretofore it was believed that bone involvement is a terminal stage in all joint disease. But this is never the case; for as I have shown elsewhere,² the cartilage seems to offer an impenetrable barrier between the joint and the bone, and therefore infection never travels from the interior of the joint to the articular end of the bones. Whenever the bones are involved at all the focus reaches them directly from the circulation, and there is a true metastasis.

With good radiographs it can be demonstrated that in gonorrhœal osteoarthritis as well as other

and violent joint reaction with purulent exudation.⁴

In all forms of infectious osteoarthritis, the periosteum adjacent to the affected part undergoes proliferation. The proliferated periosteum later becomes ossified, and thus are formed various forms of thickening, osteophytes, spicules, etc. These of course limit the joint motion more or less completely and permanently. They can always be seen in the radiograph. Fig. 2 is the radiograph of the hand of a patient who had gonorrhœal osteoarthritis some two months before the picture was taken, which illustrates both the bone rarefaction and the various forms of periosteal outgrowth.

If the infection invades the joint, the cartilage is more or less completely destroyed, and when there are foci in the adjacent bones (not an unusual occurrence) the joint is completely destroyed, with complete bony ankylosis as the final result. Fig. 3 is the radiograph of the hand of a patient with gonorrhœal osteoarthritis of the external carpal bones, showing the initial rarefaction and the fusion of these bones. Fig. 4 is the radiograph of a hand of a child who had gonorrhœal osteoarthritis showing the ankylosis of the carpus.

Gonorrhœal Arthritis.—Gonorrhœal arthritis varies in severity according to the number and virulence of the invading organisms. The condition varies from the mildest cases to those with much exudation, pararticular infiltration and serious joint disability. The pathology is that of all the other septic arthritides, with the exception that in the severer cases there is more apt to be pararticular infiltration. Here as elsewhere the gonococcus shows a disposition to travel along the lymph channels and thus invade the surrounding tissues.

The process in the joint is proliferative in the milder cases, destructive in the severer ones. Following the subsidence of the acute inflammation, there is the same tendency to form adhesions, contraction of the joint appendages and surrounding muscles which we meet with in the other forms of joint infection.

Diagnosis.—It is often impossible to say positively of an infection or inflammation of a joint what organism has caused it. A number of the organisms of the septic type have been found in the bones and other organs years after the general or initial infection had disappeared. They have not alone been found, but they have been known to cause a recurrence of the acute condition.

Though the gonococcus nearly always causes quite a characteristic joint condition, it must be remembered that the very characteristic symptoms are sometimes absent; so that without the demonstration of the microbe itself to aid us, we can only make a tentative diagnosis.

Marked joint swelling with only a very slight rise in temperature when there is a demonstrable gonorrhœa elsewhere are very strongly suspicious. When to these are added sudden onset,

intense pain and paraarticular swelling we may consider the diagnosis positive. From the experience of most observers it seems fairly safe to consider any joint infection which comes on during a gonorrhœa as gonorrhœal, when there is no definite rise in temperature and when it is accompanied by intense pain.

The diagnosis during the acute stage is therefore not difficult. What has perplexed most observers is the diagnosis of the cases called chronic. As a matter of fact, there are no chronic gonorrhœal joint infections. The gonococcus causes either an acute inflammation or it is en-



FIG. 2

tirely inert. There are, no doubt, recurrent forms; but these are not chronic; they are analogous to the cases of general reinfection from an old focus in other forms of infection, and analogous to the recurrent gonorrhœas of the urethra. The process is not continuous with gradual progression and destruction.

What has been called chronic gonorrhœal rheumatism is not the disease, but the result of the disease. A man has an acute attack of gonorrhœal joint infection; the acute symptoms subside, the pain disappears, and there remains nothing but a certain amount of stiffness. He has no pain when he is at rest; but as soon as he proceeds to use the affected extremity he again has pain and increased stiffness. If he tries to overcome the immobility by use, he soon finds that

⁴ This does not necessarily mean that there will be long continued suppuration, or that the effusion must be evacuated in order to effect a cure. In nearly all cases in the gonorrhœal forms, at any rate, the effusion is resorbed once when purulent

the joint swells and becomes sensitive. With rest these symptoms subside, only to recur when he again begins to use the limb. This cycle is repeated for a varying number of times until the affected joint becomes permanently stiff, no effort is made to move it, and though the pain and swelling more or less completely disappear, the joint is permanently disabled. As these joints are usually stiff in a deformed position the least overexertion causes pain and discomfort. Such an individual is said to have chronic gonorrhoeal rheumatism. He has deformity and either adhesions or bony change within the joint

symptoms. Many more analogous cases could be cited.

From what has been said it is plain the diagnosis of gonorrhoeal joint disease must comprise more than the simple fact that there has been a joint infection. We must consider a number of factors: 1. Have we an active process? 2. If the process is active, is it really gonorrhoeal? 3. Being gonorrhoeal, is it an osteoarthritis or an arthritis? 4. When the active process has subsided, have we bone changes or simply adhesions?

Experience has taught us that all those cases

as the result of his previous gonorrhoeal infection, but he has no active disease; and if the truth were known his disability is as much due to lack of proper treatment as it is to the morbid condition.

I show you the cast of a foot which everyone will recognize is what we ordinarily call a flat foot. This flat foot was acquired after an attack of gonorrhoeal arthritis. The patient had a typical attack of acute joint inflammation during the course of a gonorrhoea. The treatment was that usually pursued in these cases; the man was permitted to walk as soon as the very acute symptoms had subsided, and though his foot was normal in shape when he began to walk, the arch has gradually but surely come down until it assumed the present position. At this time he had no signs of active inflammation; he had no pain when his foot was at rest, only when he resumed his work and was compelled to be on his feet did he have any trouble. His symptoms were those of an ordinary flat foot. Now, though there were absolutely no signs of gonorrhoea anywhere, and though he had no swelling, he was said to be suffering from chronic gonorrhoeal rheumatism. I maintain that such an individual has nothing more than deformity and adhesions following his joint infection. This is borne out by the treatment and subsequent course in the case cited. This man had his foot thoroughly stretched and the adhesions broken up under an anæsthetic, and the foot was immobilized in the usual position. He was later given a Whitman foot plate, and within three weeks he resumed his usual occupation, which he has since pursued without pain or discomfort. Had he still a gonorrhoeal focus within the joint, such treatment certainly would have caused a recurrence with violent

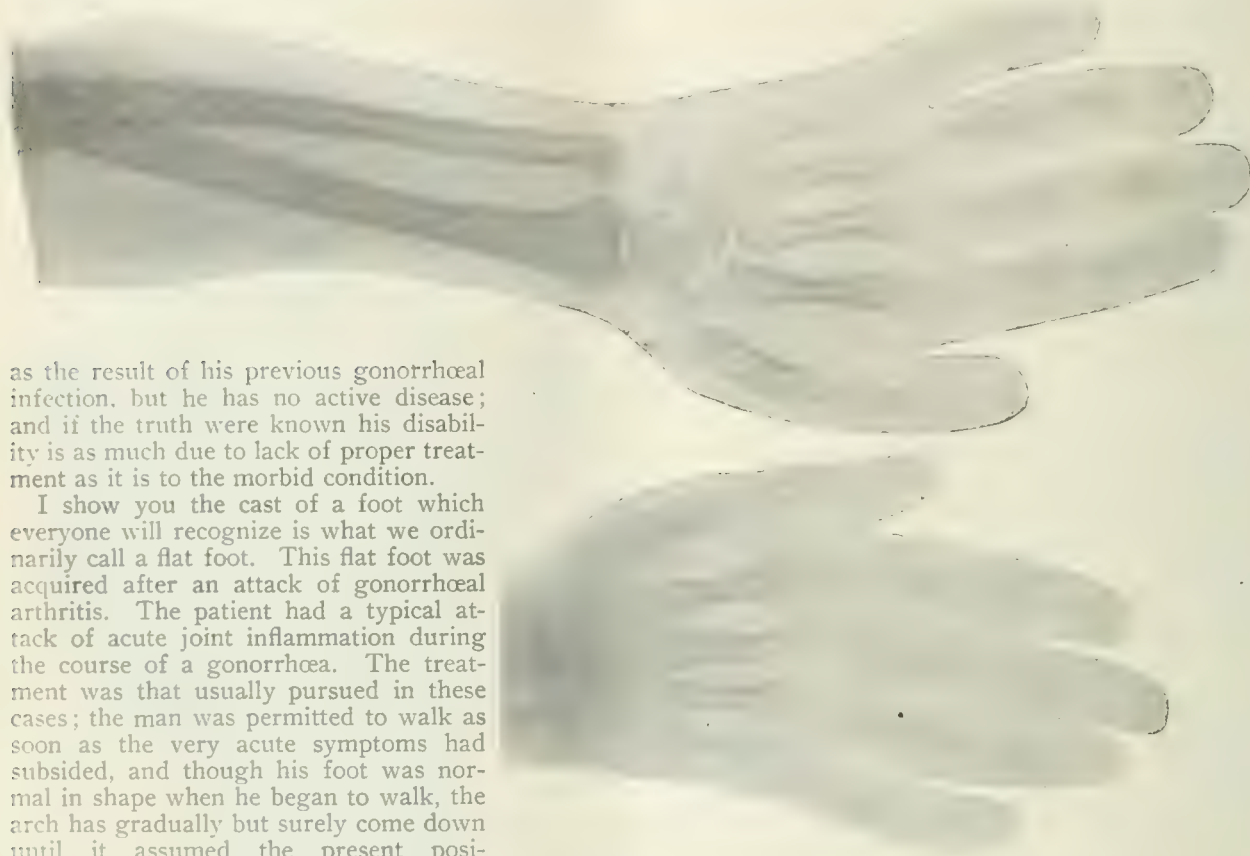


FIG. 3.

of acute joint disease which come on suddenly with intense pain during the course of a gonorrhoea, are gonorrhoeal infections. In these cases the demonstration of the gonococcus in the joints is hardly necessary. All those mild cases, with less characteristic symptoms, which come on during the course of a gonorrhoea are probably, but not positively, of gonorrhoeal origin.

During the acute stage when there is much swelling and paraarticular infiltration it is impossible to say positively whether we are dealing with an arthritis or an osteoarthritis, without a good radiograph. With a good radiograph it is always possible to show the bone rarefaction of osteoarthritis at the end of the first week. If it is absent at that time we may be sure that we have an arthritis and therefore never will have bone changes. After the subsidence of the acute attack it is nearly always possible to make out bone changes by palpation; if this is not possible

the radiograph definitely shows them in osteoarthritis.

Complete ankylosis, though it may occur when the adhesions are very dense, is rare in arthritis, but very common in osteoarthritis.

Treatment.—These diagnostic points are of great importance as a guide to treatment. There can be no question that it is not only important, but absolutely necessary to eliminate the primary focus of infection if we are to be certain there will be no recurrence of the general infection with renewed metastasis. It must be remembered that the joint is simply a secondary

yond the joint above and below. The bandage should fit accurately at all times and must therefore be reapplied as the swelling recedes. It is remarkable how quickly the intense pain disappears when this course is pursued, and I have seen patients who had previously screamed with pain even when under the influence of morphine immediately relieved and perfectly comfortable as soon as a well fitting plaster bandage was applied.

As soon as the very acute symptoms have subsided it is necessary to make a differential diagnosis between arthritis and osteoarthritis. This



FIG. 1.

focus, and the condition, though milder, is analogous to a pyæmia. Every patient with a gonorrhœal joint infection, no matter how mild, should be put at rest in bed. All sources of infection which can be locally treated should receive attention.

The affected joint should be immobilized in the best possible position for future function. It is because so few regard this as important that there is often permanent joint disability following the infections. A very important feature is the length of time these joints should be immobilized; and this varies according to the particular condition in each case.

During the early very acute stage the limb is best treated by the application of a well fitting plaster of Paris bandage which reaches well be-

is important because the treatment of the two conditions must differ if we are to expect good results. In osteoarthritis we have the rarefaction of the bones, periosteal thickening, overgrowth, and the tendency to ankylosis to deal with. As long continued immobilization favors ankylosis, the fixed bandage must not be retained too long. On the other hand, because of the rarefaction with its consequent weakening of bone, function, or weight bearing, nearly always cause distortion and irritation. It is therefore necessary to substitute removable splints, which can be made of plaster bandages, for the fixed dressing. Passive motion in a gradually increasing arc should now be practised. The splinting and passive motion should be continued for a very long time, weeks or even months, depend-

ing upon the severity of the case. Such treatment faithfully carried out nearly always succeeds.

Have we an arthritis to deal with the plan of treatment is somewhat different. Here we have the danger of adhesions and their subsequent contraction to deal with. It seems to take a considerable length of time for the repair of the joint membranes, even in the milder cases; early use irritates and inflames these weakened structures and increases the tendency to adhesion and contractures. For this reason the joint should be immobilized in the extended position (the foot at right angles) for a considerable time. The time varies in each case, and passive motion and functional use should only begin after all signs of inflammation and irritation have disappeared.

The treatment of deformity after gonorrhoeal infection brings us to a discussion of the so called chronic gonorrhoeal rheumatism. As these cases have been considered chronic infections numerous internal and external remedies have been suggested. Nearly all these are purely empirical, and the same and equally as efficacious as those employed for the cure of the so called rheumatoid conditions. Only one, that proposed by Dr. Fuller, has at least the merit of being founded upon pathological principles. With the idea that there is usually a gonorrhoeal focus present in the cases of long standing, Dr. Fuller has recommended and practised drainage of the seminal vesicles when he found them diseased.

In some, not in all, of the cases was there some benefit derived from this procedure. There can be no doubt that the removal of a gonorrhoeal focus is always indicated. Here, however, the question is, Will drainage of the vesicles positively remove all traces of a joint infection? As has been said, the majority of cases of so called chronic gonorrhoeal rheumatism are not active processes; they simply represent the result of the inflammation and are really analogous to the contracture which remain after a burn or other injury of the skin. For this reason the removal of a focus when present will have absolutely no influence on the condition. On the other hand, the focus, if there is one, may cause recurrence, general infection with renewed acute joint infection; and the removal of the focus in the vesicle, if it is the only one present, may lead to a cessation of the attacks. But it will no more remove adhesions or bony ankylosis than the use of remedies for burns will remove the contractures which follow them.

The same applies to a serum which has been recommended. Bier's hyperæmia, baking, etc., may have some influence upon an active process, but all such methods are useless when it comes to correcting deformity, contractures, and the mobilization of a stiff joint. Electricity of all kinds is of doubtful value even in the acute cases; where improvement after its use in gonorrhoeal disease is reported, there is, to say nothing worse, a mistake in the diagnosis, or the patient would have done as well without.

The first essential in the treatment of the condition under discussion is proper diagnosis. It must be accurately determined whether the de-

formity is due to synovial or osseous lesions. After the elimination of all appreciable gonococcal foci elsewhere, active treatment of the joint condition may begin. This is exactly along the lines of the treatment of joint deformation generally. The deformity and disability following gonorrhoeal arthritis can nearly always be cured. Of course, in cases where the initial inflammation was very severe and the joint membranes have been more or less completely destroyed the adhesions are very dense; these sometimes are refractory, but even they can be benefited. In the ordinary cases breaking up of the adhesions under an anæsthetic, immobilizing the joint in the extended position, and following this by passive motion and gradual resumption of function, will nearly always prove successful. Cases of so called flat foot should be treated just like any other flat foot; thorough stretching, immobilization for two or three weeks, Whitman flat foot plate applied, passive motion, and exercise.

When we have bony change to deal with the treatment is not nearly so hopeful. Single spurs can of course be removed; but bony ankylosis requires extensive open operation with muscular interposition which is followed by doubtful results. Operations to place the limb in better position for function are indicated. This can in nearly all cases be done by subcutaneous osteotomy. In one case of deformity following gonorrhoeal osteoarthritis of the hip with flexion, adduction, deformity, and over one inch actual shortening, the condition was very much improved by taking a wedge from immediately below the trochanter as recommended by Whitman for old fractures of neck of the femur, coxa vara, etc. Flat foot, the result of osteoarthritis, when taken in hand before the new formed bone has become too dense, can often be treated by stretching. Bony union recurs of course, but the foot remains in good position if a plate is used and the function is good. When there is complete ankylosis nothing but the removal of a wedge will give good position.

I have never seen recurrence of the acute condition as the result of any of these procedures. I do not, however, deny this possibility; it is therefore always better to eliminate any existing disease in the genital organs before the joints are operated on.

In conclusion I would say that proper mechanical or operative treatment will nearly always succeed when all other methods have failed to give relief. Even in the more acute cases I rarely find it necessary to resort to narcotics.

We may summarize the facts brought out in this paper as follows:

Gonorrhoeal joint disease, with the exception of the mild evanescent cases due to toxæmia, is really a pyæmic condition.

The gonococcus directly invades the affected tissues and the foci are located either in the synovial membranes (arthritis), or they are in the articular ends of the bones (osteoarthritis). In osteoarthritis the bone focus is always primary and is never caused by extension of the inflammation from the interior of the joint. Hence a gonorrhoeal arthritis remains an arthritis and

never involves the bones, no matter how long it exists or what its intensity.

Gonorrhœal joint disease may be recurrent but never chronic. The cases which have been called chronic are those in which the initial acute inflammation has left behind bands of adhesion or other structural change in the synovial membrane in arthritis, and bone outgrowths or ankylosis in osteoarthritis. These changes unless treated mechanically or by operation are permanent.

The treatment during the acute stage must be on general lines, and must depend upon existing conditions. The treatment of deformity must be based upon the same principles which governs the treatment of all deformities.

Finally, I feel that I must impress upon you the fact that nearly all the cases of gonorrhœal joint disease will get well without disability if the patient is properly treated during the acute stage. It lies with the general practitioner and the genitourinary surgeon to prevent the serious, often life long disabilities, which sometimes follow in the train of a gonorrhœal joint infection.

107 EAST SEVENTY-NINTH STREET.

Therapeutical Notes.

A Large Goître Reduced by Thyreiodine.—Rivière (*Lyon médical*, February 3, 1907) presented a case of a man, fifty-seven years of age, who entered Jaboulay's service for a voluminous goître of four years' duration. It involved both lobes and extended down over the sternum. Compression symptoms were present and surgical intervention was apparently necessary, especially as it was feared that neoplastic degeneration had begun. He was tentatively given two tablets daily of thyreiodine of 0.5 gramme per day. Under this treatment the tumor progressively diminished until it had lost three fourths of its volume in fifteen days, when the remedy was stopped. Two months later the improvement was still maintained.

Potassium Chlorate in Eye Affections.—Koster, of Leyden (*Bulletin médical, Bulletin général de thérapeutique*, January 30, 1907), advocates the use of potassium chlorate in the treatment of diseases of the cornea and of the conjunctiva. Three per cent. solutions may be freely used in these cases, either by instillation, lotion, or as a local bath. To the healthy conjunctiva this causes no pain, but to the inflamed conjunctiva it causes a light burning sensation. When finely powdered, potassium chlorate only causes a moderate pain and has no injurious effect. It can be applied in all forms of conjunctivitis, but especially in the chronic catarrhal form; also where there are phlyctenulæ. A case of superficial marginal keratitis was cured completely in two weeks. This agent acts as a disinfectant and as an astringent.

Hydrogen Peroxide for Impetigo (Eczema Impetiginoides).—Carrière (*Journal de médecine de Paris*, January 13, 1907) reports good results from the following treatment of impetigo of the scalp in children. The crusts are first to be cleaned off by means of a potato starch poultice (boricated), or simply compresses of salolated gauze, moistened with decoction of walnut leaves. This is to be covered with rubber cloth, and renewed three times a day, and also just before going to bed. When the crusts are removed the microbes of impetigo are attacked by hydrogen peroxide (10 volume) applied on gauze and covered with rubber; this dressing is renewed each twenty-four hours. Under this treatment sixty per cent. of the cases recover in less than five days. Recovery may be hastened by disinfection of the alimentary canal by the administration of fractional doses of calomel.

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Treatment of Acne.—The *Journal de médecine de Paris* (January 13, 1907) recommends a ten per cent. ointment of naphthol to be kept on for half an hour to one hour, after which time it is removed and the surface washed with soap and water. On the next day a slight reaction or desquamation of the affected part is to be observed. The application is then to be repeated, and in the course of eight to fifteen days the desquamation is complete. No cicatrix is produced. If there should be too much irritation of the skin, an emollient can be applied. In obstinate cases ten per cent. of camphor may be added to the naphthol, but in this case the application should only be made for a quarter of an hour. Another formula is:

R	Resorcin,	.....	2.5 parts;
	Zinc oxide,	.....	5 parts;
	Starch,	.....	5 parts;
	Petrolatum,	.....	12.5 parts.

M.

This ointment is allowed to remain upon the affected part for a day and a night, at the end of which time it is removed with the aid of oil.

Therapeutical Use of the Hypophysis Bovis.—Renon and Delille reported to the Société de thérapeutique (*Revue de thérapeutique médico-chirurgicale*, February 1, 1907) the results of the administration of powdered hypophysis of beef cattle in various clinical conditions. In Basedow's disease the hypophytic medication (0.10 gramme, morning and evening) moderates all the symptoms, which, however, reappear if the treatment is suspended. The tachycardia gradually or slowly yields, and the goître is slightly reduced or remains stationary. In chronic pulmonary tuberculosis favorable results were noted, which are explained by the tuberculous lesions of the hypophysis found in these patients. In order to have decided improvement, it is necessary to give arsenic and the recalcification treatment in addition to the opotherapy. In two cases of typhoid fever the disease ran a brief course; in one of typhoid myocarditis, a cure resulted. These cases are merely mentioned without deducing any conclusions. In reviewing broadly the effects of this treatment, it would appear that all the symptoms which disappear under opotherapy are those which are caused by hypophytic insufficiency. It will be useful to investigate the effects of the two parts of the gland. One part (the posterior lobe), by its marked action in the slowing of the palpitations of the heart and reducing the amplitude of its force, one part of the hypophysis may be a valuable cardiac medicament. If the asserted antitoxic effect of the gland is confirmed by further experience, then opotherapy may be useful in the treatment of infectious diseases. The clinical effects usually observed all slowing of the pulse elevation of arterial tension, increase of appetite, and diminution of insomnia.

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NEW YORK, SATURDAY, MARCH 16, 1907.

THE REGISTRATION OF NURSES IN PENN-
SYLVANIA.

A body known as the Pennsylvania State Committee on Nursing (of what organization it is a committee we know not) has issued a circular, dated January 30th, in which it opposes a legislative bill providing for the registration of nurses in the State of Pennsylvania. The circular sets forth the contention that registration is not only unnecessary, but positively harmful, as has been shown in the experience of the States of New York and New Jersey. The tendency of such a law, it says, is to lead the average nurse to assume too much, to lessen her usefulness as a nurse and to jeopardize the life of her patient. Nurses, says the circular, are often overbearing and dictatorial and require too much attention and waiting upon. If a law for their registration is enacted, it goes on to say, "it will be only a little while before doctors will refuse to employ such nurses and will turn to those of less pretensions, but of greater usefulness."

In the nurses' demand for the enactment of a registration law the committee discerns an intent on their part to effect the purposes of a trade union, to secure for themselves a monopoly and to maintain their rates of remuneration at a figure which families of moderate means cannot afford to pay. "Arguments may be brought forward," says the circular, "to justify trades unions in the commercial world, but the most case hardened and reckless agitator and striker would shrink from trading in the blood and sufferings of humanity." Instances

are then cited to show the prevailing tendency to overeducate nurses, to give them a medical rather than a nursing education; and the proneness of certain nurses to try to supplant the physician is illustrated by the following quotation from an article by Mrs. E. G. Fenwick, published in the *Outlook* for January 6, 1906: "To advance the higher evolution of the trained nurse, the domination of the doctor and the man must cease when he leaves the sick room."

There have been many foolish utterances published by persons professing to represent the profession of nursing, and we all know that a few individual nurses have made themselves highly objectionable. We do not think, however, that these things should be allowed to obstruct the nurses of Pennsylvania in their honorable ambition for registration. There are black sheep in all callings, and, unfortunately, education does not endow fools with wisdom. As to the maintenance of nurses' wages above what the poor are able to pay, the law of supply and demand may be relied upon to bring about a satisfactory condition ultimately, registration or no registration.

ETHYL CHLORIDE AS AN ANÆSTHETIC.

The selection of a satisfactory anæsthetic for short operations is often troublesome. Nitrous oxide gas is often not lasting enough in its effects and the apparatus necessary for its administration is cumbersome. The effects of ether, on the other hand, are too lasting and often too disagreeable. Ethyl chloride induces anæsthesia pleasantly and rapidly; the recovery of consciousness on the withdrawal of the anæsthetic is prompt; and the amount of nausea and vomiting induced is small. On the other hand, muscular relaxation is often difficult to obtain with ethyl chloride, and the death rate is somewhat higher than that from nitrous oxide—according to some observers, one death in 3,000 administrations.

Embley (*Proceedings of the Royal Society*, lxxviii, No. B. 527) presents a study of the pharmacology of ethyl chloride in order to assist those concerned in its administration and to save a valuable anæsthetic from the suspicion of being unduly dangerous. Like chloroform, ethyl chloride paralyzes the heart muscle; but it requires nineteen times as much ethyl chloride vapor as chloroform vapor to produce similar results. Like chloroform, ethyl chloride relaxes the arterioles, but the amount required to do it is greater than that of chloroform. Ethyl chloride stimulates the central vasomotor mechanism. When the vapor is present in the air in the proportion of ten per cent., vagus inhibition of the heart readily occurs, resulting in sudden fall of pressure. When the amount of vapor in the in-

spired air reaches thirty per cent., the sudden fall of pressure is also due to weakening of the cardiac and arterial musculature. The cardiac inhibition due to ethyl chloride is not so serious as that from chloroform, however, because it appears before the spontaneous excitability of the heart is much depressed. It does not seem possible to arrest the sound heart of a dog permanently under ethyl chloride narcosis by vagus inhibition.

It requires nineteen times as much ethyl chloride as chloroform to produce a given degree of cardiac depression, while it requires only four times as much to produce cardiac arrest by vagus stimulation; hence inhibition sets in with relative rapidity. Herein lies the comparative safety of ethyl chloride. The cardiac inhibition arises from central stimulation; it is not reflex. There is no evidence of paralysis of vagus endings. In ethyl chloride narcosis the integrity of the respiratory mechanism is dependent upon the maintenance of blood pressure. In the administration of ethyl chloride vapor for anæsthetic purposes the rational method would be to employ a gasometer and to administer less than ten per cent. of the anæsthetic. The solution should not be poured into the instrument between the face piece and the bag, but should be allowed to mingle with the air by being introduced at the end of the bag.

A FAULTY DEFINITION OF SUDDEN DEATH.

We fancy there is very little likelihood of any considerable misapprehension of the meaning of the expression sudden death. One individual, however, has thought it advisable to give a definition of it, and another has chosen to quote the definition apropos of certain studies of the causes of sudden death occurring in children in the course of infectious diseases. In a recent Paris thesis the subject of such deaths has been treated of *in extenso* by Dr. Maurice Brelet, and he recurs to it in the *Gazette médicale de Nantes* for February 9th. At the outset he quotes Tourdes's definition of sudden death as follows: "The sudden or very speedy cessation of life in consequence of internal or pathological causes, apart from all mechanical or poisonous agency, occurring unexpectedly in a person who appeared to be in good health or whose diseased condition did not manifestly presage a fatal issue." As thus expressed, Tourdes's definition of sudden death seems to be absurd.

In the first place, the implied distinction between "sudden" and "very speedy" seems forced. Why, too, should "internal or pathological causes" be recognized as occasioning sudden death, to the exclusion of injuries and poisons, and why may we not properly speak of the sudden death of a person whose diseased condition did "manifestly presage a fatal issue," even if the lethal termination was re-

garded as probably more or less remote? Surely a man may die at once from a gunshot wound or from swallowing hydrocyanic acid, and such a death may be unexpected in the case of the wound or in that of the poisoning—unexpected, that is to say, by all but the victim in suicidal cases, and even by him save for a brief time.

Not only are stilted definitions of little or no use; they often serve merely to obscure a situation. Sudden death is death that occurs suddenly, without premonitory indications extending over a considerable period, no matter what the cause of death may be, and almost without reference to the previous condition of the decedent. In certain wasting diseases we expect death, but we look for the gradual occurrence of the signs that announce the fatal termination; if death takes place without this gradation in the failure of the vital powers, it is certainly sudden.

CHLORAL HYDRATE IN SCARLET FEVER.

In 1896 Dr. James C. Wilson, of Philadelphia, advocated routine doses of chloral hydrate in the treatment of scarlet fever, maintaining that increased diuresis, improvement of the nervous symptoms, relief of the itching, and increased comfort for the patient followed its use. Royer (*Therapeutic Gazette*, January 15th) reports the results of the treatment in 800 cases in the Municipal Hospital of Philadelphia, and contrasts these results with those obtained in the same hospital in 756 cases treated with the usual remedies. The drug was administered in sufficient doses to produce light somnolence, and these doses were continued for five or six days after the subsidence of the fever. Three patients died in the series of 800 cases treated with chloral (0.37 per cent.), and four died in the series of 756 cases treated with the usual remedies (0.52 per cent.). During the febrile period no material difference was found in the number of patients who presented nephritis in the two groups of cases. In the post-febrile period, on the other hand, 4.25 per cent. of the patients treated with routine doses of chloral had albuminuria, 3.50 per cent. had transient nephritis, and two per cent. had severe nephritis. Among the patients treated without chloral 5.68 per cent. had albuminuria, 5.29 per cent. had transient nephritis, and 2.38 per cent. had severe nephritis.

Royer thinks that Dr. Wilson's statements as to the beneficent influence of chloral hydrate on the symptoms presented by scarlet fever patients are, on the whole, correct. He does not find that the increase of diuresis noticed by Wilson is any more marked after the administration of chloral than after that of definite quantities of water at stated intervals. The drug does not appear to exert any depressing effect upon the circulation. It ameliorates

the nervous symptoms better than any remedy so far suggested, and it does allay the annoying itching. The routine administration of the drug appears to lessen the tendency to postfebrile nephritis. It would have added to the value of Dr. Royer's paper, we think, if he had been more specific in regard to the doses. The direction to administer enough chloral "to produce light somnolence" is too indefinite. A statement of the doses for patients of different ages would have been more satisfactory.

INTUSSUSCEPTION EXTRAORDINARY.

The annals of medicine include many a story of some extraordinary foreign body forced into the rectum. That form of recreation, as we all know, is apt to be productive of serious results. Among the consequences, if the foreign object is of suitable size and shape, there may be intussusception, as seems to have occurred in a case reported by Mr. Harold Balme in the January number of the *China Medical Missionary Journal*. A Chinese petty official, about fifty years old, went on an office seeking trip from Shensi to Tai-yuan-fu, where he indulged in debauchery at an inn for a considerable period—smoking opium and drinking spirits most of the time. One morning his friends found him very seriously ill, suffering as they supposed with dysentery, for he had a mucous and bloody discharge from the rectum and complained of considerable abdominal pain. He subsequently said that he had "swallowed a glass bottle."

On examination under anæsthesia, a round object of glass was found in the rectum. It appeared to be tubular and to be acting as an intussusciens, for a portion of the sigmoid flexure was prolapsed into it. As the nature of the object was not known, it was thought prudent not to attempt its forcible extraction; therefore it was broken up with a bone forceps and removed piecemeal, the fingers protecting the rectal wall from injury by the fragments. The intussusception was then reduced without difficulty. The object proved to be one of the thick glass shades said to be commonly used on opium lamps. We can well understand that, as the author remarks, the work of removing it was tedious. He adds that the operation must have been either too severe or performed too late, for the man died in the course of a few hours, though he had seemed to be in fairly good condition when he was taken from the table.

Even a drunken Chinese office seeker, it seems, is not necessarily lost to all sense of shame; it was undoubtedly with the purpose of concealing his beastliness that this wretch told his story of having "swallowed a glass bottle." Except persons who

are actually insane—and perhaps some lunatics are no exception—individuals who seek for a morbid gratification by inserting foreign bodies into the urethra, the vagina, or the rectum are generally slow to call for assistance and eager to palliate their foolish act by some untruthful statement. Though the lie may not often be so palpably absurd as the Chinaman's yarn about having swallowed a bottle, it is almost always discerned, we imagine. It should not, however, add to our contempt for the sufferer, but rather be taken as a mitigation of the act.

PECULIAR IDEAS ABOUT SMOKING.

Some baseless ideas concerning tobacco smoking are prevalent among the laity, and we fear that Dr. F. Wikulill (*Wiener medicinische Presse*, December 23, 1906; *Semaine médicale*, February 20, 1907) has recently added to them. He is probably quite correct in saying that the sickness of the novice in smoking is not due to nicotine, but to certain products of combustion, such as pyridine, cresol, carbon oxide, etc. If it is objected to the latter part of this statement that the sickness in question does not follow the smoking of sweet fern and the other fore-runners of the real "weed," we must admit that it is something peculiar to tobacco, though not nicotine, that causes the trouble. It is probably the extractives that are drawn into the mouth and swallowed.

It is Wikulill's opinion that the smoking of cigars, as well especially as the smoking of cigarettes, is more injurious than the smoking of a pipe, but we do not think he has found the real reason of the fact. He thinks he sees it in the practice of inhaling the smoke, which is supposed to be much more general with smokers of cigars and cigarettes than with smokers of pipes. He asserts that the inhaled smoke penetrates to the pulmonary alveoli, so that the toxic products pass directly into the blood. We have no hesitation in saying that this assertion is erroneous. One would have to inhale the smoke with almost every inspiration to produce the alleged result, and we have never known a smoker to do that. Several years ago Dr. Glasgow, of St. Louis, in an article published in the *New York Medical Journal*, showed the probability that smoke as ordinarily inhaled never passed beyond the larger air passages and seldom much beyond the larynx. Moreover, devotees of the pipe do not altogether refrain from inhaling. The diversity of results, we think, must be ascribed to differences in the quality of the tobacco.

Fastidious pipe smokers like to provide themselves with an assortment of pipes and use each one in turn. With such men this course is not entirely a matter of taste; they think that they find in it a safeguard

against the undue ingestion of nutritious products. But Wikulill insists that the man whose one pipe is never out of his mouth is safer than he who uses several pipes in succession. In his opinion, desiccation of the empyreumatic material drawn into the stem causes it to become more poisonous, but we cannot see that he gives any good reason for such an idea.

THE PASTEURIZATION PANACEA.

The proceedings of the Section in Public Health of the New York Academy of Medicine, at the meeting held on Tuesday evening, a report of which will be found in this issue, ought to make plain to those who are clamoring for the wholesale compulsory pasteurization of the milk supplied to New York the fact that the physicians of New York are opposed to the pasteurization project as a panacea. Nobody denies the occasional usefulness of pasteurization, properly carried out, but it is very evident that the blind acceptance of the scheme in favor of which some of the newspapers have exerted themselves would be fraught with great evils. We would particularly call attention to the remarks made by Dr. Roby, of Rochester, to the effect that since good raw milk had been furnished to the poor of that city the infant mortality had decreased.

News Items

NEW YORK CITY AND STATE.

Changes of Address.—Dr. Roger Herbert Dennett, from Adamsville, R. I., to 601 West One Hundred and Thirty-seventh Street, New York.

The Geneva, N. Y., Medical Society.—At a meeting of this society, held on Thursday evening, March 7th, Dr G. B. Young read a paper on Emergencies in Medicine.

The New York Neurological Society and the Philadelphia Neurological Society will hold a joint meeting, at the New York Academy of Medicine, on Saturday evening, March 16th.

The Medical Society of the County of Richmond.—The programme for a meeting of this society, held on Wednesday evening, March 13th, included a paper on Opsonin, by Dr. C. E. Bolduan, of Brooklyn.

The Buffalo Medical Clinic.—The monthly meeting of this society was held at the residence of Dr. M. Axford, on Thursday evening, March 7th. The paper of the evening entitled *Infantile Eclampsia*, was read by Dr. Thomas Dwyer, and was discussed by Dr. John R. Gray, Dr. H. C. Rooth, Dr. H. K. De Groat, Dr. G. A. Sloan, and Dr. W. I. Thornton.

The Medical Society of the County of Kings.—The following programme was prepared for a meeting of the *Section in Pediatrics*, held on Friday evening, March 15th: A Brief Study of Anæmia in Children, by Dr. Eli Long, of New York; Pseudoleucæmic Anæmia of Infancy, by Dr. Archibald D. Smith; Early Diagnosis of Whooping Cough by Means of the Blood, by Dr. W. H. Woglom.

The Buffalo Academy of Medicine.—The following programme was arranged for a meeting of the *Section in Medicine*, held on Tuesday evening, March 12th: (a) Pleural Effusions and a Safe and Easy Means of Drainage in Purulent Cases without Resection of Rib, by Dr. Albert J. Colton; (b) Concerning Chylothorax, by Dr. Dewitt H. Sherman; (c) Some Questions Involved in Sending a Patient Away from Home, by Dr. John Pryor.

The Medical Society of the Borough of the Bronx.—The following programme was arranged for a meeting of this society, held on Wednesday, March 13th: Report of Cases, Histories, etc.; Symposium on Fractures: Pathology and Diagnosis of Fractures, by Dr. I. M. Kohn; Demonstration of X Ray Plates and Photographs of Fractures, by Dr. A. C. Geyser; Treatment of Fractures, by Dr. John J. McGrath; Discussion to be opened by Dr. Henry Roth.

The Medical Society of the County of Albany.—At a meeting of this society, held on Wednesday evening, March 13th, a feature of the evening was an exhibition of the Harvard Medical School series of preparations of smallpox lesions, loaned by Dr. W. T. Councilman, of Boston. Dr. Joseph B. Craig, health officer, read a paper on Municipal Problems of Quarantine of Smallpox, and Dr. F. C. Curtis and Dr. H. D. Pease gave a symposium on smallpox illustrated with lantern slides.

The Medical Association of the Greater City of New York.—A meeting of this association will be held at the Academy of Medicine at 8.30 p. m., on Monday, March 18th. The following programme will be presented: Weak Foot, by Dr. Carl R. Keppler; Results in the Treatment of Congenital Dislocation of the Hip, by Dr. Dexter D. Ashley; Affections of the Sacroiliac Joints, by Dr. Henry Ling Taylor; Posture as an Aid in the Diagnosis of Bone Lesions, Before the Occurrence of Deformity (lantern illustrations), by Dr. Reginald H. Sayre; general discussion.

Personal.—Dr. H. M. Archer, of New York, has been appointed by the fire commissioner, an honorary medical officer of the fire department, with the rank of battalion chief, without salary. Dr. Archer, it is said, keeps a carriage and an automobile to run in response to all alarms of fires. There is a fire alarm signal in his bedroom. He has been giving medical attendance to the firemen whenever needed and it was in appreciation of his enthusiasm for the firemen that the commissioner acted on the report of the fire chief.

The New York Pathological Society.—The following programme was arranged for a meeting of this society, held on Wednesday evening, March 13th: Report of a Case of Blastomycosis, by Dr. George E. Brewer; Experimental Blastomycotic Lesions, by Dr. Hans Zinsser; An Unusual Case of Generalized Tumor of the Lymphnodes, by Dr. Thomas Flournoy; Papers: An Experimental Study of Caisson Disease, by Dr. Harlow Brooks; Pathological Investigations, by Dr. Mary Dixon Jones; The Influence of Tissues. Cholesterin and Cholesterin Esters Upon the Production of Toxic Components of *Bacillus Tetani*, by Dr. Hideyo Noguchi.

The Clinical Society of the New York Post Graduate Medical School and Hospital.—The following programme was presented at a meeting of this society, held on Friday, March 15th: Presentation of Patients; Presentation of Specimens, Instrument, and Apparatus; Reports of Cases; Two Cases of Aneurysm, by Professor William H. Porter; Papers of the evening: Modern Obstetric Technique, by Professor Brodhead; Care of Mother and Baby after Confinement, by Professor DeForrest; The Obstetric Hemorrhages and their Treatment, by Dr. Knipe. Discussion by Professor Waldo, Professor Brothers, and Professor Polak, and Dr. Sweeney, Dr. Ronginsky, and Dr. Pinkham.

The Williamsburgh Medical Society, of Brooklyn, N. Y.—The following programme was arranged for a meeting of this society, held on Monday evening, March 11th: Presentation of Cases and Specimens: Case of Ectopic Gestation, by Dr. William E. Butler; (a) Multilocular Cystic Ovary, (b) Hypertrophic Appendix Complicating Hydro-salpinx, by Dr. George I. Miller. Papers of the evening: (a) Some Middle Ear Don'ts for the General Practitioner, by Dr. John E. Sheppard; (b) Catarrh of the Upper Respiratory Tract, by Dr. Charles W. Stickle; discussion by Dr. J. H. Droge and others; (c) Early Diagnosis of Carcinoma of the Breast, by Dr. Adolph Bonner; discussion by Dr. Franz J. A. Toreck, of Manhattan, and others.

The New York Skin and Cancer Hospital, Second Avenue, corner Nineteenth Street.—The governors of the New York Skin and Cancer Hospital announce that Dr. L. Duncan Bulkley will close his clinical course with four special lectures: March 27th, Practical Points in the Diagnosis and Treatment of Diseases of the Skin; April 3rd, Errors in Diagnosis and Treatment: Don'ts in Dermatology; April 10th, Danger Signals from the Skin; April 17th, The Sig-

nificance and Treatment of Itching; and also announce a lecture by Dr. William Seaman Bainbridge, April 24th. Some Phases of the Cancer Problem. Illustrated by a series of cases. In the out-patient hall of the hospital at 4.15 o'clock. The lectures will be free to the medical profession.

Society Meetings for the Coming Week:

Monday, March 18th.—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Hartford, Conn., Medical Society.

Tuesday, March 19th.—New York Academy of Medicine (Section in Medicine); Medical Society of the County of Kings, N. Y.; Tri-Professional Medical Society of New York; Buffalo Academy of Medicine (Section in Pathology); Binghamton, N. Y., Academy of Medicine; Clinical Society of Elizabeth, N. J., General Hospital; Syracuse, N. Y., Academy of Medicine; Ogdensburg, N. Y., Medical Association.

Wednesday, March 20th.—New York Academy of Medicine (Section in Genitourinary Diseases); New York Society of Dermatology and Genitourinary Surgery

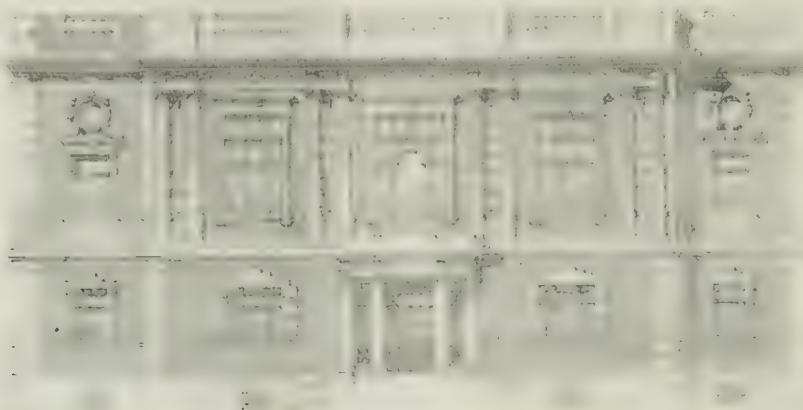
Tuesday evening, March 19th. Dr. George S. Laird, of Westfield, will read a paper on Phlebitis.

Medical Students Dine.—The Freshman Medical Class of the Medicochirurgical College, Philadelphia, entertained the Sophomore Class at dinner, on the evening of Friday, March 1st.

The Jewish Foster Home and Orphan Asylum.—A fund of \$55,000 has been raised by subscription by a committee of which Mr. Edward Wolf was chairman. This fund is to be applied to the enlargement of the Jewish Foster Home and Orphan Asylum in Philadelphia.

Mount Sinai Hospital of Philadelphia.—On Friday, March 1st. Mount Sinai Hospital, Philadelphia, received \$8,000 in donations. Of this amount, \$2,000 was given by Mr. Felix Isman, and \$1,500 each by Mr. Samuel D. Lit, Mr. Jacob D. Lit, and Mr. Charles I. A. Wimpheimer.

College of Physicians of Philadelphia.—At the regular monthly meeting of the College of Physicians of Philadelphia, held on Wednesday evening, March 6th, it was unanimously voted to proceed with the erection of a new college building on the lot situated at Twenty-second and Ludlow streets. We publish herewith a cut of the front



Front elevation of proposed building for the College of Physicians of Philadelphia

(private); Woman's Medical Association of New York City (New York Academy of Medicine); Medicolegal Society, New York; New Jersey Academy of Medicine (Jersey City); Buffalo Club; New Haven, Conn., Medical Association.

Thursday, March 21st.—New York Academy of Medicine; Newark, N. J., Medical and Surgical Society; German Medical Society, Brooklyn.

Friday, March 22nd.—Academy of Pathological Science, New York; New York Society of German Physicians; New York Clinical Society.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending March 9, 1907:

	March 9		March 2	
	Cases.	Deaths.	Cases.	Deaths.
Smallpox	11	1	4	0
Varicella	90	1	86	1
Measles	116	11	326	6
Scarlet fever	129	12	297	17
Whooping cough	120	8	51	7
Diphtheria	178	29	301	51
Tuberculosis	194	225	418	192
Cerebrospinal meningitis	24	24	14	12
Total	763	316	1,538	294

PHILADELPHIA AND THE MIDDLE STATES

The Baron de Hirsch Society has bought the Windmill Dairy Farm, near Millville, N. J. It is the intention of the society to convert the district at once into building lots and small farms for the settlement of Hebrew families.

The Clinical Society of the Elizabeth, N. J., General Hospital.—The next meeting of this society will be held on

elevation of the new building, which has been designed by Messrs Cope & Stewardson, architects.

The Woman's Hospital Medical Society.—At the annual meeting of the Woman's Hospital Medical Society, of Philadelphia, the following officers were elected for the ensuing year: President, Dr. Elizabeth R. Bundy; vice-president, Dr. Belle A. Schisler; secretary, Dr. Annie L. Conner; treasurer, Dr. Miriam Butt.

Mercy Hospital, Philadelphia.—The Mercy Hospital and School for Nurses, at Seventeenth and Fitzwater streets, Philadelphia, was formally dedicated on Saturday, February 16th. The hospital has been purchased and furnished from funds contributed entirely by the negroes of Philadelphia.

Philadelphia Personals.—Dr. J. William White was entertained at an informal dinner at the Franklin Inn Club, Philadelphia, on the evening of Friday, March 1st.

Dr. William G. Cameron, of Staples, Minn., and Dr. Charles D. Stofor, of Wichita, Kas., are registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

Samaritan Hospital Medical Society.—At the annual meeting of the Samaritan Hospital Medical Society the following officers were elected for the ensuing year: President, Dr. James C. Attix; first vice-president, Dr. Wendell Reber; second vice-president, Dr. Collier F. Martin; secretary and treasurer, Dr. J. O. Arnold; executive committee, Dr. H. C. Groff, Dr. S. F. Gilpin, Dr. B. F. Devitt.

Charitable Bequests.—By the will of Mary Meagher, St. Vincent's Maternity Home in Philadelphia receives \$100. By the will of Benjamin F. Butler, after the death of a nephew and a niece, two properties which the testator left are to be sold and the proceeds of one are to be given to

the Masonic Home and on the other to the Presbyterian Orphanage and the Presbyterian Hospital, Philadelphia, in equal shares.

Philadelphia Municipal Hospital Census:

	Remaining last report.	Received	Dis- charged	Died	Re- maining
Diphtheria	75	156	104	26	81
Scarlet fever	71	82	6	6	111
Other diseases	0	-	0	1	1

New Officers for the Medicolegal Society.—At the annual meeting of the Medicolegal Society in Philadelphia the following officers were elected for the year 1907: President, Dr. George Mays; first vice-president, William Rouff; second vice-president, Joseph Savidge, Esq.; secretary, Dr. William T. Hamilton; treasurer, Dr. G. M. D. Peltz; censors, Dr. S. P. Gerhard, S. L. Wanamaker, Esq., and James Wolf, Esq.

The Philadelphia Academy of Surgery.—At the regular monthly meeting of the Philadelphia Academy of Surgery, held on Monday evening, March 4th, Dr. Edward B. Hodge read a paper on A Case of Gallstone with Subacute Pancreatitis, and Dr. Charles H. Frazier a paper on Partial Gastrectomy, with Report of Two Cases. Cases were exhibited by Dr. Orville Horwitz, Dr. William L. Rodman, Dr. Robert G. LeConte, and Dr. W. W. Keen.

Obstetrical Society of Philadelphia.—At the regular monthly meeting of the Obstetrical Society of Philadelphia, held on Thursday evening, March 7th, Dr. William R. Nicholson read a paper on Premature Detachment of a Normally Situated Placenta, with Report of a Case. The discussion of this paper was opened by Dr. Richard C. Norris. Dr. George M. Boyd read a paper entitled Remarks on Repeated Cesarean Section, with Report of a Case.

Scientific Society Meetings in Philadelphia for the Week Ending March 23, 1907.—*Monday, March 18th*, Northeast Branch, Philadelphia County Medical Society. *Tuesday, March 19th*, Section in Ophthalmology, College of Physicians; Dermatological Society; Academy of Natural Sciences; North Branch, Philadelphia County Medical Society. *Wednesday, March 20th*, Section in Otology and Laryngology, College of Physicians; Association of Clinical Assistants of Wills Hospital; Franklin Institute. *Thursday, March 21st*, Section in Gynecology, College of Physicians; Section Meeting, Franklin Institute; Medical Society of the Woman's Hospital. *Friday, March 22nd*, Northern Medical Association; South Branch, Philadelphia County Medical Society.

A Blow to "Christian Science" in Delaware.—An amendment to the Delaware State medical laws, prohibiting any but authorized physicians to receive fees for treatment, passed both House and Senate on March 12th, notwithstanding the opposition of a delegation of fifty Christian scientists, who endeavored to block the passage of the amendment, which becomes a law when the governor affixes his signature to it. There is nothing in the amendment to indicate that its provisions are aimed directly at Christian scientists, but the fact that fees shall not be taken by any except doctors who have conformed to the State regulations and have taken a course at some reputable medical school extending over a period of four calendar years deals a blow to those who have made a living by the laying on of hands or by similar treatment.

Girls' Branch of the House of Refuge, of Philadelphia.—Mr. Alfred C. Harrison, of Philadelphia, announced to the governors of the House of Refuge on Saturday, February 16th, that he would donate to them a tract of land 150 acres in extent in the neighborhood of Glen Mills, Pa., upon which a girls' branch of that institution may be located. A home for boys is already situated in the same neighborhood, that for girls being at present located at Twenty-fifth and Poplar Streets, Philadelphia. These quarters are entirely too small for the present population of the house, hence it is with a great deal of satisfaction that the governors learn of the intention of Mr. Harrison to deed this property to them. The board of governors has taken measures to obtain an appropriation from the State legislature for the purpose of erecting the necessary buildings upon the ground.

Philadelphia Neurological Society.—At the regular monthly meeting of the Philadelphia Neurological Society, held on Tuesday evening, February 26th, the following

programme was presented: Dr. J. H. Lloyd, Paralysis of the Sixth Nerve, Coming on During an Attack of Typhoid Fever; Dr. W. G. Spiller, Two Cases of Doubtful Cervicothoracic Tabes and a Case of Unilateral Lesion of the Cauda Equina; Dr. T. H. Weisenburg and Dr. C. C. Mangrader, New Clinical Symptoms in Hemiplegia and Tabes Dorsalis; Dr. David Riesman, A Case of Intermittent Claudication; Dr. C. W. Burr and Dr. C. D. Camp, A Case of Alternating Unilateral Convulsions; Dr. A. P. Francine, Paralysis of the Upward Associated Ocular Movements Following Sudden Coma. The second combined meeting of the New York and Philadelphia Neurological societies will be held on Saturday evening, March 16th, in New York city.

Section in Ophthalmology, College of Physicians.—At the January meeting of this section the following officers were chosen for the ensuing year: Chairman, Dr. Howard F. Hansell; clerk, Dr. Edward A. Shumway; executive committee, appointed by Dr. Tyson at the February meeting of the college, Dr. George C. Harlan, Dr. William Zentmayer, Dr. Edward A. Shumway. At the regular monthly meeting of the section, held on Tuesday evening, February 19th, the following programme was offered: Dr. George S. Crampton, Report of a Case of Epithelioma of the Sclero-corneal Limbus; Dr. Howard F. Hansell, Trachoma, Clinically and Socially Considered; Dr. Burton K. Chance, A Case of Electric Light Burn of the Eye, with Transient Blindness; Dr. William Campbell Posey, Exhibition of (1) A Case of Coloboma of the Eyelid, with Curious Reduplication of the Bulbar Conjunctiva; (2) A Case of Removal of the Lens for High Myopia; Dr. G. E. de Schweinitz, Extensive Intraocular Angiosclerosis and Retinal Hemorrhages in a Young Negro, Probably Specific in Origin, with exhibition of the patient; Dr. S. Lewis Ziegler, Report of a Case of Keratitis Tuberculosis, Treated by Tuberculin.

Philadelphia's Water Supply.—On Thursday, February 21st, Mayor Weaver, of Philadelphia, transmitted to the city council the report of the special commission to investigate the pollution of the city's water supply. The commission was composed of Dr. W. M. L. Coplin, director of the board of public health and charities; Chief Webster, of the bureau of surveys; and Major Cassius E. Gillette, chief of the bureau of filtration. The report indicates that both the Schuylkill River and the Delaware River are much polluted by the waste from the coal mines, breakers and washeries on the watersheds of these streams. The report also calls attention to the sewage pollution of the Schuylkill from Pottsville, Reading, Pottstown, Norristown, Manayunk, and numerous other large cities and towns. The same conditions, but to a less extent, pertain to the water of the Delaware, into which the sewage from Trenton, Burlington, Bristol, Easton and other places is poured. This ground has all been gone over before, so far without result. The residents of Philadelphia are still looking forward to a supply of filtered water, which they have every right to expect.

Philadelphia Board of Health Statistics.—During the month of January, 1907, in the Division of Medical Inspection, 5,004 inspections were made, excluding schools; 805 fumigations were ordered; 54 cases were referred for special diagnosis; 7,250 visits were made to schools and 1,306 children were excluded; 308 cultures were taken; 215 injections of antitoxine were made; and 213 persons were vaccinated. In the Division of Vital Statistics 3,109 deaths, 3,017 births, and 1,420 marriages were reported. In the Division of Milk Inspection 7,633 inspections were made of 170,986 quarts of milk, of which 348 quarts were condemned; 9 specimens were examined chemically and 904 microscopically. In the Division of Meat and Cattle Inspection 3,142 sanitary inspections were made, of which 13 were found unsanitary; 3,142 inspections of dressed meats were made with 1,004 condemnations; 1,151 post mortem examinations were made, with 61 condemnations. In the Division of Disinfection 146 fumigations were made for scarlet fever, 402 for diphtheria, 404 for typhoid fever, 216 for tuberculosis, and 286 for miscellaneous diseases. Eighteen schools were fumigated. In the Bacteriological Laboratory 1,605 cultures were examined for the presence of the bacillus diphtheriae; 944 specimens of blood were examined for the Widal reaction; 902 specimens of milk and 152 specimens of sputum were examined; 7 disinfection tests were made, and 3,873,000 units of antitoxine were dis-

tributed. In the Chemical Laboratory 137 analyses were made.

The Philadelphia Branch of the American Pharmaceutical Association.—A meeting of the Philadelphia Branch of the American Pharmaceutical Association was held on the evening of Tuesday, March 5, 1907, and was devoted to a discussion of The Indiscriminate Renewal of Physicians' Prescriptions. Dr. A. O. J. Kelly opened the discussion with a paper on The Repeating of Prescriptions from a Physician's Point of View, and while he had no positive or well defined ideas as to the limitations that should govern the renewal of prescriptions, he could see no reason why prescriptions for many comparatively simple external remedies, such as mild rubefacient liniments, should not be renewed and even many prescriptions for internal use, such as stomachics and mild laxatives. On the other hand he believed that the renewal of prescriptions for potent drugs, drugs that are designed to enslave, or at all likely to do harm, was a practice to be condemned and one that would never be followed by a pharmacist who had the real interest of his customer in mind. Mr. Franklin M. Apple presented An Efficient Plan for Controlling the Renewal of Prescriptions. In this connection Mr. Apple described a prescription blank that was designed to allow physicians to control the renewal of prescriptions and virtually relieved the pharmacist from the, at times, disagreeable task of discussing with the patient the propriety or the right of filling certain prescriptions. Mr. John K. Thum, in discussing A Retrospect of Discussions on the Renewal of Prescriptions, referred to an opinion by the late Dr. E. R. Squibb, in which that gentleman had held that it was impracticable to institute hard and fast rules regarding the renewal of prescriptions and that the whole question resolved itself into a matter of honesty, good sense, and education on the part of the pharmacist. Dr. H. C. Wood, in opening the general discussion, said that we should never lose sight of two of the most important factors in this connection: the safeguarding of the public health and the guarding of the patient against the ever possible generation of a drug habit. He believed it to be wise for the physician to write the injunction not to renew the prescription on all orders for potent or habit forming drugs. On motion the question was also referred to the Philadelphia County Medical Society for an expression of opinion from the members of that society.

BALTIMORE AND THE SOUTH

A Consolidation of Medical Journals.—The *Medical Era*, of St. Louis, Mo., has acquired and will consolidate with the *Medical Mirror*. The April issue of the *Medical Era* will be the first number of the consolidated journals.

The Mortality of Baltimore.—The total number of deaths reported the week ending March 9th was 260, as compared with 222 the corresponding week of last year, 216 in 1905, and 282 in 1904. The annual death rate in a thousand of population was: Whole, 23.38; white, 22.11; colored, 30. The principal causes of death were:

Measles.....	1	Organic heart diseases.....	29
Diphtheria.....	1	Pneumonia.....	41
Membranous croup.....	1	Bright's disease.....	25
Influenza (disruptive).....	2	Congenital debility.....	16
Consumption.....	36	Lack of care.....	1
Cancer.....	10	Old age.....	6
Apoplexy.....	9	Starvation.....	1
Burns.....	5	Accidents, etc.....	16

Nine deaths occurred at Bayview Asylum, 32 in hospitals, and 12 in other institutions. Thirty-five coroners' inquests were held. The following number of cases of infectious diseases were reported:

Diphtheria.....	31	Measles.....	118
Scarlet fever.....	12	Whooping cough.....	55
Typhoid fever.....	4	Consumption.....	21

BOSTON AND NEW ENGLAND.

The Mortality of Boston.—The number of deaths reported to the Board of Health for the week ending March 9th, was 262, as against 250 the corresponding week last year, showing an increase of 12 deaths, and making the death rate for the week 22.69. The number of cases and deaths from infectious diseases was as follows: Diphtheria, 49 cases, 3 deaths; scarlatina, 55 cases, no deaths; typhoid fever, 7 cases, no deaths; measles, 8 cases, no deaths; tuberculosis, 47 cases, 36 deaths; smallpox, no cases, no deaths. The deaths from pneumonia were 30, whooping cough 1, heart disease 37, bronchitis 9, marasmus 3. There

were 16 deaths from violent causes. The number of children who died under one year of age was 43; under five years of age 57; persons over sixty years of age 74; deaths in public institutions 84.

CHICAGO AND THE WEST

Personal.—Dr. Chester A. Paull, of the Loomis sanitarium, of Liberty County, N. Y., has been chosen superintendent and physician in chief of the new State tuberculosis sanitarium, which will be opened in May, 1907, at Wales, Waukesha County, Wisconsin. Dr. Paull is a Massachusetts man and a graduate of Tufts College Medical School, in 1903.

The Cincinnati Academy of Medicine.—The semicentennial of this academy was celebrated at the Hotel Sinton, on Tuesday evening, March 5th, with a very enjoyable banquet at which 350 medical men sat down. Dr. J. E. Greiwe, the retiring president, was toastmaster, and speeches were made by Dr. Byron Stanton, the only charter member present; Dr. A. G. Drury, Dr. N. P. Dandridge, Dr. P. S. Connor, Dr. B. P. Good, Dr. S. Nickles, Dr. C. D. Palmer, and Governor Bradley, of Kentucky. The event was a very happy one and it was probably the finest gathering of Cincinnati physicians which has ever taken place. The election of officers for the following year resulted as follows: President, Dr. F. W. Langdon; first vice-president, Dr. William Gillespie; second vice-president, Dr. John Oliver; secretary, Dr. Mary K. Isham; treasurer, Dr. A. G. Drury.

Statement of Mortality of Chicago for the Week Ending March 2, 1907, compared with the preceding week, and with the corresponding week of 1906. Death rates computed on United States Census Bureau's figures of mid-year populations—2,107,620 for 1907, 2,049,185 for 1906.

	Mar. 2, 1907.	Feb. 23, 1907.	Mar. 3, 1906.
Total deaths, all causes.....	786	707	563
Annual death rate in 1,000.....	19.45	17.49	14.32
SEXES			
Males.....	476	403	318
Females.....	310	304	245
AGES—			
Under 1 year of age.....	148	122	109
From 1 to 5 years of age.....	73	77	49
From 5 to 20 years of age.....	55	52	51
From 20 to 60 years of age.....	333	305	234
Over 60 years of age.....	177	151	120
Important causes of death—			
Apoplexy.....	19	13	15
Bright's disease.....	50	42	30
Bronchitis.....	23	22	15
Consumption.....	91	79	63
Cancer.....	25	25	21
Convulsions.....	16	9	9
Diphtheria.....	5	20	10
Heart diseases.....	50	50	32
Influenza.....	5	6	3
Intestinal diseases, acute.....	34	24	27
Measles.....	12	7	2
Nervous diseases.....	25	16	17
Pneumonia.....	144	161	111
Scarlet fever.....	23	27	11
Suicide.....	11	9	9
Typhoid fever.....	9	8	8
Violence (other than suicide).....	69	37	27
Whooping cough.....	7	8	3
All other causes.....	168	144	137

GENERAL.

The Fourteenth International Congress for Hygiene and Demography will be held in Berlin, Germany, September 23rd to 29th, of the current year. The secretary general of the congress is Dr. Nietner, Berlin 9, W., Eichornstrasse 9, to whom all communications with reference to the congress should be addressed.

The German Urological Society will hold its first congress at Vienna, Austria, on October 2 to 5, 1907, at the house of the Imperial Royal Society of Physicians. Announcements of papers to be read and demonstrations to be made should be sent to Dr. Kapsammer, 3 Maria Theresien Strasse, Vienna IX, Austria, not later than July, 1907.

A Bill for the Prevention of Leprosy in Japan has been presented in the Japanese Diet by the Bureau of Health of the home department. If the bill is passed it will become operative on and after October 1, 1907. The provisions of the bill are: The examination of localities with reference to their effect upon patients; the establishing of seven or eight leper hospitals or asylums throughout Japan; the segregation of all lepers to prevent their contact with non-leperous people, and to ascertain if leprosy can be completely exterminated. The bill calls for an appropriation of 160,000 yen (\$80,000).

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

March 9, 1907.

1. *Technics of Iridectomy.* By HENRY M. SHERMAN.
2. *Medical Tendencies and Medical Ideals.* By L. EMMETT HOLT.
Multiple Neuritis Simulating Progressive Muscular Atrophy. With Report of Cases. By JEFF. GRINKER.
4. *Some Legal Phases of the "Patent Medicine" Question.* By CHARLES H. WILLIAMS.
5. *The Outbreak of Cholera in the Philippines in 1905.* By VICTOR G. HEISER.
6. *Cerebral Syphilis in Childhood (Continued).* By ABELER W. FAIRBANKS.
7. *The Ripening Operation for Immature Senile Cataract; Its Place.* By FRANK C. TODD.

3. **Multiple Neuritis Simulating Progressive Muscular Atrophy.**—Grinker reports three cases, one of alcoholic polyneuritis, one of lead paralysis, and one of progressive muscular atrophy. He states that they demonstrate among other things the futility of attempting to diagnosticate a case from a mere objective examination, and emphasize the necessity of studying the ætiology and course of the disease. He draws the conclusion, that clinically, multiple neuritis may simulate a spinal atrophy as regards distribution of paralysis, absence of sensory symptoms, and protracted course. Progressive spinal muscular atrophy may resemble multiple neuritis in the presence of pain, remission of symptoms, and subacute course. Ætiology and course are still our best guides in the clinical diagnosis of the various muscle atrophies.

4. **Some Legal Phases of the "Patent Medicine" Question.**—Williams observes that we must not expect too much of legal measures. There never has been, and never can be, enacted any law which will protect people from the consequences of their own folly. So long as mankind is constituted as it is, the fool killer will thrive and do business. But in matters so affecting the public health and welfare of society as the administration of medicine and the treatment of disease the public has a right to insist that powerful and poisonous drugs shall not be foisted on them under the guise of harmless articles; that liquor, if sold, shall be sold as such and only under proper restrictions, and that some reasonable guarantee shall be afforded that an article publicly advertised is what it purports to be, and that, if these reasonable requirements are not fulfilled, there be some sure and direct way of administering punishment on the agency responsible for such failure, be such agency the proprietor of a medicine or the proprietor of a newspaper, through whom the former is enabled to reach the public ear and confidence. The benefits of focusing public attention on any question demanding correction cannot be overestimated, as it is only in this way that the public can be brought to a realization of the facts. When this is done, when the inertia of public opinion is set in motion by an adequate understanding of the facts, the "patent medicine" evil, like many others of greater magnitude, will find an easy solution, for it exists to-day only because the people do not understand.

5. **The Outbreak of Cholera in the Philippines in 1905.**—Heiser writes that from the evidence obtainable at this time, it is impossible to state whether the cholera was reintroduced into the Philippines, or remained there in some latent form for the year and a half during which no cases were detected. While there is no evidence to show that the disease spreads by other means than that of enteric fever, yet the rapidity with which it makes its appearance in many widely separated places, puts it in an entirely different class, so far as combating it successfully is concerned. Mari-

time quarantine can practically insure the prevention of its spread by sea. It is practically impossible to make a land quarantine effective, hence, it is useless to engender the opposition with which it is usually met, and the time and money required by such a quarantine will yield much better results when put to the education of the public in the manner in which the disease spreads. The education of the public is a much more effective measure in its suppression than methods requiring force in their application. In order to make serious outbreaks of cholera in the Philippines impossible it will be necessary to replace the present insanitary water supplies with artesian wells, or other sources from which infection by surface drainage can be avoided, or to correct it by filters or other means where it does occur.

6. **Cerebral Syphilis in Children.**—Fairbanks states that the prognosis in cerebral syphilis in children depends to a considerable extent on the pathological type. Purely gummatous lesions yield readily to specific treatment. Meningeal processes, if not of too long duration, and taken at a time previous to the occurrence of secondary atrophy and sclerosis in the gray matter, also possess a favorable prognosis. If destructive involvement of the hemispheres has already occurred, specific treatment may check the advance of the meningoencephalitic process, but the destroyed areas remain, with atrophy, sclerosis and softening and adhesions between the meninges and brain. Of all the forms of syphilitic cerebral disease the arterial lesions present the most unfavorable prognosis. While some cases respond to treatment, others not only do not yield, but, even while treatment is in force, may present an increase in clinical phenomena due to arterial disturbance. Hæmorrhage is very rare in children with specific cerebral arterial disease. Occlusion from thickening of wall or thrombosis is the rule. Finally the prognosis depends greatly on the time when the cerebral disease commences. If it begins at a period of childhood when reasonably reliable subjective complaint is possible, or when the mental evolution has reached a degree at which early changes in disposition and insidious weakening of the intellect are likely to be conspicuous, earlier recognition, and therefore more effective treatment, will result. Syphilitic lesions in the brain have been found immediately after birth, or so soon afterward that they furnish conclusive evidence that it is possible for the involvement of the cerebral nervous structure to antedate birth.

7. **The Ripening Operation for Immature Senile Cataract; Its Place.**—Todd says that the methods which have been devised for the purpose of ripening an immature cataract, are: 1. Puncture of the anterior capsule combined with iridectomy (Mooren, 1858). 2. Puncture of the capsule combined with trituration (Rhomor, 1886). 3. Preliminary iridectomy with trituration through the cornea, indirect trituration (Forster, 1881). 4. Trituration after simple paracentesis without iridectomy (T. R. Pooley operated on rabbit, 1885, and soon after J. A. White operated by this method on a human being). 5. Paracentesis, with or without iridectomy, and direct trituration on the anterior capsule (Ricaldi, 1888, and Bettman, 1892). From investigation it appears that the last two methods are practiced to almost the same extent. Two operators, Dr. J. A. White and Dr. J. Edward Jackson, however, practice exclusively, and with great success, the method of Pooley. Knapp considers needling the capsule or direct trituration the only efficient method. Operators of experience disagree regarding the selection of the method of Forster or Bettman. Ayres, Wilder, Prince, Westcott, and others prefer the former. Wilder is strongly opposed to direct trituration, having had two serious results following this method, but Colburn, Ball, Weeks, and others prefer it to trituration outside of

the cornea. From one to four or five weeks are necessary, according to most of the opinions expressed, but extraction is not practised usually for ten weeks. It would seem that a second operation for membranous cataract is not required so often after extraction following a ripening operation, as after extraction of immature cataract, though many operators state that they do not think there is any difference in this respect. The author, therefore, comes to the conclusion that, if we grant the success and safety alleged by those of much experience in irrigation, the operation of ripening is indicated: 1. In case of immature cataract (not mentioned as contraindicated), in which a preliminary iridectomy is to be performed. 2. In those patients who would not be likely to behave well during the extraction, thus preventing the operator from performing much toilet or from practicing irrigation.

MEDICAL RECORD.

March 9, 1907.

1. The Salt Free Diet in Chronic Parenchymatous Nephritis. By GEORGE L. PEABODY.
2. Influenza; Mastoid Abscess; Leptomeningitis; Nine Day Unconsciousness; Three Operations; Death; Autopsy, By H. BROOKER MILLS and NATHAN G. WARD.
3. Typhoid Fever Complicated by Multiple Abscesses of the Kidneys and by Lobar Pneumonia, By L. NAPOLEON BOSTON.
4. The Prevention of Disease, By EDWARD E. FEILD.
5. The Hand of Iron in the Glove of Rubber, By ROBERT T. MORRIS.
6. Intraabdominal Abscess Due to Gonorrhœal and Bacterium Coli Infection Complicating Pregnancy; Operation with Combined Vaginal and Abdominal Drainage, Recovery. By S. STRAUSS.

1. **The Salt Free Diet in Chronic Parenchymatous Nephritis.**—Peabody says that his experience is that in many cases very soon after the beginning of treatment for chronic parenchymatous nephritis, œdema, and therefore body weight will diminish rapidly. This occurs more promptly and more completely if the patient remains absolutely at rest in bed. In some cases œdema of the lower extremities does not entirely disappear, and in these diuretics must be employed. In general, the effect is much more marked in parenchymatous than in interstitial nephritis. The author has tried the effect of the salt free diet as a means of removing fluid in cases of anasarca of various kinds. In anasarca due to heart causes or to combined failure of heart power and interstitial nephritis, very little has been accomplished with it. Although the statement has been made that it causes a lowering of blood pressure in high tension with arteriosclerosis, such has not been the author's experience. The results of carefully conducted observations in cases of this class have been almost uniformly disappointing in his wards. The diet is not unpalatable, and can be made sufficiently varied to be well borne for weeks if necessary, though ordinarily a few days will suffice to remove the œdema, or greatly to diminish it. Unsalted bread is very palatable, especially if made with milk instead of water. Made in this way, it does not become hard or dry, if not too long kept. The following is the bill of fare adopted by the author: Breakfast: Coffee or tea, eggs, cereals, cream, fresh butter, fruits, bread made without salt. 10 a. m.: A glass of milk. Dinner: Chicken, fish, potato variously prepared, bread made without salt, ice cream, jelly, fresh butter, cocoa $\bar{\text{viii}}$. 3 p. m.: A glass of milk or water. Supper: Eggs, chicken, bread without salt, jelly, custard, cream, fresh butter, tea $\bar{\text{viii}}$. 8 p. m.: A glass of milk or water. After complete removal of the œdema the author now administers progressively increasing daily quantities of salt to these patients, carefully watching for any recurrence of this symptom, the endeavor being to ascertain for each patient what his salt equilibrium may be. By far the best way of ascertaining the exact amount

of water lost by such a patient is by weighing him. Measurement of the circumference of his abdomen and of his extremities is of little relative value. Unless some other illness supervenes, he loses no weight except water, for he is very well nourished by the food that he takes, so that by weighing him the author has a fairly exact means of ascertaining the result that we are bringing about. It is of interest that the disappearance of œdema is not always accompanied by any very obvious increase in the amount of urine passed, though this sometimes also happens. The patient must lose water in other ways, and he often loses both salt and water by the bowel.

3. **Typhoid Fever Complicated by Multiple Abscesses of the Kidneys and by Lobar Pneumonia.**—Boston reports a case of a patient suffering from typhoid fever complicated by multiple abscesses of the kidneys and by lobar pneumonia. The post mortem examination showed that the superior lobe of the left lung and one half of the inferior were involved by an acute pneumonic process, while the remaining portion of the lung was collapsed. Excised fragments from the consolidated portions of the lung sank immediately when placed in water. The right lung displayed a few pleural adhesions at the base, and the inferior lobe was completely involved by an acute pneumonic process which was apparently identical with that displayed by its fellow. The edges of the spleen were blunt and decidedly thickened, the organ was soft, and upon section the cut surface was purplish red and fairly characteristic of that found in typhoid fever. The condition of the kidneys was equally striking in interest with that presented by the lungs. The left kidney was slightly enlarged, and presented a smooth slate colored surface. Upon section the organ cut easily and its capsule stripped readily, leaving behind a highly congested surface. Both upon the cut surface and underneath the capsule there were seen a number of small septic infarctions, which appeared to be rather evenly disseminated throughout the greater portion of the cortical (medullary) substance of the kidney. The cut surface of the kidney was decidedly grayish in color and displayed extreme congestion at the base of the pyramids. The pyramids also showed some striation as the result of septic emboli. The colon, from the ascending portion onward, displayed only a moderate degree of congestion. The ascending colon presented a few ulcers. At the cæcum there was a marked aggregation of small ulcers, which covered more than one half of the mucous surface, and there was also extensive ulceration at the ileocæcal valve. The first part of the ileum was almost entirely occupied by an extensive ragged ulceration resembling that found in the cæcum, and beyond this point there were many deep, ragged ulcers, corresponding to the situation of Peyer's patches.

BRITISH MEDICAL JOURNAL.

February 23, 1907.

1. The Treatment of Lacrymal Obstruction, By J. H. PARSONS.
2. The Lacrymal Sac in the Economy of Vision, By J. J. EVANS.
3. Merycism or Rumination in Man, By E. M. BROCKBANK.
4. Kala Azar (*Milroy Lectures*, I.), By L. ROGERS.
5. A Case of Cerebrospinal Meningitis, with Observations as a Pleomorphic Diplococcus Obtained by Lumbar Puncture, By J. S. DARLING and W. J. WILSON.

1 and 2. **Lacrymal Obstruction.**—Parsons, in discussing the treatment of lacrymal obstruction, states that the cause of the affection is inflammation of the lacrymal sac and nasal duct. The inflammation generally spreads up the nasal duct from the nose. The primary result is swelling of the epithelium and engorgement of the venous plexus. The lumen of the duct is obliterated and fluid accumulates in the sac,

which is kept dilated. The fluid often becomes mucopurulent, and we have the condition known as dacryocystitis or mucocele. When the sac is pressed on, the fluid is expelled, passing down the nose or more commonly into the conjunctival sac. Such a mucocele is a constant menace to the eye, the pus almost always containing pneumococci, the causative organism of hypopyon ulcer of the cornea which last frequently leads to perforation of the cornea and loss of the eye. Until a few years ago the universal method of treatment was by probing the nasal duct. Such probing almost always does grave damage; the swollen and softened epithelium is lacerated, and often the renules are torn and hæmorrhage takes place. These abrasions are restored by new fibrous tissue, which is at first elastic; but later it contracts, and the use of larger probes is necessary. Such probing is extremely painful, and patients hesitate to resort to it, until the regurgitation of pus and the epiphora become unbearable. Fortunately a more rational method of treatment has been devised. In most cases, syringing, properly carried out, results in complete cure if the case has never been treated with probes. If syringing fails, then extirpation of the lacrymal sac offers a really radical cure. The syringing must be repeated every day; the lower puncture is dilated with a Nettleship's dilator, and an all glass syringe fitted with a fine probe pointed straight cannula, is filled with boracic acid or saline solution. The cannula is introduced into the lacrymal sac, not into the nasal duct. Several syringefuls of fluid are passed in each time, and at the end of a week, the fluid will begin to pass through into the nose. Where probing has been previously resorted to, syringing often fails to bring about a cure, and excision of the lacrymal sac is indicated. The author carefully describes the operation. Mucocele is not uncommon in very young infants, being due to delayed canalization of the nasal duct. The mother should squeeze out the contents of the sac several times a day, and use a simple conjunctival lotion. If necessary a probe may be passed, but only once, after which syringing should be resorted to.—Evans holds that excision of the lacrymal sac and pathological suppression of the lacrymal function give rise to no discomfort or interference with visual functions. Neither the canaliculi, lacrymal sac, or nasal duct are essential elements in the function of vision. Excision of the sac is indicated in: 1. Cases of dacryocystitis which have resisted conservative treatment by probing for three months. This is especially true when probing causes acute pain, when the cornea is implicated, and the bony walls of the lacrymal canal are diseased. 2. Cases where the dacryocystitis is bilateral and the patient has already lost one eye from hypopyon ulcer. 3. As a preliminary to operations on the eyeball in cases of dacryocystitis. 4. Diseases of the sac which endanger general health—tubercle, malignant growths, etc. 5. Lacrymal fistula.

3. **Merycism.**—Brockbank's article is based on the observation of seven cases of merycism or rumination in man. As in the lower mammals, merycism means the return of food, after completion of a meal, in limited and definite amounts into the mouth, where it is chewed again and swallowed. The whole process appears perfectly natural, and usually takes sufficient time for all the food to be remasticated. The author has observed several members of one family in which rumination has occurred in three (possibly four) generations, and shows signs of coming on in still a later generation. The process may occur after all meals, or only after one special meal of the day. As a rule, it is independent of the amount of solid food eaten or of the chewing the food may have undergone. The food brought up may be remasticated or immediately re-swallowed. The act, at first voluntary, later becomes

involuntary. The general health is usually good unless the regurgitated food is spat out, when emaciation may ensue. It is met with in all classes of society, and heredity undoubtedly plays a decided part. The question of imitation must, however, be borne in mind. As a rule, rumination develops between ten and twenty years of age, males and females being affected with equal frequency. It sometimes follows an infectious fever, indigestion, or diseases of the nervous system. It is frequently met with in asylums. The nature of the gastric juice varies and apparently has no definite causal effect. The whole process may be vaguely described as a perverse combination of motor processes or a reflex functional neurosis. Post mortem examination shows the stomach to be perfectly normal. It is probably useless to try and control rumination when it is a physiological phenomenon. The patients should be advised to eat very slowly, to chew their food well, to avoid predisposing foods, and to take little fluid with meals. Smoking acts as a deterrent in some instances.

4. **Kala Azar.**—Rogers, in the first of his Milroy lectures, discusses the differentiation and epidemiology of kala azar. It is the epidemic manifestation of a fever, endemic in extensive areas of India, which has spread slowly for thirty years up the Assam Valley as a wave of greatly increased mortality, dying out largely as it passes on, after causing a decrease in the population and the falling out of much land in the affected tracts, traveling along lines of communication, and checked by high elevations and extensive areas of unpopulated jungle, and now, happily, largely on the decrease. A precisely similar epidemic in Bengal is known as the Burdwan fever. It is also identical with what has been known in India for years as "malarial cachexia." It is characterized by very persistent fever of an alternating remittent and intermittent type, commonly mistaken for typhoid fever in the early remittent stage, but rapidly leading to a cachectic condition with enlargement of the spleen and liver, and extreme wasting, the fever lasting from a few months to several years, and commonly terminated by some complicating affection. The mortality varies from 98 per cent. to 75 per cent. The disease in its progressive stages is constantly associated with, and probably caused by, a minute protozoal organism which has been shown by cultivation outside the body, to be one stage of a flagellated parasite. Some biting insect is strongly indicated as the carrier of infection.

LANCET.

February 23, 1907.

1. The Objects of Hunter's Life and the Manner in Which He Accomplished Them (*Hunterian Oration*),
By H. T. BUTLIN.
2. Kala Azar: Its Differentiation and Its Epidemiology (*Milroy Lectures, I*),
By L. ROGERS.
3. The Diagnosis and Localization of Cerebral Tumours (*Lettsonian Lectures, II*),
By C. E. BEEVOR.
4. On the Condition of the Bloodvessels During Shock.
By J. D. MATHIAS.
5. A Case of Infective Endocarditis Cured by the Inoculation of a Vaccine Prepared from Organisms Found in the Patient's Blood, the Inoculations Being Regulated by the Examination of the Opsonic Power of the Patient's Serum.
By Sir J. BARR, W. B. BELL, and S. R. DOUGLAS.
6. A New Method of Fixation of the Bones in Excision of the Knee,
By E. W. H. GROVES.
7. Some Affections of the Pancreas (*Concluded*).
By S. PHILLIPS.
8. A Preliminary Note on Rinné's Test.
By R. LAKE.
9. Cellulitis of the Spermatoc Cord.
By F. C. MADDEN.
10. The Obstetrical Society of London and Its Examinations for Midwives; A Chapter in the History of the Midwives Question,
By C. J. CULLINGWORTH.
11. The Role of the Blood Plasma in Diseases. III.
By H. CAMPBELL.

4. The Bloodvessels During Shock.—Malcolm, contrary to the generally accepted views of Crile and others, holds that the bloodvessels are intensely contracted and not paralyzed. If true this would account for the pallor of the skin, for the improvement of the pulse induced by vasodilators, for the difficulty of injecting fluid into the veins during shock, for the rise of pressure in the portal vein and in the specific gravity of the blood. The relaxation of the larger internal vessels which occurs in shock is brought about not by their paralysis, but chiefly by intravascular pressure, and partly because of a physiological necessity for an accumulation of blood and a conservation of heat in the warmer parts of the body. The effects of treatment also help to support his view. Warmth, stimulating vasodilators, and strychnine should and do prove beneficial. But adrenalin can do good only at considerable risk. Injections of saline solution into the cellular tissue are of service, but any attempt to increase the bulk of the blood is of doubtful value. Prevention is the important thing. Before every operation the patient should be got into the best condition possible. During the operation everything should be done to maintain a flow of blood to the surface and to the head, and to keep the patient alive by warmth, by the administration of strychnia and of vasodilators, and by mechanical means such as lowering the head and compressing the abdomen. Traumatism must be reduced by rapidity of operation with the least possible loss of blood.

6. Fixation After Excision of the Knee.—Groves's method of rigid fixation of the bones of the leg after excision of the knee joint consists in passing two metal rods horizontally through the tibia and the femur about two inches in each case from the line of section. Each rod is one eighth of an inch in diameter and six inches long. The projecting ends of these horizontal rods are then drawn together by two vertical rods provided with screw threads and nuts. These can very quickly be tightened up with a spanner. When the apparatus is in position and firmly screwed up, the bones are immovably fixed. The final tightening of the nuts can be done after all the stitches are put in and the leg is on a splint. It may be fairly claimed for this operation: (1) That it fixes the bones together more firmly and more rigidly than any other method, because the fixation acts upon the dense bone of the shaft and not upon the cancellous tissue; (2) that the bones are transfixed and held at points well away from the diseased area; (3) that the final fixation and tightening can be effected after the wound is sewn up and the leg is on a splint; (4) that it saves the patient a great deal of pain in the dressings; and (5) that it leaves no foreign bodies in the bones which may have to be removed by a subsequent operation. The rods are removed under gas at the end of a fortnight; the transverse rods have a sharp cutting end like an awl, and are themselves used to make the holes through the bones.

7. Some Affections of the Pancreas.—Phillips, in his concluding paper on this subject, discusses simple acute pancreatic catarrh. It is due in many cases to infection spreading along the ducts from cholelithiasis, in others it is set up by pancreatic calculi. When due to calculi there will possibly be present, in addition to jaundice, pain, and other symptoms special to them. Where no calculi are present, if, as is suggested, catarrhal pancreatitis is the cause of many cases of so called catarrhal jaundice, the symptoms of that affection may be taken as indications of catarrh of the pancreas. In some cases it is possible that swelling and tenderness over the head of the pancreas may be detected. When due to calculi, either in the biliary passages, or pancreatic ducts, the treatment is that of

calculus. Operation should only be resorted to when the symptoms refuse to subside or become threatening.

9. Cellulitis of the Spermatic Cord.—Madden has seen a number of cases, closely resembling strangulated hernia, but which on operation have proved to be instances of cellulitis of the spermatic cord. The patient complains of pain in the scrotum and abdomen on one side, with constipation and vomiting. The temperature is high and the condition may be very bad. Examination shows a large rounded swelling in the scrotum, running up to the external ring, and presenting all the appearances of an irreducible inguinal hernia. On palpation the skin is cedematous, and the swelling is hard and irreducible. On incising the neck of the scrotum, no gut will be found, but a thick inflamed rope-like structure running up into the abdomen through the internal ring. This is the spermatic cord, the veins of which are all thrombosed and filled with purulent clot. On the removal of this portion of the cord an elongated hernial sac of thickened inflamed peritonæum, its serous surfaces adherent with lymph, may sometimes be found and ligatured off at the level of the internal ring. After running a modified septic course the patients usually do very well. The author can make no suggestion as to the cause of the condition.

LA PRESSE MEDICALE

February 6, 1907.

1. Cardiac Pathology. Interauricular Insufficiency,
By Professor H. ROGER.
2. Cells of the Exudate in Epidemic Cerebrospinal Meningitis.
By M. SPERONI.
3. The "Vibrosuppressor," a New Instrument for Topographical Percussion,
By ALBERT ABRAMS.
4. Digestive Albuminuria and Foreign Albumins,
By R. ROMME.

1. Interauricular Insufficiency.—Roger reports the case of a man, forty-four years of age, who came to him suffering from dyspnoea and cyanosis, in whom the physical signs indicated simply the presence of pulmonary emphysema with bronchitis and a slight congestion at the bases of the lungs without any inflammatory focus. Nothing wrong could be detected in the heart or any visceral organ, and in particular no evidence of tricuspid insufficiency could be found to explain the cyanosis. The patient died. Autopsy revealed the pulmonary conditions to be exactly as they had been diagnosed from the physical signs. The heart was very slightly enlarged, the left ventricle was normal, the right slightly dilated, and a communication was discovered between the two auricles, which permitted fluid to flow from the right to the left, but not in the reverse direction because of the oblique course of the canal through the interauricular septum. The canal was large enough to permit the easy passage of a goose quill, and was 7 mm. in diameter at its opening into the left auricle.

2. Cells of the Exudate in Epidemic Cerebrospinal Meningitis.—Speroni finds that the exudate in epidemic cerebrospinal meningitis is composed of a seroalbuminous fluid and cells. The latter includes several varieties, polynucleated leucocytes (neutrophiles), mononucleated leucocytes (lymphocytes, large mononucleated cells), red blood corpuscles, and connective tissue corpuscles. He says that all of these cells have also been found in the exudate obtained by lumbar puncture, and that their recognition is of great importance in the diagnosis of this form of meningitis.

3. The "Vibrosuppressor."—Abrams describes an apparatus which somewhat resembles a tourniquet, and which is to be applied about the lower part of the chest and tightened so as to suppress the vibration of the thoracic walls, particularly of the sternum, during examination of the chest by percussion.

January 1, 1907.

1. Clinical Exploration of the Colon. By J. OKINECZYC.
2. The Actual Cautey. Mechanism and Action, By P. DESFOSSES and A. MARTINET.

1. **Clinical Exploration of the Colon.**—Okineczyk gives a resume of the objective signs met with in the development of cancer of the colon, and describes the methods of investigation by means of inspection, palpation, percussion, insufflation, digital examination, and rectocolic endoscopy.

2. **The Actual Cautey.**—Desfosses and Martinet deal with the caustic action, properly so called, of the actual cautey, its revulsive action, its effect on nutritive changes, and its action on microbic localizations and phagocytosis.

BERLINER KLINISCHE WOCHENSCHRIFT.

January 28, 1907.

1. Concerning Infection of Milk and the Origin of Primary Intestinal Tuberculosis in Children, By J. FIBIGER and C. O. JENSEN.
2. Catalytic Influence Upon Autolysis in the Liver by Colloid Metals, By M. ASCOLI and G. IZAR.
3. Concerning the Signification of Albuminous Bodies Eliminable by Acetic Acid in the Urine of Children, By L. LANGSTEIN.
4. What Tissue Constituents Simulate Spirochaetae in Inflamed Tissue? By H. FRIEDENTHAL.
5. Investigations of and Clinical Experiences with Liton Bread (Litonbrod), a New Food for Diabetics, By J. BRODSKI.
6. The Application of Light in Dermatology (Continued), By KROMAYER.
7. Concerning the Diagnostic Certainty and the Specificity of the Complement Union Method in Typhus and Paratyphus (Concluded), By J. LEUCHS.
8. Some Remarks Regarding Fever, By H. BEITSKE.

1. **Infection of Milk and the Origin of Primary Intestinal Tuberculosis in Children.**—Fibiger and Jensen have published papers on this subject in 1902 and 1904, and the present article may be considered a continuation of them. During their investigations the authors have held their attention fixed on cases in which it was supposed that the infection was through milk. In the present number two cases are reported in which children, one four months, the other eighteen months old, died of primary intestinal tuberculosis. Both had been fed on raw milk, and in the second case tuberculosis was found in the cows from which the milk had been obtained.

3. **The Significance of Albuminous Bodies Eliminable by Acetic Acid in the Urine of Children.**—Langstein says: 1. There is no postural albuminuria in which albuminoid substances not eliminable by acetic acid are present. They are constantly demonstrable by every test of the urine for albumin. 2. Cases in which the albuminoid substances eliminable by acetic acid are alone excreted differ from the beginning from cases of chronic nephritis. 3. In the chronic nephritis of children the albuminoid substances eliminable by acetic acid are either not present at all, or are present in less quantity than other forms of albumin.

5. **A New Bread for Diabetics.**—Brodski describes *Litonbrod* as a bread made wholly from materials contained in grain which retains the natural taste of bread and yet contains only a small proportion of carbohydrates, from 3 to 10 per cent. He considers it a useful addition to the food for diabetics.

6. **The Application of Light in Dermatology.**—Kromayer reports four cases of recovery from lupus vulgaris under this form of treatment, and begins his report of cases of lupus erythematoses treated in the same way.

7. **The Diagnostic Certainty and the Specificity of the Complement Union Method in Typhus and Paratyphus.**—Leuchs considers this method to be absolutely

accurate, to be specific, and possibly to be more sensible than the methods hitherto employed.

February 1, 1907.

1. Studies in Regard to the *Spirillum Obermeieri*, By C. FRÄNKEL.
2. Experimental Contribution to Wassermann's Serum Reaction of Syphilis, By A. SCHUTZE.
3. Hemiathetosis During Labor, By S. BAUER.
4. Concerning Juvenile Physiological Albuminuria, By B. ULLMANN.
5. The Application of Light in Dermatology (Concluded), By KROMAYER.
6. Concerning Infection of Milk and the Origin of Primary Intestinal Tuberculosis in Children (Concluded), By J. FIBIGER and C. O. JENSEN.
7. The Treatment of Penetrating Gunshot Wounds of the Abdomen in the Field, By HILDEBRANDT.

1. **Studies in Regard to the *Spirillum Obermeieri*.**—Fränkel concludes from his experiments with this spirillum that the recurrent fever of America and the tick fever of Africa are two distinct diseases.

2. **Wassermann's Serumiagnosis of Syphilis.**—Schutze believes that this method of investigation forms, in the hands of a skilful investigator, a valuable addition to the other means we possess for the diagnosis of syphilis.

3. **Hemiathetosis During Labor.**—Bauer reports a case in which a multipara suffered from athetosis of the right side of her body during labor with a complete disappearance of all the symptoms very shortly afterwards. Athetosis has usually been met with in connection with serious troubles of the central nervous system, its course is usually prolonged, and although improvement occurs a cure is hardly to be met with except in hysterical cases. This case seems to be unique, and the author has excluded about all the known causes of the trouble, so that the aetiology is extremely obscure.

5. **The Application of Light in Dermatology.**—Kromayer finds that the hair can be induced to grow again by the use of light in alopecia areata and pityriasis, but the new growth is usually darker than the surrounding hair. He has also obtained satisfactory results from this form of treatment in eczema, acne vulgaris, furuncles, sycosis, teleangiectasia, acne rosacea, and rhinophyma.

6. **Concerning Infection of Milk and the Origin of Primary Intestinal Tuberculosis in Children.**—Fibiger and Jensen strongly insist that the ingestion of raw milk must be considered a prominent exciting cause of primary intestinal tuberculosis in children.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

February 5, 1907.

1. Concerning the Resistance to Anthrax and the Source of Antianthrax Material, By GRUBER and FUTAKI.
2. Concerning Antitoxine and Albumin, By HAMBURGER.
3. Nervous Symptoms During the Passage of the Contents of the Stomach Into the Intestine, By KEHRER.
4. Concerning the Demonstration of Blood in the Faeces, By SCHUMM.
5. Concerning Two Cases of Intestinal Eosinophilia, By FRICKER.
6. Treatment of Twelve Cases of Mastitis with a Suction Apparatus, By HARTMANN.
7. A Case of Subcutaneous Emphysema with Pulmonary Tuberculosis, By KRENCKER.
8. Visible Hypertrophy of the Lips in Hysteria, By BLEIBTREU.
9. Fracture of the Cervical Vertebra and Reflex Rigidity of the Pupil, By BRASSERT.
10. Stenosis of the Pylorus as the Result of a Chronic Suprapapillary Ulcer of the Duodenum. Recovery After Gastroenterostomy, By PICKENBACH.
11. Should the Country Midwives be Equipped with Rubber Gloves? By WALTHER.
12. Lead Boxes for the Röntgen Rays, By SCHIELE.
13. Contribution to the Explanation of the Tuberculin Re-

action Produced by Antituberculin in the Tuberculous Focus, By WEIL.

14. To Professor Leopold Schroetter Ritter v. Kristelli on His Seventieth Birthday, By FRANK.

15. Concerning Hospitals Along the West Coast of South, Central, and North America, By APELT.

1. **Concerning the Resistance to Anthrax and the Source of Antianthrax Material.**—Gruber and Futaki say that the antianthrax substances of the leucocytes, the leucanthrakozidine, seems to be never present in the normal blood plasma of hens or rabbits, that the blood plasma of rabbits or white rats usually exerts absolutely no influence against the anthrax bacilli, but that on the contrary, the blood discs of rabbits and rats differ from those of the guinea pig and the hen in that they contain an abundant quantity of a substance which is energetically fatal to anthrax bacilli. This substance is given up by the blood discs during coagulation, and renders the serum of rabbits and rats bactericidal. It is not impossible that this material may be excreted into the circulating blood under the influence of the anthrax infection in the plasma, and in this way may exercise a marked protective power.

2. **Concerning Antitoxine and Albumin.**—Hamburger finds as the results of his experiments: (1) That the milk of goats and rabbits into whom horse serum has been injected subcutaneously contains antitoxine and horse albumin always associated together; (2) that in the milk of such rabbits it happens in exceptional cases that the horse antitoxine is reabsorbed either not at all or very slightly, and in the latter case the antitoxine can always be demonstrated to be associated with the horse albumin.

3. **Nervous Symptoms During the Passage of the Contents of the Stomach Into the Intestine.**—Keher says that persons who frequently suffer from a feeling of oppression, or from dreams, during the passage of the food from the stomach into the intestine should either eat their suppers early, three or four hours before retiring, or go to bed late, so that this stage may be complete before they begin to sleep. They should also not eat or drink too much, so as to fill the stomach, and what they do take should be easily digestible.

6. **Treatment of Mastitis by Suction.**—Hartmann reports twelve cases of mastitis which he treated by means of a suction apparatus, and presents the following résumé: 1. The suction treatment alleviates the pain and reduces the fever. 2. Fresh, acute cases of mastitis are controlled in from three to five days without incision. 3. Fresh suppurative cases of mastitis recover in from four to seven days after a short incision has been made, all others in from two to three weeks, average sixteen days, a shorter time than has been attained by any other method. 4. The cosmetic as well as the functional result is excellent. 5. The subacute, nodular, nonpurulent forms of mastitis are unsuited for the passive hyperæmia produced by this method of treatment, the active hyperæmia induced by Preissnitz's fomentations followed by massage is preferable. 6. The older cases in which the abscesses have opened spontaneously require the longest period of healing. 7. The immediate appearance of circumscribed great redness of the skin indicates the location of the infiltration or abscess, and so renders it possible to open the abscess early and in the right place. Early diagnosis, especially in regard to the exact localization, as well as the correct therapy is thus best afforded by the suction treatment. 8. Abscesses come quickly to the surface through breaking down of the infiltrate under this treatment. New ones are rarely chargeable to it. 9. Inflammatory "hot" processes soon become "cold." But by early discontinuance of the treatment these may be prolonged, or may retrograde into new "hot" inflammations. 10. Cases which have opened sponta-

neously, or have been incised, and appear to be as good as healed in many cases recommence to suppurate from the old fistulæ under this treatment. 11. Abscesses are always to be incised as soon as possible, because resorption of the pus is not certain to be brought about, although it may take place as a result of the suction treatment. The incisions should be one, two, or three centimetres long. 12. Drainage with gauze or a rubber tube is usually unnecessary, and may be even harmful after the first dressing, and its place is taken by the suction. But in very deep abscesses a thin, long rubber drain may be indicated, because otherwise the canal may heal in the middle and the abscess become reencapsuled thereby. 13. The wound should never be squeezed, suction by means of a suitable cupping glass is much better and is painless. When the wound is occluded by a clot or other material the occluding substance may be removed mechanically or broken up with a probe. 14. The purulent secretion usually ceases under the suction treatment or becomes serous and the wounds thus heal rapidly. Previously indolent granulations become healthy. 15. The margin of the suction apparatus should never press on the inflamed parts, because it will cause pain, press the infectious material into healthy tissue and so protract the trouble. Therefore the cupping glasses to be used in mastitis should have mouths from ten to fifteen centimetres in diameter into which nearly the entire mamma can enter. Smaller cups should be used only occasionally and for very brief periods. 16. The treatment is to be carried out carefully until after the disappearance of the inflammatory symptoms. Even after no more secretion can be removed the hyperæmia produced by this treatment impels to more rapid recovery through the resorption of the infiltrate.

7. **Subcutaneous Emphysema with Pulmonary Tuberculosis.**—Krencker reports a case of spontaneous subcutaneous emphysema which occurred in a woman, twenty-seven years of age, who was suffering from pulmonary tuberculosis. The autopsy did not reveal the origin of the emphysema. It is stated by the author that only one similar case has been recorded.

9. **Fracture of the Cervical Vertebra and Reflex Rigidity of the Pupil.**—Brassert reports the case of a man, forty-four years of age, who sustained a fracture of the second cervical vertebra, as shown by pain on pressure and crepitation, and presented the peculiar and isolated symptom of myosis and loss of reaction of the pupils to light, although their reaction to convergence was preserved. As there were no other associated symptoms this had to be ascribed to a lesion of the cervical spinal cord produced at the time of fracture of the vertebra.

ARCHIVES OF PÆDIATRICS

February, 1907.

1. The Importance of the Estimation of the Caloric Value of Infant Food, By J. J. THOMAS.
2. The Determination of the Caloric Value of Modified Milk, By S. W. MOOREHOUSE.
3. Impaired Resonance Behind and Beneath the Inner Third of the Left Clavicle in Normal Children, By S. McC. HAMILL.
4. The Significance of Albumin and Casts in the Urine of Children, By F. E. SONDERN.
5. Scarlet Fever or Fourth Disease (Filatow-Dukes), Which? By H. ILLOWAY.
6. Acute Alcoholism in Children, with Report of Two Cases, By S. W. MOORHEAD.
7. Whooping Cough: Its Treatment by an Improved Abdominal Belt, By T. W. KILMER.

1. **Estimation of the Caloric Value of Infant Food.** Thomas reminds us that the definition of a calorie is the amount of heat necessary to raise the tempera-

ture of one kilogramme of water one degree (Celsius). A normal adult requires thirty to thirty-five calories a day per kilogramme of body weight, and this can be furnished by any one or all of the three classes of food vicariously. This principle also obtains with respect to the foods used by infants. The requirement during the first three months of life is one hundred calories per kilogramme, during the second three months between one hundred and ninety, while during the latter half of the first year it is eighty or less. A larger supply depends upon very active maternal breasts or upon numerous findings. Very active children or very large children, or premature children demand a much larger number of heat units per kilogramme. If artificial food is used more work is required from the infant than with breast milk. The percentage method of feeding may be made scientific by adding the determination of the caloric values of the various modifications. The caloric value of the food is of more importance to the nutrition of the infant than the exact percentage of the different ingredients, hence its estimation may extend our resources, even to the extent of using simple dilutions of milk with the addition of milk sugar. This is a much simpler and cheaper method than percentage modifications.

2. Caloric Value of Modified Milk.—Moorehouse gives formulas and a diagram for the determination of the caloric value of milk mixtures. He assumes that the food administered must be of a certain nutritive value in that work, heat, repair, and growth of tissues, may be maintained, and this fact is equally important with infants as with adults. The determination of the nutritive value of a dietary is the determination of its caloric value; and its adaptability in a given case is seen by comparing the caloric value of the dietary with the body weight. The determination of the caloric value of infants' food is a simple matter for one who thinks in percentages with reference to feeding with cows' milk. Given the quantity ordered and the percentage in fat, sugar, and proteid, the problem is first to reduce the twenty-four hour quantity to c.c., one ounce being equal to 30 c.c.; then the number of grammes of fat, sugar, and proteid in the mixture is found by multiplying the number of c.c. in the twenty-four hour quantity by the percentage of fat, sugar, and proteid. A gramme of fat furnishes 9.3 calories and a gramme of sugar or proteid 4.1.

3. Impaired Resonance in Normal Children.—Hamilton's attention was called to this area behind and beneath the inner third of the left clavicle in the examination of cases of bronchopneumonia in which he was looking for enlargement of the bronchial glands. It then occurred to him that it might be present in the chests of normal children, and his investigations convinced him that it was to be found in the majority of infants and children in perfect health. It persists throughout childhood, but is especially common in the early and middle periods. In most cases it does not extend beyond the inner third of the clavicle, and it can be elicited by percussion of the clavicle and also of the first interspace below the clavicle. It is better developed when the child is recumbent, but in some cases it is more distinct in the upright position. The explanation is that in early life the posterior portion of the lung brings the great vessels into closer contact with the anterior chest wall. This reduces the elasticity of the chest wall sufficiently to partially deaden the pulmonic resonance beyond the point of contact with the heart and great vessels.

4. Albumin and Casts in the Urine of Children.—Sondern thinks that albumin in the urine of children with or without casts is not the absolute indication of nephritis. Still it often happens that the differentiation between functional and noninflammatory renal disor-

der on the one hand and renal or other constitutional on the other is not possible on the basis of albumin and casts. Repeated urinary examination as well as careful clinical observation will alone decide in these doubtful cases. Albuminuria implies the presence of serum albumin in the urine, and to avoid confusion other forms of albumin should not be called by this name. The significance of the presence of the derived albumina will probably be attributable to a fault in metabolism rather than to renal impairment. No single test for albumin is free from error, hence two methods of detection and differentiation should always be used, and the conditions as to any form of albumin carefully noted in each.

ANNALS OF SURGERY

March, 1907

1. Sarcoma of the Long Bones. The Diagnosis, Treatment, and Prognosis, with a Report of Sixty-nine Cases. By W. B. COLEY.
2. Successful Anterior Thoracotomy for a Foreign Body Impacted in the Bronchus. By I. A. GOLITZ.
3. The Surgical Treatment of Empyema. By S. LLOYD.
4. Cysts of the Omentum. By R. E. FORT.
5. Tuberculosis of the Bladder. By S. WALKER.
6. Drainage of the Knee Joint in Severe Infections by the Transverse Incision. By C. H. PECK.
7. Diffuse Cavernous Angioma of the Upper Extremity. By A. P. C. ASHROFT.
8. Fracture of the Coracoid Process of the Scapula Caused by Muscular Action. By O. H. PETTY.
9. Report of Operations Performed at the Public Clinics for Students at the German Hospital of Philadelphia, During the Session 1905-1906. By J. E. DRYER.
10. Glanders in the Human Subject. Clinical Report of Two Cases Observed in the Fourth Medical Division of Bellevue Hospital, New York. By J. T. PIERCE.

1. Sarcoma of the Long Bones.—Coley discusses this subject from the standpoints of surgical operation as well as treatment by means of mixed toxins. If an operation is indicated he thinks the weight of opinion favors amputation rather than resection. In a large number of the operable cases favorable results were only of short duration. He reports twelve cases in which the mixed toxins were used, eight patients being alive and well from three to eight years after they were thus treated, and the remaining four alive and well from six months to two years since treatment. He thinks this material and these results warrant him in advocating this form of treatment in practically all cases of sarcoma involving the long bones before sacrificing the limb. Treatment for three or four weeks will usually decide whether the result will be favorable or not. Many cases of inoperable sarcoma have been cured by this method, and he thinks the method has passed the experimental stage. The toxins used are those of the bacillus prodigiosus and the streptococcus of erysipelas.

3. The Surgical Treatment of Empyema.—Lloyd speaks of the following methods of operating upon empyema: (1) Aspiration or paracentesis; (2) thoracotomy with or without resection of a rib; (3) the Estlander or Schede operation; (4) the Fowler-Delorme method of decortication of the lung; (5) the Ransohoff method of discission of the pulmonary pleura, which is gridironed with many parallel incisions, a quarter of an inch apart, these incisions being crossed by others obliquely or at right angles. The first two methods are useful in fresh cases in which the lung is not fastened by adhesions. The others are intended for chronic cases in which the lung is collapsed, and in which the chest wall must fall in to meet the lung or the lung must be made to expand and again occupy its proper location. In addition to resecting a sufficient number of ribs the author found it useful to break up all adhesions. He was not troubled by excessive hemorrhage in such procedures, and though

peritonitis was occasionally produced, the opening eventually closed. Proper drainage subsequent to the operation is essential. Of 225 cases operated in, twenty per cent. resulted fatally. Satisfactory cure followed in most of the other cases.

6. Drainage of the Knee Joint.—Peck thinks the proposed operation by transverse incision should not be used in mild or early cases of knee joint infection in which there is hope of recovery with preservation of joint functions. Drainage and irrigation through multiple incisions is preferable in such cases. A distinction should be made between cases in which the crucial ligaments are saved and the limb straightened without resection, the patella or its ligament being sutured, and some degree of function aimed at, and those cases in which avoidance of amputation or of death from sepsis is the object. In the latter class the radical operation suggested by the author is indicated and should be followed by resection as a secondary procedure, except in children. The dressing of the large wound surface in this operation is difficult and painful. One must carefully avoid pressure on the popliteal vessels with its resulting oedema and pressure sores. A splint of at least 45 degrees should be used for flexing the leg. It may be impossible to straighten the limb satisfactorily without resection. The secondary operation should usually be deferred from three to eight weeks.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

March, 1907.

1. Acute Dilatation of the Stomach and Its Relation to Mesenteric Obstruction of the Duodenum,
By L. A. CONNOR.
2. The Operative Treatment of Fractures, Especially of the Long Bones,
By G. T. VAUGHAN.
3. Leucæmic Plaque in a Case of Fracture of the Ankle,
By C. E. SIMON.
4. The Luys Urine Separator,
By B. S. BARRINGER.
5. The Colloidal Nitrogen in the Urine,
By W. M. MAIRIOTT and C. G. L. WOLF.
6. A Comparative Study of the Occult Blood Tests. A New Modification of the Guaiac Reaction. Its Value in Legal Medicine,
By D. M. COWIE.
7. Varicose Arteries of the Aorta and Superior Vena Cava,
By C. CARY.
8. The Nature of the General Toxic Reaction Following Exposure to the X Rays,
By D. I. EDSELL and R. PEMBERTON.
9. Hypertrophy of the Islands of Langerhaus in Diabetes Mellitus,
By W. C. MACCALLUM.
10. Universal Itching Without Skin Lesion. Hæmatogenous Urobilinuria. Malarial Poisoning. Peculiar Erythrocytolysis,
By J. K. MITCHELL and A. R. ALLEN.
11. The Nature of the Vagina,
By E. A. SCHUMANN.
12. Treatment of Diffuse Suppurative Peritonitis,
By J. A. BLAKE.

1. Acute Dilatation of the Stomach.—Connor thinks this condition worthy of wider recognition. It is especially frequent after operations with general anæsthesia, and is usually associated with dilatation of or obstruction in the duodenum. The most frequent cause of the duodenal obstruction is the constriction of its lower end between the root of the mesentery and the vertebral column. This can occur only when the mesenteric root containing the superior mesenteric artery is stretched tightly across the duodenum which becomes possible only when traction is exerted by the small intestine hanging over the brim of the pelvis. This constriction is favored by any condition which facilitates the entrance of the small intestine into the true pelvis and by any condition which renders the duodenum more liable to compression. Dilatation of the stomach would increase the liability to mesenteric obstruction by crowding the intestines into the pelvis. It is uncertain which is the first step in the vicious circle, but in some cases, at least, the duodenal obstruction is primary. The symp-

toms and physical signs of acute gastric dilatation are usually so distinct that its diagnosis is not difficult. The mortality in the cases analyzed by the author was seventy-two per cent., but the disease can usually be controlled and cured if the diagnosis is made and suitable treatment begun before complete collapse of the patient has occurred.

2. The Operative Treatment of Fractures.—Vaughan states that the problem which immediately confronts a surgeon who is called upon to treat a fracture is whether he should or should not operate. Formerly this question never arose unless resection or amputation were to be considered. The Röntgen ray has shown that most fractures in long bones unite by overlapping of the fragments with consequent shortening of the limb. Operative treatment is to be considered, (1) to prevent deformity of a limb, especially shortening, (2) to prevent loss or impairment of function, (3) to obviate delayed union or ununited fracture, (4) to give the soft tissues, nerves, muscles, and bloodvessels an opportunity of repair, (5) and because, as a rule, it is the only way to get a perfect result. It is generally admitted that for a fractured patella or olecranon the operative treatment is the best. The principal dangers which attend the operative treatment are from (1) the anæsthesia, (2) fat embolism which occurs in nearly all fractures of long bones, (3) extensive detachment of the periosteum and other soft parts, and (4) infection.

4. The Luys Urine Separator.—Barringer draws the following conclusions: 1. There are many cases in which catheterization of the ureters is impossible, as when one or both ureteral openings are obscured by cystitis, in which the bladder fluid is clouded by pus or blood, or in which in a normal bladder the ureteral openings cannot be found. In such cases the separator is invaluable. 2. Cystitis is not a barrier to its use, nor to its revealing an exact knowledge of the condition of the kidneys. Exceptions are the cases in which a bacteriological examination is necessary. 3. Separation is simpler than ureteral catheterization. The instrument may be made entirely sterile, and infection of the ureters from the bladder is excluded. 4. In women the discomfort caused by the instrument is about equal to that produced by the cystoscope. In men its use is somewhat more painful. 5. It cannot be used if the bladder holds less than 20 c.c., if the urethra will not admit the instrument, if the base or neck of the bladder is distorted by prostatic hypertrophy, by anterior displacement of the uterus, by tumors, or by cystocele. 6. Slight hæmorrhage may occur if the vesical muscle grasps the instrument and so wounds the mucous membrane. This is shown by blood clots and increase in the fresh red blood cells of both sides.

6. A Comparative Study of the Occult Blood Tests.—Cowie summarizes his work as follows: 1. The stools of those who subsist on ordinary meat diet seldom react to the occult blood tests. A reaction in such cases would mean some pathological process in the gastrointestinal tract. 2. From 10 to 20 grammes of uncooked meat should be eaten to obtain a reaction from such a source. 3. A hæmorrhage from the stomach or œsophagus must amount to at least 1 gramme in order to give a decided reaction. 4. The reaction occurs in the first stool after the ingestion of blood or food containing free blood, seldom in the second stool. It may occur in from ten to twenty-one hours. 5. The guaiac reaction is more sensitive if water equal in quantity to the ether extract is added before the addition of guaiac and turpentine. 6. If blood is present in minute quantity a great variety of results may be obtained by all tests, with the same quantity of blood, if experiments are made on successive days. 7. The water modification is more sensitive than the Weber, Boas, or Klunge tests, and the guaiac test is more sensitive than

the album. 8. A gradually appearing redening color is the crucial test of a positive reaction. 9. In medicolegal cases the water modification of the guinea reaction is found more sensitive than the Taylor method in determining the nature of minute stains on articles of clothing, paper, etc.

8. Toxic Reaction and the X Rays.—Edsall and Pemberton sound a warning against the incautious use of x rays, not only because of the possible deleterious effect upon the skin, but because serious or fatal conditions may result with indications of acute intoxication. Three cases of severe reaction after a single exposure are narrated, two of them being fatal. The study of these cases showed that metabolism had been profoundly influenced by the exposure. There was a sudden drop in the excretion, followed by an equally sudden and excessive rise. The explanation which is offered is that great tissue destruction occurs immediately after exposure. The organism is then overwhelmed with a volume which it cannot immediately throw off. Metabolism, therefore, is checked, and the retention of the disintegrated material produces the signs of acute intoxication. Individuals who are already toxæmic are especially liable to be overwhelmed by such a process, particularly since the tissue destruction produced by x rays involves tissues rich in melecprotein. The danger of intensifying preëxisting kidney disease by the use of x rays must be especially apparent.

12. The Treatment of Diffuse Suppurative Peritonitis.—Blake considers in this category only those cases in which there is definite purulent exudate extending through the greater part of the peritoneal cavity and accompanied with definite signs of diffuse undefined peritoneal inflammation. The treatment which is described has two phases, the operative and the post-operative. The principles of the former include (1) rapid removal through a small incision of the origin of the inflammation; (2) irrigation of the peritoneal cavity; (3) as little drainage as possible with no attempt to drain the general peritoneal cavity. Objections to the irrigation of the cavity offered by some writers have not been sustained by the author's experience, and he believes it undesirable that such foreign material as is washed out should be retained. The fluid which is introduced is rapidly removed by siphonage. A small drainage tube is left within the wound, the patient is placed in bed in the Fowler position and copious rectal salines are subsequently used every few hours. Morphine is not given after the first twenty-four hours, nor is early catharsis employed. Of the seventy-eight cases in which the treatment here outlined was employed the mortality was 19.2 per cent., but the cases were unselected and the author's policy was not to refuse the hope which might result from an operation.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN PUBLIC HEALTH.

Meeting of March 12, 1907.

Dr. J. S. BILLINGS, JR., in the Chair.

MILK AND DISEASE.

Milk as a Carrier of Infection.—Dr. CHARLES HARRINGTON, secretary of the Massachusetts State Board of Health, read a paper in which he said that tuberculosis was the only disease which was common to both the bovine and the human species, but that milk might be a carrier of other infections with which it became contaminated after leaving the udder. He said that it was now fifty years since typhoid fever had first been

traced to milk as a source of infection. Other diseases which had been conveyed by milk were dysentery, diphtheria, scarlet fever, and that group of diarrheal diseases known as cholera infantum. Of these the most important was typhoid fever. During the past two years there had been eighteen outbreaks of this disease in the five cities of Boston, Cambridge, Somerville, Lynn, and Everett, of which fourteen were directly traceable to milk. Under a suitable and stringent State supervision, Dr. Harrington believed the majority of these outbreaks could have been avoided. An ideal condition would be the careful examination of every attendant connected with the collection and distribution of the milk. Such a supervision would be manifestly impracticable. One of the difficulties in preventing typhoid infection was due to the fact that many patients became chronic carriers of the bacilli long after they had been cured and occasionally, even without any previous history of typhoid fever. Some cases had been recorded in which the bacilli were excreted in the feces forty-two years after the patient had recovered from an attack of typhoid. Tolerant of the typhoid bacilli was readily established, and it might therefore happen that the employees on a dairy farm drank with impunity contaminated water which would cause a serious outbreak among the consumers of milk which had become contaminated with this water. Diphtheria, not being a water borne disease, was rarely conveyed through the milk supply. Scarlet fever, while not water borne, was more apt to be conveyed through milk than diphtheria, as the bacilli were widely distributed in the desquamative stage. In a large proportion of outbreaks of this disease the evidence was fairly conclusive against milk having been a factor in the distribution. In Boston and vicinity during the first three weeks of this year 717 cases of scarlet fever were reported in a population of about 800,000. The infection was traced through the milk supply to a man who tasted a spoonful of the milk and then put the spoon, which had been in his mouth, into the next batch of milk without rinsing it. This man had symptoms of scarlatinal infection, and his child was found to be in the desquamative stage of the disease. Dr. Harrington said that the principal difficulty lay with the indisposition of the public to pay the price which really clean milk costs. He believed that clean milk was the real remedy for any trouble which might exist in milk as a carrier of infection.

The Advantages and Disadvantages of Pasteurization to the Consumer.—Dr. ROWLAND G. FREEMAN discussed this phase of the subject, taking the ground that efficient pasteurization, in which the milk was kept in the bottle in which it was pasteurized until it reached the consumer, was of advantage, but that so called commercial pasteurization was a disadvantage, as this process was resorted to by dealers merely to destroy the lactic acid bacteria, the presence of which constituted a safeguard to the consumer, as the lactic acid fermentation gave notice of unfitness for use. Dr. Freeman's paper will be published in fully in an early issue of the *Journal*.

The Advantages and Disadvantages of Pasteurization to the Municipality.—Dr. JOSEPH ROBY, of Rochester, said that the present demand for a label on food products which told the whole truth about them should extend to the milk supply. It was not sufficient merely to label the milk as "pasteurized," but its label should bear full information as to when and how the pasteurization was effected. To be really effective, pasteurization should involve subjection to a temperature of 80° C. (176° F.) for fifteen minutes. He believed that pasteurization would have prevented three out of five outbreaks of typhoid fever which had occurred in Rochester, but the same results would have been accomplished by the dissemination among the farmers

of proper knowledge of the principles of hygiene. Dr. Roby said that bottle infection was one of the most potent factors in the transmission of disease through milk, and that if pasteurization was to be resorted to, the bottles themselves should be carefully sterilized. He did not favor pasteurization, as he believed general pasteurization would make milkmen careless, for they would feel that whatever infections might be borne by the milk would be destroyed by the pasteurization. Rochester was probably unique in feeding raw milk to the children of the poor, in whom the death rate had decreased materially since the use of certified raw milk had been adopted. He said that one serious objection to the use of pasteurized milk was that the intestinal tract seemed to lose its powers of resistance to bacterial infection when the patient had been fed for some time on pasteurized milk. He proposed as a substitute for pasteurization a systematic effort to obtain clean milk. He believed this could be done by substituting a smaller can for milk shipments. This can (twenty quarts capacity) should be sterilized at the creamery and provided with a cheesecloth strainer, which should not be removed by the farmer at all. The milk should be put directly into this, covered closely without the removal of the strainer, and immediately put on ice, and then shipped direct to the creamery, or, if possible, to the consumer. If the public was willing to accept the naturally wide variations in milk fats and solids, these cans could be shipped directly to the consumer. He suggested that an effort should be made to secure immunized cattle for milk production.

Current Misstatements and Fallacies Regarding Milk and Milk Supplies in New York.—Dr. WILLIAM H. PARK said that the title of his remarks, which were impromptu, was not of his own choosing, though there were many misstatements current which should be corrected. The dangers from milk had been much exaggerated, and the public press had made all sorts of wild statements as to the reduction in infectious diseases which might be expected to follow the pasteurization of the milk supply. As a matter of fact, Dr. Park said, only a very small proportion of the cases of infectious disease were due to milk, and therefore the pasteurization of the milk supply, even if it accomplished all that its most ardent advocates alleged for it, could not materially reduce the number of cases of infectious diseases. Dr. Park then reviewed the principal infectious diseases, showing that the germs of diphtheria did not grow below 70° F., and so would not develop at all during the winter months in milk. Neither measles, smallpox, nor chickenpox had been conveyed by milk. While a large proportion, possibly twenty-five per cent., of the milk cows had some tuberculous lesion, and would therefore react to tuberculin, their milk did not contain tubercle bacilli except where the tuberculous lesion was in the udder, which was the case in only a very small proportion of the animals. Typhoid fever germs would grow very, very slowly at 30° C., and so did not develop rapidly in milk which was kept cool. Dr. Park said the present outcry about pasteurization was purely hysterical. He directed attention to the following tables showing the results of pasteurization:

The plain milk unheated contained 300,000 colonies to each cubic centimetre.

	140	145	150	155	160°	165°	170°	175	180
30 seconds	2680	2400	2100	1080	860	270	130	30	20

Sterilized milk with cultures added:

	Milk Left 24 Hours After Pasteurization.			
	Kept in ice box		Kept at room temp.	
	Typhoid, Diphtheria.		Typhoid, Diphtheria.	
Controls	1,500,000	280,000	6,500,000	600,000
Cultures Made Directly After Pasteurization.				
	Typhoid.		Diphtheria.	Colon.
Controls	1,380,000		57,000	3,000,000

He believed that pasteurization, properly applied, was desirable, but inspection was much more efficient, though the cost would be enormous and the public would have to pay this cost in the increased price of milk.

In the discussion which followed the presentation of these papers, Dr. L. EMMETT HOLT reviewed the history of milk inspection in New York, which first became general in 1896. He said that it was an error to suppose that milk was a source of infection among infants to any great extent, for children suffered but little from infectious diseases until they were old enough to attend school, when they contracted diseases by coming in contact with other children. Tuberculosis, the infectious disease most common among children, was almost invariably traceable to some relative in whose care the child had been left. Moreover, tuberculosis most commonly attacked the brain or the lungs of children. Tuberculosis of the intestinal tract was exceedingly rare, whereas, if the disease was conveyed through the food, it would be in the intestinal tract that it should be looked for.

Dr. LINSLEY R. WILLIAMS said that the conclusion reached at the milk conference held last fall was that what was needed was clean raw milk. The newspapers had stated that the death rate among the children of the city would be reduced sixty per cent. by pasteurization. This was manifestly absurd, the death rate from tuberculosis among the children in Japan being about the same as in this country, though Japan had only about forty cows per 10,000 population, giving about two or three drops of milk a day for each inhabitant. He said that the enforcement of the law requiring the inspection and slaughtering of tuberculous cattle was the ideal method of procedure, but, as a rough calculation showed that this would cost the State about \$6,000,000, it was hardly practicable to consider.

Dr. SIMON BARUCH briefly reviewed the history of milk pasteurization, and urged that all milk used for infants should be pasteurized and all used for adults boiled.

Book Notices.

The Pathology of the Eye. By J. HERBERT PARSONS, B. S., B. Sc., F. R. C. S., Assistant Ophthalmic Surgeon, University College Hospital, etc. Volume III. Part I, General Pathology. New York: G. P. Putnam's Sons, 1906. Pp. x-771 to 1128.

The third volume of Parsons's monumental work is devoted mainly to congenital anomalies of the eye as a whole, and its various structures and to the broad subjects of circulation and nutrition. There are chapters on the anatomical and physiological anomalies dependent on errors of refraction, and there is a complete exposition of the normal intraocular pressure and of glaucoma. A separate chapter is devoted to the theory of immunity. The author's wide experience and painstaking study of the entire field of literature combine with clear diction and a profusion of illustrations to make an invaluable reference handbook.

Travaux de chirurgie anatomo-clinique. Par HENRI HARTMANN, Professeur agrégé à la Faculté de médecine, chirurgien de l'Hôpital Lariboisière, membre de la Société de chirurgie. Avec la collaboration de P. LECÈNE et J. OKINCZYK, Anciens internes lauréats des hôpitaux (médaillés d'or), prosecteurs à la faculté. Troisième série. Chirurgie de l'intestin. Avec 153 figures. Paris: Georges Steinheil, 1907. Pp. 453.

As in the two preceding volumes, the first section

of this volume gives a brief resume of the statistics of the Civile division of the Lariboisière, in which in the year 1903 to 1904 there were 400 operations, of which thirty (6.4 per cent.) terminated fatally; the fatal cases are analyzed in regard to the cause of death. A note of interest is that, of 421 instances of general anaesthesia, in 412 chloroform and in nine bromide of ethyl was the anaesthetic. One death, that of a patient who had an enormous renal tumor, was due possibly to the chloroform.

The second section is an interesting monograph on intestinal and gastrointestinal anastomoses, which he divides into laterolateral, terminoterminal, and terminolateral, according to the portions of the intestine involved.

The third section describes exclusion (short circuiting) of the intestine, which is divided into incomplete and complete, the latter being subdivided into bilateral and unilateral. Dr. J. Okinczyc, a laureate of the hospital, contributes sections on the surgical anatomy of the colon, the pathological anatomy of colon tumors, and a clinical study of the latter. Hartmann is the author of the section on the surgical treatment of cancer of the colon; he omits reference to Tuttle's work, which compares favorably with that of Mikulicz.

The last section, by Dr. P. Lecène, describes sarcoma of the jejunum and ileum.

The illustrations are admirable, but the book unfortunately has no index.

Surgery. Its Principles and Practice. By Various Authors. Edited by WILLIAM WILLIAMS KEEN, M. D., LL. D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Volume I. With 261 Text Illustrations and 17 Colored Plates. Philadelphia: W. B. Saunders Company, 1906. Pp. 983. (Price, cloth, \$7.00; half morocco, \$8.00.)

The editor of this new work has been among the foremost of our surgeons and has kept himself in touch with all the correlated branches of medicine that are so important to the modern surgeon. Consequently the work was likely to be completely up to date.

The volume begins with an historical sketch of surgery, by Dr. James G. Mumford, who gives a brief and interesting account of the lives of those master surgeons who have developed the science to its present status. This is followed by a chapter on surgical physiology in which Dr. George W. Crile considers the circulation, respiration, and muscular system in their relationship to surgical procedures. Dr. John C. Da Costa, Jr., is the author of the chapter on examination of the blood, which he considers of real value in surgery if it is sanely interpreted and if the surgeon always correlates the blood report with the other clinical symptoms. Dr. Ludvig Hektoen writes on infection and immunity, and summarizes the specific microbic causation of infection, the various forms of infectious microorganisms, the sources and ways of infection, the mechanisms of pathogenic microbic action, resistance and virulence, immunity, the formation of antibodies, and serum therapy.

Dr. John G. Adami is the author of the chapter on inflammation, which in this section he defines, with Burdon Sanderson, as "the series of local changes that constitute the reaction to injury to, or irritation of, a part." The topic has been handled admirably, the presentation of the most recent views and experiments being given clearly and tersely. The sequelæ of inflammation, suppuration, abscess, and fistula are reviewed in a chapter by Dr. Leonard Freeman, who is also the author of the chapters on ulceration and ulcers, and on mortification, or gangrene, all of which are well written and expound the best methods of treatment of the several conditions referred to.

The chapter on the process of repair is by Dr. F. C. Wood, who describes the processes by which injured tissues are restored to a condition more or less approximating the normal.

Dr. Charles H. Frazier is the author of the chapters on thrombosis and embolism, erysipelas, tetanus, diseases caused by special infections, diseases directly derived from animals, insects and reptiles, and scurvy. It will be of value, as the author emphasizes Franke's teaching, that the erysipelas patient is no more dangerous as a source of contagion to his fellow patients than one with a suppurating wound of the hand, so long as there is proper antisepsis. The idea of extreme isolation for such patients is disappearing slowly, but there is hope that the newer generation of surgeons may spread the teaching. As this author states truly, when tetanus symptoms appear, the patient is not beginning to have the disease, but is beginning to die from it; therefore where there is the least reason to suspect infection, give the antitoxine and, if it is unavailable, resort to Bacelli's or the carbolic acid treatment.

The chapter on traumatic fevers has been written by Dr. Eugene A. Smith, who urges a revision of the nomenclature and suggests that the terms traumatic aseptic fever, septicæmia, and pyæmia will designate the several fevers properly.

The chapter on rickets Dr. Edward H. Nichols has made brief because this is a condition for medical rather than surgical treatment.

Dr. John C. Da Costa has written an excellent chapter on surgical tuberculous disease in which he describes the ætiology, avenues of infection, pathology, etc., the most recent methods of treatment being considered.

The chapters on chancroid and syphilis are by Dr. Edward Martin, who considers the *Treponema pallidum* as an ætiological factor in syphilis.

Dr. Bland Sutton has written the chapter on tumors, and gives his excellent and reasonable classification. He summarizes thus: "The baneful effects of innocent tumors depend entirely on their environment, but malignant tumors destroy life whatever their situation." He thinks that the embryonic theory is now discarded as an explanation of the origin of cancer and commits himself to some microparasite as the cause.

In the chapter on wounds, contusions, shock, and collapse, Dr. George W. Crile embodies his own important investigations in shock.

The illustrations are exceptionally good, the colored plates being very fine. This first volume gives promise of a most valuable addition to surgical literature.

BOOKS, PAMPHLETS, ETC., RECEIVED

Auscultation and Percussion, Together with the Other Methods of Physical Examination of the Chest. By Samuel Gee, M. D., Fellow of the Royal College of Physicians, etc. Fifth Edition. London: Smith, Elder & Co., 1906.

On the Synthesis of Protein Through the Action of Crystin. By Altona E. L. Taylor. Berkeley: The University of California Press.

A Text Book of the Practice of Medicine. For Students and Practitioners. By Hobart Amory Hare, M. D., B. Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia, etc. Second Edition. Revised and Enlarged. Philadelphia: Lea Brothers & Co., 1907.

Diseases of the Nose and Throat. By J. Bruce Ferguson, M. D., Instructor in Diseases of the Nose and Throat in the Postgraduate Medical School and Hospital, New York. Series edited by Victor Cox Pedersen, A. M., M. D., Lecturer in Surgery at the New York Polyclinic Medical School and Hospital. Philadelphia: Lea Brothers & Co., 1906.

Alcohol. The Sanction for Its Use Established and Popularly Expounded by a Physiologist. Translated from the German of Dr. J. Starke. New York: G. P. Putnam's Sons, 1907.

Miscellany.

A Surgeon's Criticism of Gynecology.—Bassett calls attention to a recent article entitled "Unnecessary Operations Upon Women," in which gynecologists as a class are rather severely taken to task for the excess of their zeal in operative work. The author thinks the criticisms not well founded, and that specialties are a necessary result of the evolution of society. In fact, he reminds the critic, who is evidently a general surgeon, that general surgery and internal medicine are specialties, not less than gynecology. The author thinks the gynecologist has excited the dislike of the general surgeon, not because he has not done much work, original work, but because he, more than any other specialist, stands in the way of the surgeon's economic interest. The critic of gynecology makes the broad statement that of the surgical work performed upon women, especially by those who limit themselves to such work, thirty per cent. is unnecessary and unwarranted. Without citing his proof for this assertion he asks: Are these operators dishonest, are they ignorant, or are they misguided surgical enthusiasts? He answers his questions by saying that some are in each class, and that the principal offenders are gynecologists. It would seem to the author that both the judgment and the operative skill of the gynecologist, in his field, should call forth more confidence than is due to the general surgeon, who is often an amateur in gynecology.—*The American Journal of Obstetrics*.

An International Language.—A decided impetus has been given to the study of the new international language, Esperanto, by the active propaganda undertaken by the *North American Review*, and already several hundred members have been enrolled in the American Esperanto Society. No language intended for international use of the same simplicity of grammar as that of Esperanto has ever been invented, and we can think of no class of educated persons which is so likely to derive so much benefit from a knowledge of its vocabulary as pharmacists. After half an hour's study of the grammar and a few months' acquaintance with the literature of Esperanto, the pharmacist who cares to do so can bring himself into relationship, not with the people of one nation, nor of one tongue, not with Europeans only, but with the inhabitants of every continent; for Esperanto is now written and spoken in Russia, Germany, Norway, Sweden, Brazil, Peru, and in nearly every country where education prevails. Journals in the language are published in France, Germany, Sweden, Holland, Bulgaria, Russia, England, America, and in many other countries. The pharmacist who knows Esperanto is in a position to communicate with pharmacists in foreign countries who may be making researches along lines in which he is interested, and some day doubtless a pharmaceutical journal in Esperanto will be published, to form a common ground for the exchange of opinions among the pharmacists of the world, without regard to language or nationality. All who are interested in the study of Esperanto are invited to communicate with the associate editor of this journal.—*American Druggist and Pharmaceutical Record*, February 25, 1907.

The Erection of a Monument to Theodor Schwann.—On the 7th of December, 1910, a century will have elapsed since the day that Theodor Schwann was born at Neuss on the Rhine. His native town has resolved to raise to this great son of hers a monument to be unveiled on that memorable day. An appeal to the public having been made to this effect by the physicians of the Rhine country and the medical faculty of the University of Bonn, a considerable sum of money

has been contributed both by the inhabitants of Neuss and especially by the physicians of Rhineland and Westphalia. A primary fund for the realization of the project being thus secured by his countrymen, we may be pardoned if we address to the biologists and especially to the physicians all the world over the urgent request, to enable us by their generosity to accomplish a work destined to glorify one of theirs, and of whom they may feel justly proud. Theodor Schwann's merit, we need scarcely say, is so eminent, that it has been equalled by few savants, surpassed by none. It was he who, sixty-five years ago, joined his efforts to those of M. J. Schleiden, and under the auspices of his master, Johannes Müller, he was the first to substantiate the cellular theory. In the course of time he proved to be a pioneer no less successful than indefatigable in the domains of histology, physiology, and biology; an authority on the processes of fermentation, decomposition, spontaneous generation, and digestion, and last, not least, the discoverer of pepsin. Every gentleman and friend of scientific progress satisfies, therefore, but a duty of honor in contributing for a monument in honor of Schwann. Whosoever had the good fortune of knowing this modest man in his life and of looking in his gentle and intelligent eye, will know that his heart was not set on exterior things. Ever ready to acknowledge the merit of others, he aspired to no honors for himself: all the more reason to honor him in his death. To his immortal master, Johannes Müller, a statue of bronze has been lately erected in his native town of Coblenz; his collaborator Schleiden has been similarly honored at Jena, the chief scene of his labors. Let us, therefore, not be remiss in discharging our debt of gratitude to Schwann, whose name is linked preeminently and forever to the substantiation of the cellular theory, one of the greatest achievements of modern science. Contributions are, please, to be addressed to the Städtische Sparkasse zu Neuss am Rhein, Schwanndenkmal, Germany.—*Science*, February 1, 1907.

Popular Medicine in the Eighteenth Century.—Eben C. Hill writes in the *Johns Hopkins Hospital Bulletin*: . . . in looking through some old medical books I found a small leather bound volume written by John Wesley, M. A., during the middle part of the eighteenth century, a few extracts from which will give an interesting survey of the popular *materia medica* of his time. The work was intended more especially to aid the clergy in meeting the frequent demands of their flock in cases where physicians were not easily accessible. It met with greater popularity than was anticipated by its author, however, and the book passed through twenty or more editions. The purpose of the work is characteristically set forth in the preface, and although throughout the treatise the good Wesley maintained a scientific attitude, yet it has many quaint touches of theology. . . . John Wesley says: "As to the manner of using the medicines here set down I should advise: As soon as you know your distemper (which is very easy, unless in a complication of disorders, and then you would do well to apply to a physician that fears God): First. Use the first of the remedies for the disease which occurs in the ensuing collection (unless some other of them be easier to be had, and then it may do just as well). Secondly. After a competent time, if it takes no effect, use the second, the third, and so on. . . . Third. Observe all the time the greatest exactness in your regimen or manner of living. . . . Drink only water if it agrees with your stomach; if not, good, clear, small beer. Above all, add to the rest (for it is not labor lost), that old unfashionable medicine—prayer.

Then follow some general rules of life, among which we find:

"Malt liquors (except clear, small beer, or small ale, of a due age), are exceedingly hurtful to tender per-

soms. Such persons ought constantly to go to bed about nine and rise at four or five. Those who read or write much, should learn to do it standing; otherwise it will impair their health."

In the postscript to a more recent edition published in 1755 we find expressions of pleasurable surprise at the popularity of the book, and in mentioning the additions to this new edition there is an interesting apology for the omission of certain "strong drugs." He writes:

"It is because they are not safe, but extremely dangerous, that I have omitted together with antimony the four Herculean medicines—opium, the bark, steel, and most of the preparations of quicksilver. Herculean indeed! Far too strong for common men to grapple with. How many fatal effects have these produced, even in the hands of no ordinary physicians? And whereas quicksilver, the fifth, is in its native form as innocent as bread or water; has not the art been discovered so to prepare it as to make it the most deadly of all poisons? . . . But they have not yet taught them how to wound at a distance; and honest men are under no necessity of touching them, or coming within their reach.

"In uncommon or complicated diseases, where life is more immediately in danger, I again advise every man, without delay, to apply to a physician that fears God. . . . From one who does not, be his fame ever so great, I should expect a curse rather than a blessing.

After this excellent advice follows the "collection of receipts." Those remedies which the good Wesley from personal experience could recommend were marked with an asterisk. The diseases are arranged alphabetically, and I have selected a few at random. The cold bath and drinking water either sitting or standing seemed to be the most frequently prescribed, though being "electrified" seemed to have produced most satisfactory results. There is no explanation of just how this was to be done, but it was almost a panacea. Most of the remedies could be obtained in the woods, and it was not necessary to go to an apothecary. Indeed, there seemed to be as much dread of this compounder of drugs as of his godless colleague, the physician. For "perhaps he has not the drug prescribed by the physician and so puts in its place what will do as well. Perhaps he has it, but it is stale and perished; yet you would not have him throw it away. Indeed, he cannot afford to." So Wesley prescribes those remedies which are easily obtained.

The delightful simple way in which consumption is disposed of would indicate that the many tuberculosis conferences held in recent years were useless, for the following simple remedies have cured "many deep consumptives":

"One in a deep consumption was advised to drink nothing but water, and to eat nothing but water gruel, without salt or sugar. In three months' time he was perfectly well. Or, take a pint of skimmed milk, with half a pint of small beer. Boil in this whey about twenty ivy leaves, and two or three sprigs of hyssop. Drink over night half, the rest in the morning. Do this if needful for two months daily. This has cured in a desperate case. Tried.

"Or, take a cow heel from the tripe house already dressed, two quarts of new milk, two ounces of isinglass, a quarter of a pound of sugar candy, and a trace of ginger. Put all these in a pot, and set them in an oven after the bread is drawn. Let it continue there till the oven is near cold and let the patient live on this. I have known this to cure a deep consumption more than once.

"Or, every morning cut up a little turf of fresh earth, and lying down, breath into the hole for a quarter of an hour. Tried. Mr. Masters, of Evesham, was so far gone that he could not stand alone. I advised him

to lose six ounces of blood each day for a fortnight, if he lived so long, and then every other day, for the same time. In three months he was well.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following tables of smallpox, scarlet fever, diphtheria, and other diseases reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending March 11, 1907.

Places.	Date.	Cases.	Deaths.
<i>Smallpox—United States</i>			
California—Los Angeles	Feb. 16-23	2	1
Florida—Jacksonville	Feb. 16-23	1	0
Georgia—Augusta	Feb. 19-26	2	1
Indiana—Indianapolis	Feb. 17-24	1	0
Indiana—La Fayette	Feb. 18-25	2	1
Iowa—Cedar Rapids	Feb. 1-28	1	0
Iowa—Des Moines	Feb. 14-28	3	0
Iowa—Des Moines	Nov. 22-Feb. 22	16	1
Iowa—North English	Dec. 1-Feb. 10	75	0
Louisiana—New Orleans	Feb. 15-22	8	1
Michigan—Detroit	Jan. 26-Feb. 2	8	0
Michigan—Detroit	Feb. 9-23	13	0
Missouri—St. Joseph	Feb. 16-23	25	0
Missouri—St. Louis	Jan. 26-Feb. 2	1	0
New York—New York	Feb. 16-23	1	0
North Dakota—General	Sept. 1-30	4	1
North Dakota—General	Oct. 1-31	134	0
Ohio—Cincinnati	Feb. 22-Mar. 1	1	0
Oregon—Milton	Jan. 10-Feb. 23	10	0
Pennsylvania—Homestead	Feb. 14-28	2	0
South Dakota—Sioux Falls	Feb. 16-23	1	0
Washington—Spokane	Feb. 16-23	10	0
Washington—Tacoma	Feb. 2-9	1	0
Wisconsin—La Crosse	Feb. 16-23	1	0
Wisconsin—Milwaukee	Feb. 16-23	9	0
<i>Smallpox—Foreign</i>			
Africa—Cape Town	Jan. 12-19	1	0
Argentina—Buenos Aires	Jan. 5-12	7	0
Brazil—Rio de Janeiro	Jan. 13-20	3	1
Canada—Nova Scotia, Digby	Feb. 23	Present	0
Canada—Nova Scotia, Halifax	Feb. 16-23	1 Imported	0
Canada—Nova Scotia, Toronto	Feb. 16-23	on ss. 2	0
Canada—Nova Scotia, Yarmouth	Feb. 23	Present	0
Chile—Coquimbo	Feb. 2	25	1
Chile—Iquique	Feb. 2	Present	0
China—Hongkong	Jan. 12-19	3	2
Ecuador—Guayaquil	Jan. 1-31	24	2
Ecuador—Guayaquil	Jan. 26-Feb. 9	3	0
France—Paris	Feb. 2-9	7	0
Great Britain—Bristol	Feb. 2-9	2	0
Great Britain—Cardiff	Feb. 2-9	1	1
Great Britain—Liverpool	Feb. 2-9	1	0
Great Britain—Manchester	Feb. 2-9	1	0
Great Britain—Southampton	Feb. 2-9	1	1
Italy—General	Jan. 31-Feb. 7	8	0
Luxemburg—Canton Remich	Jan. 26-Feb. 9	12	0
Madeira—Funchal	Feb. 10-17	1	0
Mexico—Aguas Calientes	Feb. 9-16	1	8
Netherlands—Flushing	Feb. 9-16	2	0
Persia—Gilan Province	Nov. 1-30	Present	0
Persia—Kermanshah	Nov. 1-30	Present	0
Persia—Mash Had	Dec. 31	Present	0
Persia—Tourbat-i-Haidari	Oct. 1-Nov. 20	56	0
Russia—Odessa	Feb. 2-9	19	1
Russia—St. Petersburg	Jan. 26-Feb. 2	1	0
Spain—Seville	Jan. 1-31	22	0
<i>Yellow Fever—Foreign</i>			
Ecuador—Buenay	Feb. 13	1	0
Ecuador—Durán	Feb. 14	Present	0
Ecuador—Guayaquil	Jan. 1-31	22	0
Ecuador—Guayaquil	Jan. 26-Feb. 9	1	0
Ecuador—Huaqui	Feb. 8	1	0
<i>Cholera—Foreign</i>			
India—Bombay	Jan. 22-29	2	0
India—Calcutta	Jan. 14-22	2	0
India—Madras	Jan. 19-25	2	0
India—Rangoon	Jan. 12-19	6	0
<i>Plague—Foreign</i>			
Brazil—Rio de Janeiro	Jan. 13-20	9	3
Chile—Antofagasta	Feb. 2	8	2
China—Tientsin	Jan. 31	Epidemic	0
Egypt—Alexandria	Feb. 1-6	1	0
Egypt—Ismaidia	Jan. 28-29	2	1
Egypt—Suez	Feb. 5	1	0
Egypt—Assiut Province	Jan. 29-Feb. 6	3	0
India—Bombay	Jan. 22-29	51	0
India—Rangoon	Jan. 12-19	18	0
Japan—Formosa	Dec. 1-31	202	184
Maritimus	Dec. 6-20	44	28
Peru—Callao	Jan. 14	1	0
Peru—Callao	Jan. 14	8	2
Peru—Callao	Jan. 14	16	10
Peru—Lima	Jan. 14	3	0

Puerto Rico	Jan. 14	2	1
Puerto Rico and San Pedro	Jan. 14	30	10
Puerto Rico	Jan. 14	5	3
Puerto Rico	Jan. 14	21	12
Turkey in Asia	Jan. 11-20	17	16

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the United States Public Health and Marine Hospital Service, for the seven days ending March 6, 1907.

- BURKHALTER, J. T., Passed Assistant Surgeon. Granted leave of absence for two days in February, 1907, under the provisions of paragraph 101 of the Regulations.
- DE VALIN, HUGH, Assistant Surgeon. Granted leave of absence for one day, under the provisions of paragraph 191 of the Regulations.
- FROST, W. H., Assistant Surgeon. Granted leave of absence for one day.
- HALL, L. P., Pharmacist. Granted leave of absence for seven days, from March 2, 1907, under the provisions of paragraph 210 of the Regulations.
- KENNARD, K. S., Acting Assistant Surgeon. Granted leave of absence for one day in February, 1907, under paragraph 210 of the Regulations.
- McLARTY, A. A., Acting Assistant Surgeon. Granted leave of absence for thirty days, from February 26, 1907.
- ROSENAU, M. J., Passed Assistant Surgeon. Directed to proceed to Harrisburg, Pa., for special temporary duty, upon completion of which to rejoin his station in Washington, D. C.
- SALMON, T. W., Assistant Surgeon. Granted leave of absence for one day in February, 1907, under the provisions of paragraph 191 of the Regulations.
- STEARNS, H. H., Acting Assistant Surgeon. Granted leave of absence for two days in February, 1907, under the provisions of paragraph 210 of the Regulations.
- STONER, G. W., Surgeon. Granted leave of absence for two days in February, 1907, under the provisions of paragraph 189 of the Regulations.
- WILSON, J. G., Acting Assistant Surgeon. Granted leave of absence for three days in February, 1907, under the provisions of paragraph 210 of the Regulations.
- WILSON, R., Acting Assistant Surgeon. Excused from duty for a period of fifteen days, without pay, from March 16, 1907.

Promotion.

- ALLEN, G. C., Pharmacist. Promoted to pharmacist of the first class.
- ROGERS, E., Pharmacist. Promoted to pharmacist of the first class.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army for the week ending March 9, 1907:

- CARROLL, JAMES, Major and Surgeon. Appointed a surgeon, with the rank of major, from March 2, 1907.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending March 9, 1907:

- HYDEN, R., Assistant Surgeon. Appointed an assistant surgeon from March 5, 1907.
- JENNESS, B. F., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from November 11, 1906.
- PLUMMER, R. W., Passed Assistant Surgeon. Detached from the *Denver* and ordered to the Chicago Recruiting Station.
- SCHWERIN, L. H., Acting Assistant Surgeon. Ordered to additional duty on Board the *Florida*; detached from temporary duty on board the *Florida* on March 6th, and ordered to resume duties in the Naval Hospital, Norfolk, Va.
- SHAW, H., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from October 28, 1906.
- SMITH, F. W., Assistant Surgeon. Appointed an assistant surgeon from March 5, 1907.

- STEEP, J., Passed Assistant Surgeon. Detached from the *Denver* and ordered to the Chicago Recruiting Station.
- VALZ, E. V., Assistant Surgeon. Appointed an assistant surgeon from March 5, 1907.

Births, Marriages, and Deaths.

Born.

- TRUBY.—In San Francisco, California, on Tuesday, February 26th, to Dr. Albert E. Truby, United States Army, and Mrs. Truby, a daughter.

Married.

- BREWER—LUDMANN.—In Milwaukee, Wisconsin, on Monday, March 4th, Dr. Jay B. Brewer, of Jefferson, and Miss Cora L. Ludmann.

Died.

- BROWN.—In Louisville, Kentucky, on Monday, March 4th, Dr. G. R. Brown, of Grand Junction, Colorado, aged twenty-nine years.

- BUTLER.—In Wilkesbarre, Pennsylvania, on Monday, March 4th, Dr. William J. Butler.

- CASELL.—In Philadelphia, on Saturday, March 2nd, Dr. Jacob K. Casell, aged seventy-two years.

- COLEMAN.—In Cuyahoga Falls, Ohio, on Tuesday, February 26th, Dr. Spencer Albert Coleman, of Cleveland, aged eighty-four years.

- ELMER.—In Bridgeton, New Jersey, on Wednesday, February 13th, Dr. Henry W. Elmer.

- FOLK.—In Geneva, Pennsylvania, on Tuesday, February 26th, Dr. George Folk, aged sixty-one years.

- HAYUNGA.—In New York, on Wednesday, March 6th, Dr. George A. Hayunga, aged sixty-seven years.

- HENDRICKSON.—In Brookline, on Monday, March 4th, Mrs. Harriet E. Bennett Hendrickson, wife of Dr. Skidmore Hendrickson, aged sixty-six years.

- JOHNSTON.—In Port Leyden, N. Y., on Friday, March 1st, Dr. William Henry Johnston, aged sixty-six years.

- KEANE.—In New York, on Saturday, March 2nd, Dr. James Keane.

- KNOWLES.—In Avon, N. Y., on Tuesday, February 26th, Dr. Paul A. Knowles, aged twenty-five years.

- LA WALL.—In Scio, N. Y., on Friday, February 22nd, Dr. E. W. LaWall.

- MAY.—In Syracuse, N. Y., on Saturday, March 2nd, Dr. William Henry May, aged forty-two years.

- MENDENHALL.—In La Cygne, Kansas, on Wednesday, February 27th, Dr. R. G. Mendenhall.

- NELSON.—In Chase City, Virginia, on Saturday, March 2nd, Dr. Robert C. Nelson, aged eighty-nine years.

- OEHLHOFF.—In Cleveland, Ohio, on Tuesday, March 5th, Dr. Adam Oehlhoff, aged eighty-seven years.

- ORONHYATEKHA.—In Augusta, Georgia, on Sunday, March 3rd, Dr. Oronhyatekha.

- REED.—In Brooklyn, on Tuesday, March 5th, Dr. Charles Reed, aged fifty-one years.

- RYAN.—In Calumet, Michigan, on Friday, March 1st, Dr. John Lawrence Ryan, of Malden, Massachusetts, aged thirty years.

- SCOTT.—In Atlanta, Georgia, on Sunday, March 3rd, Mrs. Janie Campbell Scott, widow of the late Dr. Preston B. Scott, of Louisville, Kentucky.

- SKILLMAN.—In Princeton, New Jersey, on Wednesday, March 6th, Dr. Thomas A. Skillman, of New Brunswick.

- SOUTHWORTH.—In San Jose, California, on Saturday, February, 16th, Dr. Malek A. Southworth, of Little Falls, N. Y.

- STEELE.—In Philadelphia, on Monday, March 4th, Dr. J. Ward Steele, of Dover, Delaware, aged thirty-three years.

- SUCESSEROTT.—In Chambersburgh, Pennsylvania, on Saturday, March 2nd, Dr. Fred Suesserott, aged sixty years.

- SUTTON.—In Jacksonville, Florida, on Tuesday, March 5th, Dr. Henry Carroll Sutton, of Rome, N. Y., aged fifty years.

- SWEETING.—In South Butler, N. Y., on Friday, March 1st, Dr. M. F. Sweeting, aged eighty-eight years.

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Original Communications.

THE ESSENTIALS IN THE CRUSADE AGAINST TUBERCULOSIS.*

BY LAWRENCE F. FLICK, M. D.,
Philadelphia.

The modern crusade against tuberculosis is the logical outgrowth of modern knowledge. Unlike crusades against disease in the past, it is based upon exact knowledge, and not upon empiricism. The crusade against leprosy, for example, was based upon one idea,—contagion—and in consequence was accompanied by many hardships, because the only measure which could be thought of was complete isolation of the patient and the destruction of those things which had been touched by him.

Our knowledge of tuberculosis brings us into a very broad field of prevention. We really are overwhelmed with a flood of ideas of things which might be done, and have some difficulty in selecting those things that are of most importance. Much energy has been, and is, wasted in minor measures, which could be better expended in major measures. This is particularly true with people who have only a superficial knowledge of tuberculosis, and who in their anxiety to accomplish results, devote themselves to the first thing which comes into their heads that promises results.

In the light of present knowledge it is quite evident that prevention cannot be predicated upon the destruction of the tubercle bacillus alone. Whilst the tubercle bacillus is the primary cause, there are many secondary causes in social customs, in habits of life, and in every department of civilization. Some of these have a greater, and some a less influence upon the spread of the disease, but all have an influence which must be kept in mind in formulating plans for its prevention.

It goes without saying that the ideal plan for the prevention of tuberculosis, including all measures that can be thought of, is impracticable in the immediate present. Such a plan would mean a complete revolution in everything, a complete change of customs and laws, and a remodelling of society from every point of view. The undertaking is too gigantic to be thought of.

Fortunately the prevention of tuberculosis is not difficult, and the essential measures will in time stamp out the disease without attention to many details. Implantation of the tubercle bacillus after all is not an easy matter. Whilst a great many

people are in a sense exposed to contagion, comparatively few get an implantation which ultimately develops into a fatal disease. It may be laid down as a general proposition that for the implantation of tubercle bacilli in sufficient quantity to produce an active disease, prolonged intimate exposure to a fairly intense contagion is necessary. Ordinary casual exposure to an attenuated contagion need scarcely be thought of when planning practical measures for the prevention of the disease.

Essentials in the crusade against tuberculosis may be enumerated as follows: 1, The control of contagion; 2, the disinfection of infected places and things; 3, life in the open air; and 4, proper food. With these measures, tuberculosis can be wiped out in a comparatively short time.

The control of contagion undoubtedly is the most important item in the prevention of tuberculosis. If all contagion could be controlled, nothing further would be necessary, as no new cases could arise. It is self-evident, however, that all contagion cannot be controlled. With a disease so wide-spread as is tuberculosis, and assuming such diverse forms, it would be impossible to control all contagion even though the best system of registration and inspection could be established. Many cases would escape detection, and many cases under supervision would not live up to the rules laid down. Much can be done however; and all that can be done should be done.

For the purpose of control, the first step necessary is registration of all cases of tuberculosis. Against this there has been objection made by members of the medical profession ever since the matter was first talked about; and whilst this objection is dying out, in many places it is still a potent obstacle to progress. Without registration, control of tuberculosis is impossible. The first thing necessary is to know where the patient lives before proper supervision can be given, and without supervision there can be no control. It has often been said by those who object to registration that proper control can be exercised by the attending physician. This is a plausible, catchy argument, which has no foundation in fact. The general practitioner does not know how to control tuberculosis, and if he did know, would not take the trouble to give the detailed instruction and supervision necessary. I think that I can safely say, that I have as yet to encounter the first consumptive who has been instructed and trained in the prevention of tuberculosis in a way that would protect others, by a general practitioner of medicine. Occasionally a consumptive comes to me who has received general instructions from his physician, but has failed to put into practice methods

* Read by proxy before the American Public Health Association at its meeting in Mexico.

of disposing of his expectoration which make him safe to others. It is evident in such cases that the man who instructed him, although earnest and anxious to do the right thing, did not know enough about the subject to train his patient properly.

In order that the patient may be harmless to others it is necessary that he destroy all broken down tissue in such a way as not to contaminate either himself or anything about him. He must dispose of his sputum, or broken down tissue, without soiling his hands, his lips, any part of his body, his clothing, the floor, the furniture, or indeed anything about him. The bacilli must be destroyed, just as they come from him, without contaminating person, place, or thing. This can only be done when the broken down tissue is immediately deposited in a receptacle which can be burned, without any of it going astray between the place of exit and the place of deposit. Whatever parts are soiled during this process must at once be cleansed, and the material used in cleansing them must be scrupulously destroyed by fire or by some powerful germicide.

The receptacle for the sputum may be a paper pocket spitcup, a square paper spitcup in a tin box, or a china cup. It should be held to the mouth so that sputum cannot be sprayed during the act of expectoration. When a china cup is used, lye and water should be placed in the cup. All paper cups, when filled, should be burned. Tin holders should be boiled once a day. China cups should be washed and boiled. The contents of china cups may be burned, or sterilized and emptied into the sewer. When coughing, the patient should hold a paper napkin close to his mouth, in order that there may be no spray scattered about. If the broken-down tissue comes from some other part of the body than the lungs, it should be taken up carefully with absorbent cotton and immediately destroyed. When a patient expectorates he should wipe his mouth carefully with a paper napkin after expectoration; fold the napkin so that he may not soil his hands; and deposit the napkin in a paper bag, using a napkin only once. When there is an accumulation of napkins, the bag containing these napkins should be burned. When broken down tissue by accident is ejected somewhere else than into a proper receptacle, it should be at once taken up and destroyed, and the place on which it lighted properly disinfected.

The second step for the control of tuberculosis is supervision. This undoubtedly can best be done through inspection and instruction by trained nurses. The moment the whereabouts of a case of tuberculosis is known, an inspectress should be sent to visit the patient, for the purpose of placing rules in the hands of the family and the afflicted one, and explaining the rules. Only a person who has been specially trained for this work can do it properly. The inspectress should go into every detail, and should fully explain to the patient and to those who are about him, what the rules mean, why they are made, and what their observation means to the patient and others. In this way intelligent cooperation can be secured. A copy of the rules should be left in a conspicuous place in the house, and the inspectress should return at intervals to see that the rules are observed and to give further instructions about them when this is necessary. The inspectress should report to higher authority what she

observes in the places she visits, and a careful record should be kept of her reports.

Along with the inspection and supervision must go material assistance. Many poor patients have not the means to buy what is necessary for the proper disposal of sputum, and in such cases it is necessary to supply requisite material. Sputum cups, paper napkins, paper bags, and disinfection material should be supplied in such cases when necessary, and the patients should be carefully instructed in their use.

The cost of material for the prevention of tuberculosis is not very great, and can be easily supplied by boards of health or by organized societies for charity. When work like this is done on a large scale, the cost need not exceed four mills per patient per day for the material used, and five mills per patient per day for rent and the service of the inspectresses.

To many of the very poor, assistance in the way of food has to be given if proper cooperation is to be secured. The best food to give is milk and eggs. In some instances medicine also may have to be supplied. The entire cost of dispensary control of tuberculosis need not exceed eight cents per patient per day.

Disinfection of places and things is an important measure in the crusade against tuberculosis, in as much as control of contagion is imperfect. Even when patients are under constant observation, thorough cleansing or disinfection should be practised at intervals. The room which is occupied by a consumptive should be scrubbed daily, and if this cannot be done, disinfected at least once a month; and the things which are used by him should be boiled and washed often, or disinfected at very short intervals. All boilable material should be carefully boiled and washed, and all material which cannot be boiled should be carefully scrubbed. Things which cannot be boiled and cannot be scrubbed, should be sterilized with steam or with formaldehyde. Formaldehyde disinfection is probably the most efficient method of sterilization known at the present day. It can be applied to rooms by carefully sealing up a room and filling it with formaldehyde, either from a formaldehyde generator, or by combination of formaldehyde and potassium permanganate in the proportion of eight and one half ounces of potassium permanganate to a pint, overflowing measure, of formaldehyde for every thousand cubic feet of air space. The formaldehyde is to be put in a vessel first and the potassium permanganate added; and the vessel into which these are put is to be placed inside another vessel to protect against overflow. Clothing can easily be disinfected with formaldehyde by saturating it with it, and placing it in a tightly closed chest for from twenty-four to forty-eight hours. When there has been any very gross contamination with sputum, this should be dissolved with lye first, and then carefully washed out with water. Nothing short of complete removal and destruction of material containing tubercle bacilli can be accepted as sufficient.

Life in the open air can be made a potent factor in the crusade against tuberculosis under existing conditions if universally adopted. Contamination with tuberculous matter is much less potent for evil in the open air than in a closed room. It is doubtful

infect whether implantation of tuberculosis can take place in the open air. Tubercle bacilli do not live long in brilliant light and fresh air; and where there is a constant circulation of air usually do not accumulate in sufficient quantity to make air a factor in implantation. Every living thing subject to tuberculosis, apparently has a certain resisting power to the disease, and can dispose of a certain number of bacilli with impunity, only succumbing to implantation when a larger number of bacilli get entrance into its organism than it is capable of disposing of, or when entrance of bacilli is so continuous for a time as to overcome normal resisting power. Enclosures with bad ventilation are essential factors in the spread of tuberculosis, and universal knowledge of this fact is of great importance in the crusade against the disease. It is possible through the ordinary channels of education, to teach an entire population the value of fresh air in the prevention of disease and the part which proper ventilation of houses plays in bringing fresh air within the constant reach of human beings. This idea of fresh air for all living, air-breathing things, should so be made to permeate the public mind that it will revolutionize the building of houses and the daily routine of life. It should be made to enter into and modify every kind of philanthropic work, to the end that all eleemosynary, reformatory, and penal institutions, not only would be built in harmony with it, but would be managed according to its dictates. It should so affect public sentiment, that all churches, meeting places, and establishments which harbor men and women and have to do with their daily lives would be modified and managed in accordance with it. Let light shine into all dark places, and God's fresh air enter into every nook and corner in which a human being or a living thing which is of value to man takes breath.

Proper food can be made a factor in the crusade against tuberculosis in much the same way as fresh air. Food and air play practically the same rôle in the maintenance of health and resistance to disease. They are essentially cofactors for the same end. The entire resisting power of a living organism against parasitic life depends largely upon normal nutrition; and normal nutrition hinges upon maintenance of the equilibrium between consumption and supply of energy. When a deficit occurs, a weakened resistance to parasitic life ensues, and a gradual deterioration of the organism sets in; thus establishing a vicious circle, which leads to a downward path. A few parasites find lodgment and grow upon the tissues; the consumption of energy by these parasites together with the damage to the machinery in the organism still further reduces its working capital, and makes it an easier prey to its foe.

Not only the quantity but also the quality of food enters into this problem. Unless food can be properly changed into tissue, it does damage in addition to being inadequate. That which is not available for use of the organism becomes a burden. A double injury follows, in the lack of nutrition, and the burden of throwing off debris and products of fermentation. The extra labor breaks down the function of organs and still further interferes with proper nutrition. Descent upon the downward path is difficult to check. Food of the right kind and

in the proper amount is therefore necessary for the maintenance of health, and, when health has been lost, for its restoration. People who are properly nourished when exposed to tuberculosis, and sometimes even when an implantation has taken place, resist the development of the disease.

In order that food may play its destined rôle in the crusade against tuberculosis much educational work will have to be done through our schools and philanthropic societies, in educating the people upon the value of foods, and upon their proper preservation and preparation. Among the poor very few know how to select food for its nutritive value. They buy things at high prices which have low nutritive value, and they reject things at low prices which have high nutritive value. They do this partly through ignorance, and partly through obedience to their cravings. Their systems need certain food elements; and not knowing how to make the combination to give them these elements, they buy that which is tasty and which apparently supplies the craving.

Lack of knowledge of preserving food often leads those engaged in the distribution of food to methods and use of materials which are prejudicial to health. Lack of knowledge about preparing food leads people engaged in cooking and serving food into grievous errors, which are far reaching in damage to organisms fed upon such food. The storehouse and the kitchen really are sources of many of the ills of modern times. Education in the preservation and preparation of food should be made part of the training of youth, and should be inaugurated by philanthropic societies for adults wherever possible.

How can the essential measures for the prevention of tuberculosis best be inaugurated? What measures shall first be used? These are practical questions which many communities are propounding to themselves at present.

The registration of tuberculosis and the disinfection of persons and things which have been contaminated, are essentially governmental functions, and should be performed by boards of health. Where boards of health do not exist, something may be accomplished by organized private effort. A local society for the study, treatment, and prevention of tuberculosis, is perhaps the best form under which such private effort can be made. Education in the value of proper food and fresh air in the crusade against tuberculosis can perhaps best be carried on by such a society. Societies of this kind are springing up all over the country, and should be organized in every community large or small. Plans for the organization of such societies can be obtained from the National Association for the Study and Prevention of Tuberculosis.

Application of the essential measures for the prevention of tuberculosis is feasible in every community. In some it will be easy, and in some difficult, according to the amount of organization which already exists, and the state of public education in regard to tuberculosis; but in all it is possible. Probably the best plan is to combine private organized effort with public governmental effort. Every individual in a community should do what he can; and the government everywhere should aid, legally, morally, and financially.

In communities where the government is not

prepared to establish registration and carry on disinfection, much can be accomplished by private effort through the establishment of hospitals, dispensaries, sanatoria, and convalescent farms. Of these, the hospital undoubtedly is the most efficient measure for the prevention of tuberculosis, as it removes patients from the community during the period when the disease is in the most contagious form. Every community should have at least a few beds for advanced cases of tuberculosis.

Next to the hospital the dispensary is the most efficient measure for the prevention of tuberculosis, and dispensaries should be established in every community where money can be raised for that purpose. The dispensary enables you to get into the home of the patient and to get control of his environment. It opens the way both for the prevention of contamination, and disinfection after contamination has taken place. It enables private effort to do what the government might do legally, but what no one else can do legally, and what therefore must be done with the consent and cooperation of those afflicted when the government is unwilling to do it.

If the means can be gathered together, sanatoria and convalescent farms for consumptives should likewise be established. Institutions of this kind can do much for the cure and the prevention of tuberculosis, and for this reason usually meet with popular approval, and readily command means for their support. In many communities it would be perhaps easier to establish a sanatorium than any other form of institution, and where the popular mind runs more in this direction than in another, it is well to establish a sanatorium first, and endeavor to build from this to other institutions. Governments likewise take more kindly to sanatoria than to other forms of institutions, so that in many cases it will be easier to get help for the establishment of sanatoria first.

So far as possible, the work in a community should be led by private effort, and supported by the government. This not only gives greater resources, in that it has governmental support in addition to contributions from private sources, but it is also much farther reaching in its educational influences. People are apt to think more about things which cost them something than about things which are given to them gratuitously, and the greater the sacrifice which people are asked to make in the interest of the crusade against tuberculosis, the more rapid will be the progress of the crusade. Joint action of private effort and government support will undoubtedly give the best results.

Education in the value of fresh air and proper food should be inaugurated everywhere and carried on in the schoolroom, in the press, and on the platform. All philanthropic societies should make it a part of their programme.

732 PINE STREET.

The Cologne Doctors' Strike may prove costly to five local medical men who were under contract to the *Orts-krankenkasse*. It appears that they broke their agreements at the outbreak of the strike, and the sick fund committee are suing them, winning in two courts, while an appeal to the Imperial court has failed. On the strength of this success the plaintiffs now claim 100,000 m. (5,000 l.) damages.

AN HISTORICAL SKETCH OF THE DEVELOPMENT OF PERCENTAGE FEEDING.*

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The evolutionary phase of percentage feeding, a very important branch of the rational medicine of early life, is well worth considering, for it emphasizes the fact that the first principles and the primary general truths of every subject must be studied and recognized before that subject can be understood and adapted to practical use. In order to understand why so many different opinions have been held on the question of the feeding and of the nutrition of early life, we must appreciate that however much the precise study and scientific investigations which have been awarded to other branches of medicine have been in the past denied to this one, still the subject of feeding has always been prominent. It has been made prominent by the ever pervading necessity of caring for the most helpless period of life. The infant cannot feed itself—it must be fed. It knows not the possible results of the food it is getting—if it tastes well it takes it—it has no power to express disapprobation, but can only by its cries, its vomiting, and its diarrhoea impress upon its caretaker the *results* of its food. As the food is the most frequent source of the ailments of infancy, and as these ailments annoy, and occupy much of the time of the caretaker, naturally the food question becomes prominent to an exaggerated degree, and one article after another, in varying quantities, is introduced into an organ small, sensitive, and, from its great power of distension, misleading to an extraordinary degree. The laity in general, not knowing that the abuse of the function of an organ leads to disease, continue to tamper with the vital function of digestion until trouble arises, and then resort to *drugs* instead of striking at the root of the matter by altering the cause of the unfortunate results. Resulting from this aspect of the subject, mothers and nurses soon learned in the past to think that they knew as well as any one what their infants should be fed with. Again as a result, when the infant could not be nursed, food stuffs of all kinds were made use of; the mothers and nurses thus soon dominated the physicians, and the physicians, by culpable neglect in their study of the subject, instead of expending their energies and exercising their knowledge to remedy the evil, took refuge with still a third barrier to scientific feeding, namely, with the commercial venders of patent and proprietary foods innumerable.

Twenty years ago, when first I had my attention directed to the evils resulting from ignorance of the subject, and failure to meet this ignorance by precise study, I felt that a great unknown field for research lay before him who was willing to start at the bottom, to throw aside preconceived ideas, and by the same methods as had already been used so successfully in organic conditions to build up the subject of infant feeding on facts. To my mind the age of empiricism was doomed eventually to be swept away, but I foresaw that prejudice and opposition to iconoclasm would for many years oppose

* Address delivered by invitation of Professor L. Emmett Holt, at the opening exercise of his course on Feeding, at the College of Physicians and Surgeons, Columbia University, New York, on February 6, 1907.

progress, and I was right, for they exist to-day and will continue to exist for many years more.

It is only of late years that the idea has begun to occupy the minds of the thinking part of our profession, that although the feeding of infants in the past has been inexact and empirical, it may be possible to apply the same exact acumen to this subject as to any other in medicine. The argument that the human stomach is not a test tube holds little weight with those who in return might say the human lung is not a sponge, or the human bladder is not a china bowl.

The experience of one man, no matter how comparatively extensive it may be, must necessarily always be small, but still it is from his own experience that the individual relies for anything original which may emanate from his brain, and I therefore am laying before you an experience of my own.

In the Infants' Hospital in Boston, many foods had for many years been tried. Some were more successful than others, but the best record was shown for condensed milk. The first step was, naturally, to see what were the ingredients of these foods and what were the constituents of the one that was most successful. It was found that condensed milk contained no starch, practically no fat, much sugar, and a small amount of proteid. But this was not enough, and analyses were made to ascertain how much relatively of each ingredient was in each food. Dr. Arthur Meigs in Philadelphia, by his analyses of human milk, thought that he had shown that human milk always and invariably contained but 1 per cent. of proteids. The mixture of the condensed milk, diluted with water, which was the most successful food at the hospital, was found to contain about one per cent. of proteid; hence, believing in Dr. Meigs' 1 per cent. theory, we argued that 1 per cent. of proteid was best for a young infant. Dr. Meigs then went further, and by his chemical analyses showed that a mixture of cream, milk, lime water, and milk sugar could be made to correspond to what he held was the analysis of good human milk—the acknowledged best infant food in the world—namely, four fat, seven sugar and one proteid. All the babies were therefore fed on that mixture, and some did well and some did very badly. Other students in different parts of the world tried various combinations of food stuffs, and some of the infants did well and some did badly. It soon became evident that much more investigation was necessary. Later chemical analyses of human milk showed that Meigs was wrong, and that the percentage of proteids was not always one, but that it varied in the individual. Observations showed that while one baby might need and digest 1.50 or 2.00 proteids, others could not digest more than one; that these varying percentages were supplied by different mothers; that perhaps a dozen human milks might each agree with as many infants, as shown by their perfect nutrition, and yet that any one of these infants' digestions might be disturbed by the same milk which was being digested perfectly by another.

Up to this point we were still ignorant as to what was best to feed an individual infant on, but our knowledge had been increased and progress had been made, for we at least had swept away some of the effete traditions of the past, relics of ignorance and

of a stubborn opposition to accept what was proved. Encouraged by what iconoclasm had already accomplished, we went still further, taking for granted that we could now start in our investigations on a basis of certain acknowledged truths, all of which were important factors in the feeding problem. We hoped that in this way we might establish a system with which all physicians in all parts of the world could work uniformly and systematically, and thus be able to compare their varied and individual experiences. The factors already proved were: First—that the food which from its nutritive results must be allowed to be the best infants' food, was what might be called *good human milk*, Second—that this "good human milk" varied; one milk seemingly adapted to one infant, and one to another, a third perhaps agreeing with neither, but showing itself to be good for still another. Third—that if this were true, the function of digestion in different healthy infants differed quite widely. Fourth—that if this were true, it was self-evident that each infant having its idiosyncrasy when well must also have such idiosyncrasy when sick, whether naturally puny or when its digestive powers had been tampered with until we had to treat it for indigestion from the beginning, or if it were suffering from some specific disease. Fifth—that it was therefore self evident that there was no one particular food for each infant, thus overthrowing the old idea of the superiority of any one patent food. Sixth—that a food must be found which should be adapted to the digestive functions of the individual. So far, although it had been proved by our knowledge of human milk that no one combination of constituents was sufficient for a universal food, yet when we tried quite a large number of these combinations, we often failed. We then began to appreciate that the infant's idiosyncrasy was not for any one of the especial combinations usually found in human milk, such as a high or low total of solids, or in other words, a strong or weak milk, but that any one of the constituents, according as it was in high or low percentage, might be the cause of what was represented by the especial idiosyncrasy, and thus we arrived at the conclusion that in a multitude of variations and degrees, the human infant may have an especial idiosyncrasy for a high or low percentage of any one of the food stuffs or for any combination of them.

Resulting from this we deduced that to obtain a successful feeding and nutrition for human infants, we must be able to prepare (when good human milk could either not be obtained or was unsuccessful, as it is well known to be at times) an almost immeasurable number of foods, varying in the percentages of any one of their ingredients and in the combinations of these percentages. We next met with another grave difficulty which threatened to overthrow this belief that exact combinations of percentages were valuable, and to present yet another barrier to progress. The physicians who were induced to make trial of percentage feeding said to us:—"You tell us to use certain combinations of food stuffs. We do so, and they fail; hence we have no practical use for exact feeding." In answer to this we could only say "that believing as we did that it was at least wise, and certainly intelligent, to know what we were giving, whether it was good

or bad, was it not possible that when you think you are giving certain percentages that you are in fact giving something else? You say that you are mixing according to rule certain portions of milk, cream, water, and sugar, and therefore you know that you are obtaining certain percentages." We answered that "we doubt the accuracy of your dilutions, and we know that your results may be vitiated by the varying creams and milk which you are using." We explained to them "that it not only made a great difference as to the percentage of resulting fat, as to whether a 10, 12, 16, or 20 per cent. cream was used, but that it also vitiated the result of their proteids," for it was a fact that a high percentage cream was required if the lower percentages of proteids were to be obtained, especially if high fat percentages were also required in the mixture. We showed them the fallacy of cream mixtures made from diluted cream and that to get high proteids with cream of any per cent. except 8 per cent. we must add whole milk or fat free milk to supplement the deficiency of the proteids.

This is only one illustration of the many obstacles which in 1887 were continually met with to the bringing of exact feeding on to a fair basis where it could be judged intelligently. As soon as these facts in regard to the creams were admitted, formulæ for calculating the percentages in given creams and milks were evolved by many physicians for their own use: simple, abstruse, or inadequate, according as their minds were more or less mathematical. A large majority, however, freely confessed that they could not, even if they had the time, calculate the given percentages which they felt their patients ought to have, and here again was a barrier to a universal adoption of the percentage idea.

We had now reached a position where we could say:—"It is at least more intelligent to know what percentages of the food stuffs we are giving, whether they are the right ones or not, than to feed by 'rule of thumb.' If one food agrees better than another it must be that one food contains a better combination of elements and a preferable percentage of each element and so is better adapted to the idiosyncrasy of the individual digestion than other combinations of percentages, for the quality of the elements does not here come into the question, the same milk, cream, and sugar being used. This being the case, is it not wise to determine exactly what percentages are in this particular food? for surely this may aid us in another case where the symptoms are similar and obviate the necessity of always working in the dark when we begin with a new case."

This was the stage of the subject that was attained in 1888, and now we were met by still further objections, for opponents of the percentage idea freely asserted that there was no use in attempting exact percentages in using animal milks as the quality of the fats and proteids differed so much from that of human milk that percentages played but a small rôle in the problem. We could but answer to this that "even allowing that we were using qualitative food stuffs which differed from the ideal elements of human milk, still that where it was possible to make the smallest advance it was worth while to score that advance. That the reason we used animal milks for infant feeding was that we

in many cases could not obtain human milk, and thus we were forced to use them for there was nothing else which corresponded so nearly qualitatively to the elements of human milk."

If, then, we were forced to use animal milks, why not at least perfect the quantitative side of the problem and strive to also improve the qualitative so soon as the physiological chemist, by his future investigations, had taught us how to do so.

Then a multitude of objections were brought forward of the most fallacious character, and mere masks to block the way of progress. You would at the present day, accustomed as you are to the intelligent and advanced teaching of this subject in New York, scarcely believe how the question of percentage feeding was begged in the early nineties by its opponents. Although we had for many years expressly stated that percentage feeding was the exponent of no especial food, but of the greatest variety, and had nothing to do with the opinions of different physicians as to the quality of the percentages, we now heard that we were the opponents of carbohydrate food stuffs, and were the exponents of modified animal milks over human milks. Although we over and over again strenuously attempted to refute these ideas by absolute denial in published articles, our denial was of no avail. We explained that the percentage idea had nothing to do with the individual's opinion as to whether cereals or cane sugar or animal milk should or should not be employed for infant feeding. We expressly stated that such discussions as these were entirely outside of and merely collateral to the principle of percentage feeding; that percentage feeding could be carried out whether a physician used one or all of the elements of food, and whether those elements were considered to be manifestly improper by the majority of physicians who had especially studied the feeding and nutrition of early life.

We stated that "what was meant by percentage feeding was the modification of the food elements so that we could give the individual the percentages of those elements which were adapted to his special digestion. That this should be done in treating the digestive disturbances of all ages, and had nothing to do with the quality of the elements. That the percentage idea in the future would be used for children and adults as well as for infants, but that as healthy infants were often deprived of their best food—good varying human milk—it was most important to make the best of the enforced substitute—animal milk. That according to need and to the desire of the individual physician, the elements of human milk, or cereals, or animal milks, and the different fats and sugars could and should be treated on the sound and intelligent basis of percentages. That the medical public, in so accepting the percentage idea, was in no way committing itself to the opinion that cereals should or should not be used in an infant's food, or that the quality of the fats and proteids in animal milk was as good as those in human milk for the feeding of the first year of life. On the contrary, these were subjects for an entirely different class of discussion, and that because an individual believed in the percentage idea was no reason why he should be the exponent of anything else."

Then we entered on a new phase of the subject, for the belief in percentage feeding grew, and many physicians all over the country were using it under the name of *home modification*. But here again new obstacles arose. The reports came in that the infants did not do well, that allowing that provision was made for an appropriate and exact cream and milk calculated on a proper formula basis, that the infants especial idiosyncrasy had been carefully studied and that many more infants did well than they did formerly when fed by the old methods and by patent foods, still the results were often disappointing. Questions such as the desirability of a set cream over that obtained in a few minutes by the centrifugal separator provoked quite heated discussions and threw doubt on the percentage idea as a whole, for it was the more exact fat percentage of the centrifugal method which was especially valuable for percentage feeding, not to speak of the far lower percentage of bacterial content and dirt contained in the centrifugal over the gravity method.

What we then stated as true and what has since been proved to be true, namely that the only fair way to judge of what could be accomplished by exact percentage feeding, so far as the percentage was concerned and throwing out entirely the qualitative factor of the problem as being foreign to the percentage idea, was to arrange so that the physician after having determined what percentages were best for the patient, should have some means by which he could surely obtain these percentages. We pointed out that in a "home modification" this in many cases was practically impossible. "That the actual modification in many instances could not but be improperly done by mothers and nurses, and that what was needed in milk modification was a perfection of technique." We again pointed out "that in the past, physicians had not begun to get the efficiency of the drugs which were prescribed and given in their practice, because the compounding of these drugs at home was necessarily inexact, and that only was the great value of certain drugs appreciated, when finally, by the trained and skilled hands of educated pharmacists, in the especially equipped laboratories of their pharmacies, the drugs were prepared in exact percentages, and thus in precisely the doses ordered by the physician. In other words, the elements of the drugs should, in order to obtain their proper effect, be modified in their percentages not by 'rule of thumb,' but exactly. In like manner, just as the pharmaceutical laboratories represented perfection of technique, so should there be milk laboratories where perfection of technique could be carried out in dealing with food stuffs, and so only could the real value of these food stuffs be determined."

I stated "that these milk laboratories should be the exponents of no especial food, and that no especial food should be prepared in them for general public distribution, but that they should be managed by intelligent, educated milk clerks, and should be under strict medical supervision." That "the infant foods which emanated from milk laboratories should be freshly prepared, only under prescriptions from physicians, and that this rule should be as strictly enforced as it should be in the pharmacies." I stated that "I believed that in this way and in this way only could physicians all over

the world, dealing with the same methods, accomplish satisfactory results by comparing experiences which were based on uniform laboratory methods."

We had in 1889 arrived at a stage of the discussion when it looked as though my long and cherished idea was likely to be developed no further, simply for lack of means to place in the hands of physicians an instrument of precision by which they could intelligently convince themselves that percentage feeding was the basis on which would be built in the future a rational system of substitute feeding.

My dream and my ambition was to establish milk laboratories, but there seemed to be insurmountable obstacles. A milk laboratory to be successfully carried on for public use must practically have a considerable capital to start with, be financially sound and thus independent of a commercial temporary failure. Physicians as a body could not be asked to risk their money in what was considered too new and untried a project to command confidence, especially when a number of the best known and most respected leaders in the different communities were actual opponents, and scornful opponents, too, of the percentage idea. Furthermore, I as an individual exponent of a system of feeding, the product of which must be sold to the public, could not in any way be identified with a project of this kind financially. Any influence which I might have with physicians or the public would surely be vitiated if for a moment it was supposed that I should benefit financially by the general use of food preparations emanating from a public laboratory. I had, in fact, to announce decidedly, as there are always those who will do us an injustice, that I could or would have absolutely nothing to do, personally, with the financial equipment and running of a milk laboratory. This position I maintained at a time when an individual's money seemed to be the weight in the scales which would determine the fate of percentage feeding. From this position I have never swerved, as I have always believed and have found it to be true that he who is to have the proper influence in persuading both physicians and laity to aid him in establishing a medical idea, must be the exponent pure and simple of the idea, and have no connection with the commercial side of its development. No physician can retain his self-respect, or that of others, who deliberately prescribes a product from a company and then receives a profit from the sale of such product. Under these circumstances the percentage idea in 1891 was at a low ebb, having lost its original impetus and the interest of something new; in fact, it looked as though it was doomed to failure.

And now new and unexpected aid, aid surprising in its source and wonderfully adapted to its purpose, came to the cause of percentage feeding. In the autumn of 1890, a highly educated gentleman farmer, the son of a Scottish clergyman whose parish was in England, after studying divinity at Harvard had settled in Milwaukee, had come east to buy cattle for his farm in Wisconsin. This man had the advantage primarily of the cultivation and humanitarian influences attending his studies in divinity, but in addition to this he had an unusually brilliant, strong brain. He was born with instincts which soon separated him from the mere quiet

polished life of a clergyman. His instincts were for Nature, and he became not only a great hunter of animals, but an intelligent student of their habits. His roving nature, seeking for experience among the "wild," lead him as a boy to Australia, and he later appeared in our own western country, where as a companion with the troopers under Captain Charles King his active, receptive and wonderfully retentive mind stored up new experiences, not only of the hostile Indian tribes, but of their animals, and all the knowledge of their habits which he made use of when finally he settled down on his quiet farm and devoted himself to the raising of fine cattle and to a minute study of their natures, their breeding and their power to procreate and to rear their offspring. He was the man who invented an apparatus, still in the Patent Office at Washington, by which he could mechanically separate the coarse curds of proteid from cows' milk, and thus make it more digestible for the feeding of calves. It was he who noticed that the calves of Jersey cows did not do so well when fed with the milk of their mothers as they did when receiving the milk of the commoner grades of cow, whether American or of the hardy imported European grades, especially the Holstein. It was he who successfully reared weak and dying premature calves with roughly improvised heated incubators, and found that the milk given to them must be diluted, and in that sense modified, before they could digest it.

It was through the knowledge of this intelligent farmer that the success of the percentage idea, when waning, was revived, and through his energy that the precise technique of Laboratory modifications was brought about.

This man arrived at Pittsfield in the Berkshire Hills, and having an hour to wait between his trains, went into the public library. Here he became interested in an article of mine on the reduction of the percentage of proteids by means of dilution. This method immediately struck him as more simple and exact than when such reduction was attempted with his mechanical contrivance, and, with his mind full of plans for the development of the percentage idea, instead of returning home he came to Boston and at once to my house where, without any ceremony, he introduced himself as Mr. G. E. Gordon. He announced that he was ready to devote himself to building up milk laboratories if I would aid him by placing him in a position to deal with the physicians. I assure you that I lost no time, and before many days we had arranged all the practical details which have since helped so greatly in the development of percentage feeding. In those early days a systematic statement of the principles which were to be upheld in connection with milk laboratories was made, and these principles were adapted and are lived up to at the present day. In the first place it was guaranteed that the milk supply should be from cows chosen by expert examination and of a breed best adapted for infant feeding. That the milk supply should be clean, constant, and reliable. That the cows should be cared for by the most approved methods and under the absolute control of the laboratory authorities. That the percentage modifications should be definitely prescribed by physicians only, and dispensed only on a physician's prescription.

The mode of operation having been decided upon and the brains for carrying out the system having been supplied, the next step was to obtain capital to provide a plant and equip it. Here another man comes upon the scene, bringing with him confidence by his business integrity and wonderment that a nonmedical individual who had never heard of food modifications before, should be so impressed by the idea of a milk laboratory devoted to percentage feeding as to unhesitatingly undertake to provide thousands of dollars for the maintenance of such a laboratory. This man, whose business was that of a lithographer, was Mr. George H. Walker. He has always had implicit faith in the ultimate success of percentage feeding, and with his own capital established in Boston the first milk laboratory in 1891.

We were now in a position to really test the advantage of precise percentage feeding, and there are many who now thoroughly believe in it. The most hearty cooperation, and far greater than in Boston, was immediately given in New York, where all the great schools of medicine were soon making use of the laboratory and teaching its principles.

The great assistance which was given by a private individual, Mr. Samuel M. Shoemaker, in providing a model dairy on his place near Baltimore, did much to stimulate the establishment of laboratories elsewhere until now we find the Walker-Gordon laboratories used by physicians in twenty different cities in the United States, in Canada, and in London. It is significant that the percentage idea has gone even a little further in England than in America, for under the supervision of Dr. Ralph Vincent in London, not only has a milk laboratory with a finely equipped farm been thoroughly systematized with money provided by a capitalist and an enthusiastic believer in percentage feeding, Mr. Barham, but Dr. Vincent has also had a very large sum of money placed at his disposal for the building of an infant hospital where the patients, fifty in number and in the first two years of life, are only admitted for diseases of nutrition, and are all treated from the laboratory with percentage feeding. In England this method of feeding is known as the American system of feeding and its use is rapidly increasing.

After all these years, then, the percentage idea has come to be generally recognized, but it must be understood that what we have so far accomplished is that in accepting the idea of percentage feeding we have merely accepted what seems to be a common sense general principle, and that in establishing milk laboratories we have given ourselves an instrument of precision, the use of which will place us in a position to determine whether this principle is correct. With such means at their command, it is manifestly the duty of physicians to carry on the interesting work of determining what preparations of *food stuffs* are best adapted for the nutrition of the infant in health and in disease. We who are interested in the still further development of the laboratories, are continually demanding the managers of these laboratories to provide us with opportunities to carry out new ideas derived from the latest discoveries relating to feeding.

The laboratories have not failed to respond to this demand, and we can now have carried out the

details connected with the preparation of the various food stuffs in a way and to an extent which has never before been possible. Not only can cereals be prescribed in the food, but definite percentages of starch are dispensed on demand. The value of, considering calories in prescribing foods for different ages will now for the first time be fairly tested, and I predict that many of the questions which have been considered to be settled regarding caloric values, will be proved to be incorrect when investigated by means of the exact percentages obtained by laboratory methods, revealing perhaps entirely new results. The total proteids or the elements of these proteids, chiefly and practically lactalbumin and caseinogen, can now be prescribed in definite percentages, and—most important of all—the laboratory methods have provided us with foods in which the percentage of bacterial content has been reduced practically to a minimum.

Although it has taken twenty years to accomplish all this, yet indeed it may encourage you younger men who are now about to enter on your life's work, to believe that time is not wasted in carrying out ideas which you absolutely believe in. Your own professor is a marked example of what indomitable pluck and unremitting hard work, combined with a steadfast purpose to reach a definite goal, can accomplish in the study of Pediatrics.

I trust that you all will, in the course of your future careers, add something to the vital subject of infant feeding:—*vital*, because on the successful nutrition of infancy depends in the future the character of our citizens, who will be wiser in mind and stronger in intellectual qualities if they are healthy in body and have normal digestions.

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THE PHYSICAL PROCESSES OF IMMUNITY AND INFECTION.

BY JONATHAN WRIGHT, M. D.,

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III.

The Electrodynamics of the Surfaces of Living Protoplasm.

In articles which have preceded¹ I have had something to say of the preliminary processes of the defense of the animal organism against disease, and of the external and internal channels traversed by its agents. To go further into the physical or the mechanical processes as distinguished from chemical interactions it is necessary to refer to the fundamental laws of matter into which I have gone more fully, though in a very faulty fashion, in other papers². In them I have led up to various points which in this contribution I shall develop into a more direct application to the problem in hand. Le Bon,³ at whose statements many physicists look askance, says:

Although matter had been considered hitherto as inert, capable only of preserving and returning the energy imparted to it from without, nevertheless we have had to acknowledge the existence of considerable forces within it, cohesion, affinity, osmotic attractions, and repulsions, etc., apparently independent of all external

agencies. Other forces, such as heat radiation and electricity itself which is emitted from matter, might be considered as simple restorations of an energy borrowed from without. But if cohesion, which makes a solid block of the dust of atoms, of which bodies are formed, if affinity which separates or draws together certain elements and creates chemical combinations, if osmotic attractions and repulsions, upon which depend the most important phenomena of life, are demonstrably the inherent forces of matter itself, it was entirely impossible, with the old ideas, to determine the source of it. . . . The origin of these forces ceases to be mysterious when we know that matter is a colossal reservoir of energy. Observation having shown for a long time that some form of energy causes a large number of transformations, we easily perceive how intraatomic energy may be the source of all the molecular forces, cohesion, affinity, etc., hitherto so inexplicable. . . . For some years the rôle of electricity has been continually enlarged. It is at the base of all chemical reactions, which are coming more and more to be considered as electric reactions. It now has the appearance of a universal force, and all the others tend to be grouped around it. . . . Formerly electricity was supposed to be produced only with difficulty, and it was considered as an exceptional force. To-day we recognize it everywhere and we know that the simple contact of heterogeneous bodies is sufficient to engender it. . . . There is not a single change which occurs in cells; there is no vital reaction in the tissues without the intervention of electricity. M. Berthelot has recently shown the important rôle of electric tensions to which plants are constantly subjected.

From inorganic matter, therefore, we may conclude that as in any piece of iron there lie dormant the potentialities of attraction and repulsion, which are at once aroused by contact with a magnet into a phenomenon demonstrable to our apprehension, so in protoplasm lie dormant thousandfold more complex potentialities, which start at once into view when brought into contact with other bits of protoplasm endowed with similar potentialities.

From the physicist's point of view now let us turn to that of the physiologist. Professor Sherrington says⁴:

In the limiting layer separating two media, forces act which depend on mutual relations between the two media in contact. It is the internal energy of such a limiting layer which is called the energy of surface. Energy of surface is therefore a form of potential energy. . . . Various physiologists have suggested that in the limiting structure between a living cell and the lymph which bathes it there exists a double electric layer. If a stimulus applied to the cell or muscle consisted—as many artificial stimuli do—in an electric charge, if that charge lessened the difference of electrical potential, the surface tension would act, and the contractile cell would, its volume remaining the same, approximate to that form with the smallest surface, the spherical form. That is, the muscle would contract. . . . To us here the interest of such statements as these is the broad one that, partially speculative though they may be, they serve to illustrate the essentially chemical and physical character of the considerations upon which physiology is based and the enormous and almost virgin wealth of opportunity which the cell theory reveals in the body's structure as a field for the play of chemical and physical reactions of a certain kind.

¹ Vide *New York Medical Journal*, 1907, p. 289 and p. 435.

² *St. Louis Medical Review* during the issues of August and September, 1906.

³ *L'Évolution de la matière*, 1905.

⁴ *Lectures on the Method of Science* (Physiology, Its Scope and Method, by C. S. Sherrington, D. Sc., LL. D., etc., 1904).

There is very little of the speculative as to the nature of this force. D'Arsonval, nearly twenty years ago, pointed to the muscle in its striated form as the protoplasmic model of a Volta pile, while Loeb has recently shown how electrolytic salts arise at the distal end of a nerve in which a current has been induced by its proximity to a parallel current.⁵ Du Bois Reymond had supposed that the electric current which in repose runs from the centre of a muscle to each extremity was due to a bipolarity of the molecules, while d'Arsonval in 1889⁶ ascribed it to variation of the superficial tension between the plates representing the striations of the muscle, and he drew a parallel between the globule of mercury in the experiments of Lippmann and the globule of protoplasm. He puts the relationship thus: "The superficial tension at the surface of contact of two compressible bodies is a function of their difference of potential."

The phenomena of artificial cells⁷, the most astonishing revelation of how the heredity of the inorganic is handed over to the organic, and the beautiful experiments of Lippmann conclusively demonstrate what surface tension can do, and that it is electricity on the surface of a liquid, in which category we must place the living colloid cell, which does it. The contact of one fluid surface of different potential with another sets up an electric current which may be demonstrated with an electrometer. With microscopic objects such as a bacterium in contact with an animal cell in the tonsillar crypt it is manifestly impossible directly to demonstrate this dynamic relationship between the two, but it is the purpose of these papers to collect from near and distant fields enough circumstantial evidence to remove this assumption from the field of speculation at least.

Thus far we have seen it has actually been demonstrated between the surfaces of liquids. It is the motive force which is the cause of the artificial cell form and its activities, and there it is most clearly perceived how molar interactions are correlated with molecular interactions. We have seen it has been measured by an electrometer in striated muscle. We have seen that it is evolved to such a degree in the electric organ of fishes that it will heat an incandescent lamp to glowing.

Now let us turn to some of the recent work on immunity, and especially to those phenomena of chemotaxis and phagocytosis which have been for so many years the centre of interest to French investigators. These ideas have in recent days received such a thorough support from English workers that the formulæ of Ehrlich are, for a time at least, entering the pænumbra of an eclipse. The power lent to the leucocytes by the so called opsonins, by virtue of which they engulf pathogenic bacteria, which previously they did not possess, would seem explicable only on some theory of an alteration in the electrodynamic relationship between the protoplasm of the leucocyte and that of the bacterium.

I wish to point out an awkwardness in the acceptance of the phenomena of the opsonins as a chemical reaction, but I do not care to trust myself to put the matter in a proper light by my own interpreta-

tion. Therefore, I turn to a footnote in Dr. Hektoen's Goldsmith Lecture in the *Transactions of the New York Pathological Society*, 1906, p. 17:

Human and dog leucocytes lose the power of phagocytosis of bacteria when heated to 45° C. for thirty minutes. After heating at 42° C. there is still good phagocytosis. When mixtures of leucocytes heated at 45° C., with bacteria and normal serum are placed in a shaking machine and gently agitated for an hour or so, the smears commonly show a neat accumulation in more or less perfect circles of bacteria immediately around leucocytes. This interesting phenomenon was first observed by Dr. Rosenau in mixtures of pneumococci, heated human leucocytes and human serum, but is observable in other mixtures of the same general nature. Omitting the serum, heating the serum to 58° C., or heating the leucocytes to 50° C. eliminates in each case some factor or factors essential for the development of this perileucocytic arrangement. Vlassow and Sepp found that motility of leucocytes is increased at 40° C., and that temperatures of 42° to 46° C. cause irregular and feeble movements. It is possible that the perileucocytic disposition of the bacteria about the leucocytes heated at 45° C. are the results of movements on the part of the heated cells toward sensitized bacteria, but it also would seem to be necessary to look for some mechanism that holds the bacteria together about the leucocytes. Under the circumstances there must be assumed to exist a mutual attraction between the bacteria and the cells.

Hektoen again introduces considerations of a physical nature when he deals with the observations which have shown that as the virulence of certain pathogenic bacteria is increased they are not as readily engulfed by the phagocytes.

The insusceptibility of virulent cocci to phagocytosis probably does not depend on any lack of suitable receptors or affinity for opsonin, but rather, it would seem, on an increased resistance to its peculiar action, namely, so to modify the cocci that they lower the surface tension of the leucocytes in their neighborhood and thus lead to phagocytosis. The chemical and physical factors, e. g., a possible capsule formation, that protect virulent bacteria against opsonification are subjects for further investigation.

This question of capsule formation may be found suggestively discussed by Löhlein in *Centralblatt für Bakteriologie*, first addendum, xxxviii Ref., and I shall discuss it further elsewhere.

It is well urged that if there is mutual attraction between the bacterium and the cell in a chemical sense they would combine. The protoplasm of the cell would assimilate the protoplasm of the bacteria. They should not be "held together about the leucocytes;" they should be incorporated and disappear in the leucocytes. Molecules fly apart in a chemical explosion and make other combinations, but this would seem to be the nearest "chemical" phenomenon we have for "negative" chemotaxis, except, indeed, as is after all fundamentally true, we realize that the repulsion of the cells rests on the same law as the expansion of gases.

Much of all this has been long known as to the wandering cells of the body, the erythrocytes and leucocytes, and the failure to conceive of bacteria as passing into or repulsed by cell bodies at the surface in response to laws which are observed for other cells within the body seems odd. Something of the kind may be observed in the dance of organisms around others in the warm hanging drop of a hay

⁵ *Journal of Comparative Pathology*, December 30, 1905.
⁶ *Annales de physiologie normale et pathologique*, 1889, No. 1, p. 460.
⁷ In my papers in the *St. Louis Medical Review* I have translated Loeb's account of them.

solution. In vitro the phagocytes exhibit a selective power and behave differently toward differently virulent bacteria.⁸

Another observation significant to us has been made in the study of the agglutination of bacteria. R. Greig Smith had previously⁹ asserted that the agglutination of bacteria, suspended in cultures, is controlled by the sedimentation of salts on their bodies. He now declares¹⁰ that a similar mechanical phenomenon is at the bottom of the differentiation in the behavior of phagocytes toward bacteria. Just as drops of chloroform in a solution will take up bits of shellac and refuse to take up glass, but will also englobe the latter when coated with the former, so will the cell membrane of the phagocytes allow bacteria to pass in when covered with salts precipitated from the environment which previously the cells had failed to englobe. He refers here to ultra microscopic particles. As these salt particles are inorganic matter, like dust particles, which come within the range of microscopic vision, we may see the pertinence of these observations to the differentiation which I insist exists between the action of the tonsillar epithelial cell toward dust and bacteria in the crypts.

In the leucocytes the persistence of this power of differentiation shows how strongly it is engrafted on their heredity. Silberberg¹¹ is quoted as saying: "The leucocytes of a rabbit sick with (chicken) cholera retain up to the death of the animal the power not only to distinguish virulent cholera bacteria from other bacteria, nonvirulent, but to distinguish also virulent cholera bacteria from nonvirulent cholera bacteria."

Whether these phenomena can be brought under the chemical conception with which Ehrlich started his theory is doubtful. Recently (1903) he seems inclined to acknowledge¹² that his formulæ must be extended to embrace the physical aspects of the problem. Loeb on the contrary insists¹³ that such phenomena are to be ascribed to chemical forces. Now, whether this is due to the excretion of some chemical substance by the bacterium or whether the cell in its turn excretes some culture media which bacteria in their turn seek or whether as Le Dantec quaintly puts it, it is a "physical emanation,"¹⁴ the process must be closely correlated with those of fecundation and food selection by the protozoa. Loeb, in discussing the former, says: "I consider it possible that the ciliary motion of the spermatozoon is required only to bring the spermatozoon into close contact,

and that the entrance of the spermatozoon into the interior of the egg protoplasm is due to surface tension forces."

Negative chemotaxis is observed in the lower protozoa and the various tropisms exhibited by them are both negative and positive. Jennings in his admirable work,¹⁵ speaking of the amoeba uses terms for a protozoon which may be applied as appropriately to the fixed as to the amoeboid cells of the metazoa. "The agents which produce a negative reaction are in general those which injure the organism in one way or another, while those inducing the positive reaction are beneficial." Now I suppose this selective action of the bacteria, this positive and negative chemotaxis, according to the changing needs and changing ability of the tonsillar epithelium, to be the part contributed by the surface cells to the defense of the whole organism of which they are the parts most exposed to the environment.

How these changes are brought about, by which at one time the same individual is susceptible and at another time not so, how one individual comes to be more susceptible than another can be only partially conjectured. Some stimulus affecting the sympathetic system¹⁶ sends a nervous current to the periphery which modifies the surface tension of the tonsillar cells whereby the bacterium gains an entrance. Whether ions of the electrolytic salts are set free in conformity with Loeb's experiments, whether the bacterial bodies thus or in some other way become coated with molecules of matter which change the conditions, as suggested by Greig Smith, I can not venture to say. The fact that dust passes and that usually bacteria do not pass the tonsillar epithelium is all I can assert from direct observation, but I submit that that is a most significant and important detail in the process of the body's defense.

44 WEST FORTY-NINTH STREET.

ON THE BEHAVIOR OF THE EOSINOPHILE LEUCOCYTES IN CASES OF PULMONARY TUBERCULOSIS.

BY

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In 1903 and 1904 one of us (Dr. Swan) made a study of the blood in twenty-five cases of pulmonary tuberculosis, the results of which were reported in the *Journal of the American Medical Association*, March 12, 1904.

One of the conclusions reached in the course of that study was the following: "9. The absence of the eosinophile cells from the blood may be looked upon as an unfavorable prognostic sign. The increase of these cells while the patient is under treatment may be taken as an indication that the progress of the disease has a tendency to become arrested."

It is the object of the present study to present further evidence of the behavior of the eosinophile

⁸ Bortel and Neumann, *Centralblatt für Bakteriologie*, xl, part 5, p. 792. Bordet, *Récherches sur la phagocytose*, *Annales de l'Institut Pasteur*, x, p. 191, 1896. See also the *Beitrag zur Frage der Rindertuberculose*, *Immunisierung*, *Beitrag zur experimentellen Therapie*, 1905, No. 10, p. 9.

⁹ *Centralblatt für Bakteriologie*, 1901, No. 2, p. 208.

¹⁰ *Centralblatt für Bakteriologie*, xxxiii, parts 13, 14, p. 422, 1903. To make the reference to work on positive chemotaxis more complete I may cite the work of Wirtgen, *Archives de physiologie expérimentale et de médecine*, 1901, No. 5, and so that of Silberberg and Jellong, *Annales de l'Institut Pasteur*, xv, 1901.

¹¹ Those who desire to review the extended series of articles which Ehrlich and his followers have published from time to time for six or seven years will find them translated for English readers by Dr. Charles Bodman in *Studies on Immunity*, John Wiley & Sons, 1906.

¹² *Immunities of Living Matter*, 1906.

¹³ Le Dantec sweeps about so much in an atmosphere of vague suggestion that he cannot possibly mean those who would otherwise be benighted by his striking way of putting things. Starting from the standpoint of Metchnikoff and Bordet, he arrives at a point of view from which he conceives of "immunity" as inherent in or loaded on albuminous bodies as magnetism is induced in steel by the electric current which whirls in a spiral around it in the wire of an electric bobbin.

¹⁵ *Behavior of the Lower Organisms*, 1906.

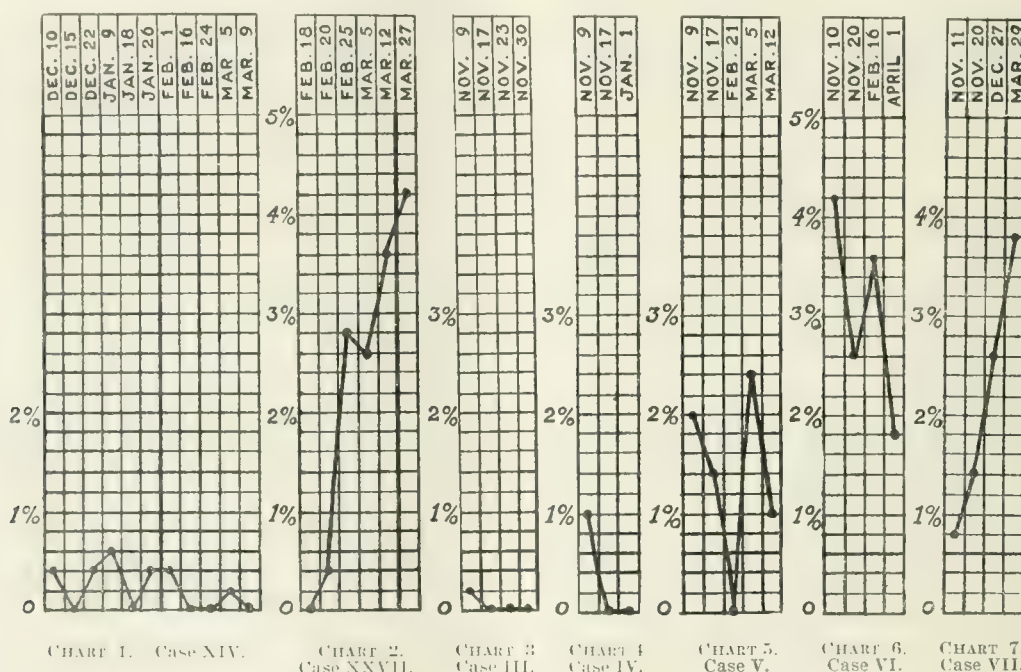
¹⁶ One of the very few cases in which I found a tonsil greatly present in the equivalent tissue of the faucial tonsils was that of a woman with exophthalmos and a large goitre, who had suffered from two attacks of septic sore throat, but who at the time of examination was well.

leucocytes in cases of tuberculosis, with special reference to the prognostic value of these cells found in the peripheral blood. Differential counts of the leucocytes in the blood of thirty-one cases of pulmonary tuberculosis are appended. No cell counts or hæmoglobin estimations were made. The blood smears were made by Dr. Karsner in the usual manner, and were subsequently stained and counted by Dr. Swan. In all cases 500 leucocytes were counted in specimens stained by Wright's method.

In bedfast patients we aimed to make counts once each week, or at more frequent intervals if the fatal termination appeared imminent. In those patients who were not bedfast it was the aim to make the counts once a month. The exigencies of hospital work prevented this plan from being carried out absolutely as originally designed.

The material was obtained from the wards of the Philadelphia General Hospital between November

they formed 1 per cent. of the circulating leucocytes. In Case XXIII there were 1.4 per cent. of eosinophiles in the circulating blood four days before death. Case XIV may be referred to as a typical example of the eosinophile count in a fatal case. One hundred and two days before death there were 0.4 per cent. of eosinophile cells in the peripheral blood; ninety-seven days before death the eosinophile cells were absent; ninety days before death there were 0.4 per cent.; seventy-two days before death there were 0.6 per cent.; sixty-three days before death they were absent; fifty-five days before death they formed 0.4 per cent. of the circulating leucocytes; forty-nine days before death they formed 0.4 per cent.; thirty-four days before death they were absent; twenty-six days before death they were absent; seventeen days before death they formed 0.2 per cent. of the leucocytes; and three days before death they were absent.



1, 1904, and May 1, 1905; at first through the courtesy of Dr. S. Solis Cohen and later through the courtesy of Dr. J. J. Walsh, after the establishment of the Department for Tuberculosis. We take this opportunity to thank Dr. Cohen and Dr. Walsh for permission to use their patients for the purposes of the study.

In the series of thirty-one cases twenty-six were fatal and five were stationary, or were improving under treatment at the time that the observations were discontinued.

A reference to the appended tables of the results will show that in the fatal cases the eosinophile cells were below 1 per cent., as a rule, at periods varying from 102 days before death to the day of death. There are two exceptions to this rule: Cases V and XXIII. In Case V the eosinophiles 130 days before death formed 2 per cent. of the leucocytes in the peripheral blood; 122 days before death they formed 1.4 per cent.; twenty-six days before death they were absent; fourteen days before death they formed 2.4 per cent.; and seven days before death

In the cases which remained stationary or which were improving under treatment the eosinophiles, while subject to fluctuations were present in fair proportion, usually over 1 per cent.

Case XXVII may be taken as an example: Thirty-seven days before discharge there were no eosinophiles found in the circulating blood; two days later there were 0.4 per cent.; five days later there were 2.8 per cent.; eight days later there were 2.6 per cent.; seven days later there were 3.6 per cent.; and on the day of discharge, fourteen days later, there were 4.2 per cent. of eosinophile cells in the peripheral blood.

Case VI is grouped in the stationary cases because at the time that the study was terminated the patient was in good general condition, up and about the ward, and showed no signs of the progress of the disease. He died eight months later. It will be seen that the tendency of the eosinophile cells was toward lower percentages throughout the time he was kept under observation.

At the time of the publication of the first study,

referred to, Dr. Swan thought that the observation of the behavior of the eosinophile cells in cases of pulmonary tuberculosis was an original one. Since then we have found in Ewing (*Clinical Pathology of the Blood*, Second Edition, 1903, page 162) the following statement:

In tuberculosis of lungs or other tissues an absence of eosinophile cells from the blood is often observed and this fact has been of considerable value in the differential diagnosis between this and other conditions in which normal or increased numbers of these cells are present; yet when tuberculosis is accompanied by cachexia and irregular suppuration eosinophile cells may reappear in moderate numbers. Neusser believes that when these cells persist in tuberculosis the outcome is usually favorable, since gouty subjects are comparatively resistant to this infection; yet tuberculosis in emphysematous lungs is not infrequently seen at autopsy.

In a paper by Howard G. Pesel (*Medical Press and Circular*, October 28, 1903) the author states that in certain cases the coarsely granular eosinophiles were noticed to increase with improvement. Pesel, however, observed an increase of the basophile cells accompanying improvement under treatment with plentiful nitrogenous diet and hygienic surroundings, upon which he lays more stress. There is nothing in our results which would tend to confirm the latter statement.

In a paper by Ullom and Craig (*American Journal of the Medical Sciences*, September, 1905) we find the following statement: "6. At the beginning of the investigation the eosinophiles seemed to increase with the patient's improvement, but further study did not support this view."

TABLE OF FATAL CASES.

Number of case.	Count made before death.	Per cent. Eosinophiles.	Number of case.	Count made before death.	Per cent. Eosinophiles.
I.....	2	0.2	XVII.....	1	0
II.....	19	0	.....	33	0
.....	11	0	.....	24	0.4
.....	5	0	.....	17	0
.....	24	0.2	XVIII.....	10	0
III.....	16	0	.....	5	0
.....	10	0	.....	Day of death.	
.....	3	0	.....	9	0.1
.....	36	1.0	XIX.....	3	0
IV.....	48	0	.....	5	0
.....	3	0	XX.....	74	0
.....	130	2.0	.....	67	0
.....	122	1.4	.....	59	0.4
V.....	26	0	.....	41	0.2
.....	14	2.4	XXI.....	27	0
.....	7	1.0	.....	13	0
.....	44	0	.....	10	0
IX.....	32	0.2	.....	3	0
.....	2	0	.....	4	0.2
.....	13	0.2	XXII.....	Day of death.	
XI.....	6	0	.....	4	0.2
.....	1	0	XXIII.....	8	1.4
XII.....	Day of death	0	XXIV.....	8	0
.....	2	0	XXV.....	Day of death.	
XIII.....	8	0	.....	19	0.2
.....	102	0.4	.....	12	0.2
.....	97	0	.....	3	0
.....	90	0.4	XXVIII.....	3	0
.....	72	0.6	.....	1	0
.....	63	0	.....	31	1.0
XIV.....	55	0.4	.....	14	0.2
.....	49	0.4	.....	7	0.2
.....	34	0	XXIX.....	Day of death.	
.....	26	0	.....	4	0.2
.....	17	0.2	XXX.....	1	0
.....	3	0	.....	Day of death.	
.....	43	0	XXXI.....	Day of death.	
XV.....	8	0.2	.....	1	0
.....	1	0	.....	35	0.2
XVI.....	35	0.2	.....	4	0
.....	4	0	.....	1	0
.....	1	0			

TABLE OF CASES IMPROVING UNDER TREATMENT.

Number of case.	Count made before discharge.	Per cent. Eosinophiles.	Number of case.	Count made before discharge.	Per cent. Eosinophiles.
.....	141	4.2	.....	136	0.8
.....	131	2.6	.....	125	0.4
VI.....	43	3.6	.....	74	0.4
.....	Day of discharge.		.....	63	0.4
.....	138	0.8	.....	Day of discharge.	
.....	129	1.1	.....	37	0
VII.....	92	2.6	.....	35	0.4
.....	Day of discharge.		.....	30	0.8
.....	3.8		.....	22	2.6
.....	0.8		.....	15	3.6
.....	92	1.0	.....	Day of discharge.	
VIII.....	61	0.6	.....	4.2	
.....	Day of discharge.				
.....	1.8				

In the light of these studies we should say that in cases of pulmonary tuberculosis the eosinophile cells tend to disappear from the circulating blood as the progress of the disease brings the fatal termination nearer, and that as the patient improves under treatment and as the disease shows a tendency to become arrested, the eosinophile cells reappear in the circulating blood. It appears that this tendency of the eosinophile cells up or down may be of some use as a prognostic sign.

It appears that this fluctuation of the eosinophile cells is a measure of the severity of the secondary infection with the pyogenic organisms and not an indication of the extent of the tuberculous process itself. In fact, the reappearance of eosinophile cells in the circulating blood coincident with the improvement of a case of phthisis is probably due to the removal of the chemotactic influence of the products of the growth of the pus organisms and the reassertion of the influence of the tuberculin manufactured in the tuberculous lesions.

CASE I.—Male, white, aged twenty-eight years.

Clinical Features.—Consolidation at left base and left apex. Laryngitis, night sweats, loss of weight, tubercle bacilli in sputum. No albuminuria, no hæmorrhage.

November 9, 1904, 3:30 p. m.: Temperature, 97.4°; pulse, 112; respirations, 40.

Polymorphonuclear neutrophiles.....	76.6
Lymphocytes.....	17.4
Transitionals.....	4.8
Eosinophiles.....	0.2
Myelocytes.....	1.0

Anisocytosis. In counting 500 leucocytes, two normoblasts were seen.

Patient died November 11th, at 12:15 a. m.

CASE II.—Male, white, aged forty-three years.

Clinical Features.—Consolidation of right apex, night sweats, loss of weight, slight albuminuria, tubercle bacilli in sputum.

November 9, 1904, 3:30 p. m.: Temperature, 99°; pulse, 112; respirations, 40.

Polymorphonuclear neutrophiles.....	76.0
Lymphocytes.....	14.8
Transitionals.....	9.0
Basophiles.....	0.2

Anisocytosis and poikilocytosis. Many degenerated leucocytes were seen.

November 17, 1904, 1:30 p. m.: Temperature, 99°; pulse, 112; respirations, 38.

Condition about the same as at the last note.

Polymorphonuclear neutrophiles.....	82.4
Lymphocytes.....	8.8
Transitionals.....	8.6
Basophiles.....	0.2

Anisocytosis. Leucocytes stain poorly.

November 23, 1904, 4:30 p. m.: Temperature, 98.2°; pulse, 103; respirations, 41.

Condition about the same as at the last note.

Polymorphonuclear neutrophiles	78.8
Lymphocytes	12.4
Transitionals	8.2
Eosinophiles	0.2
Basophiles	0.2
Myelocytes	0.4

Anisocytosis, polychromatophilia. Many degenerated leucocytes.

Patient died November 28, 1904, at 10:30 a. m.

CASE III.—Male, black, aged thirty-one years.

Clinical Features.—Consolidation of left apex, cavity at right apex, albuminuria, night sweats, loss of weight, tubercle bacilli in sputum, hæmoptysis five days before first count was made and for a day or two before that.

November 9, 1904, 3:30 p. m.: Temperature, 101°; pulse, 108; respirations, 34.

Polymorphonuclear neutrophiles	70.4
Lymphocytes	13.6
Transitionals	13.4
Eosinophiles	0.2
Basophiles	0.2
Myelocytes	2.2

Anisocytosis and polychromatophilia.

November 17, 1904, 2 p. m.: Temperature, 99.2°; pulse, 94; respirations, 30.

Patient is weaker than at the last note.

Polymorphonuclear neutrophiles	85.4
Lymphocytes	5.6
Transitionals	7.6
Eosinophiles	0.4
Basophiles	0.4
Myelocytes	1.0

Anisocytosis and poikilocytosis.

November 23, 1904, 4:30 p. m.: Temperature, 101°; pulse, 101; respirations, 35.

Condition about the same.

Polymorphonuclear neutrophiles	73.6
Lymphocytes	18.2
Transitionals	6.4
Myelocytes	1.8

Anisocytosis, poikilocytosis, and polychromatophilia.

November 30, 1904, 6 p. m.: Temperature, 98.8°; pulse, 128; respirations, 44.

Patient has been feeling much worse during the last forty-eight hours, cough increasing in severity.

Polymorphonuclear neutrophiles	87.4
Lymphocytes	7.6
Transitionals	4.8
Myelocytes	0.2

Anisocytosis and poikilocytosis.

Patient died December 3, 1904, at 6:30 p. m.

CASE IV.—Male, white, aged twenty-seven years.

Clinical Features.—Involvement of both apices, night sweats, loss of weight, hæmoptysis six months ago, sputum contains tubercle bacilli, albuminuria with casts.

November 9, 1904, 4 p. m.: Patient is up and about.

Polymorphonuclear neutrophiles	74.4
Lymphocytes	14.8
Transitionals	8.2
Eosinophiles	1.0
Basophiles	0.6
Myelocytes	1.0

Anisocytosis, granular degeneration. •

November 17, 1904: Condition about the same as at last note.

Polymorphonuclear neutrophiles	81.6
Lymphocytes	8.0
Transitionals	10.0
Basophiles	0.4

Granular degeneration. In counting 500 leucocytes, one normoblast was seen.

January 1, 1905, 8:40 p. m.: Temperature, 98°; pulse, 122; respirations, 44.

Since last note patient has been obliged to go to bed; he is very weak; pulse rapid and of low tension; complains of pain in chest.

Polymorphonuclear neutrophiles	79.2
Lymphocytes	11.0
Transitionals	8.6
Eosinophiles	0.2
Basophiles	0.2
Myelocytes	1.0

Anisocytosis, polychromatophilia, granular degeneration, few poikilocytes.

Patient died January 4, 1905, at 4:45 a. m.

CASE V.—Male, white, aged forty-eight years.

Clinical Features.—Consolidation of right apex of two years' duration, sputum contains tubercle bacilli. No hæmoptysis, no night sweats, no albuminuria.

November 9, 1904, 4 p. m.: Patient up and about.

Polymorphonuclear neutrophiles	55.6
Lymphocytes	33.6
Transitionals	7.6
Eosinophiles	2.0
Basophiles	0.8
Myelocytes	0.4

November 17, 1904, 3:30 p. m.: Condition same as at last note.

Polymorphonuclear neutrophiles	54.8
Lymphocytes	28.6
Transitionals	14.4
Eosinophiles	1.4
Basophiles	0.8

In counting 500 leucocytes, one normoblast was seen.

February 21, 1905, 9 p. m.: Temperature, 98.2°; pulse, 100; respirations, 28. Patient has complained of pain in the loins, has been transferred to the infirmary and is now in bed.

Polymorphonuclear neutrophiles	54.5
Lymphocytes	12.5
Transitionals	13.0

March 5, 1905, 11:30 a. m.: Temperature, 98.2°; pulse, 82; respirations, 27. Patient is weaker, spends most of his time in bed.

Polymorphonuclear neutrophiles	70.6
Lymphocytes	13.2
Transitionals	9.2
Eosinophiles	2.4
Basophiles	0.2
Myelocytes	4.4

Anisocytosis, polychromatophilia, granular degeneration. In counting 500 leucocytes one normoblast was seen.

March 12, 1905, 3:45 p. m.: Temperature, 98.2°; pulse, 90; respirations, 30. Patient is growing weaker.

Polymorphonuclear neutrophiles	59.6
Lymphocytes	28.0
Transitionals	10.2
Eosinophiles	1.0
Basophiles	0.6
Myelocytes	0.6

Anisocytosis. In counting 500 leucocytes one normoblast was seen. Patient died March 19, 1905, at 12:30 p. m.

CASE VI.—Male, white, aged thirty-five years.

Clinical features.—Consolidation of both apices of three years' duration. Hæmoptysis two years ago, albuminuria with casts, sputum contains tubercle bacilli. No night sweats.

November 10, 1904, 5 p. m.: Patient up and about.

Polymorphonuclear neutrophiles	66.0
Lymphocytes	23.8
Transitionals	4.4
Eosinophiles	4.2
Basophiles	1.0
Myelocytes	0.6

November 20th, 12 noon: Condition as at last note.

Polymorphonuclear neutrophiles	67.6
Lymphocytes	21.0
Transitionals	8.2
Eosinophiles	2.6
Basophiles	0.6

February 16, 1905, 4 p. m.: Temperature, 98°; pulse, 80; respiration, 24. Patient has been in bed for ten days and is weaker than at last note.

Polymorphonuclear neutrophiles	66.2
Lymphocytes	13.4
Transitionals	16.4
Eosinophiles	3.6
Basophiles	0.4

April 1, 1905, 10 a. m.: Temperature, 98°; pulse, 82; respiration, 28. Patient is confined to bed.

Polymorphonuclear neutrophiles	66.6
Lymphocytes	16.2
Transitionals	13.8
Eosinophiles	1.8
Basophiles	1.6

Condition on April 1, 1905, stationery. Patient died December 6, 1905.

CASE VII.—Male, white, aged sixty-five years.

Clinical Features.—Consolidation of both apices for

five months' duration. Night sweats, small hemorrhage from the lungs on November 10, 1904, albuminuria with casts, sputum contained tubercle bacilli.

November 11, 1904, 4:30 p. m.: Patient up and about the ward.

Polymorphonuclear neutrophiles	66.6 %
Lymphocytes	26.0 %
Transitionals	5.6 %
Eosinophiles	0.8 %
Basophiles	0.8 %
Myelocytes	1.0 %

November 20, 1904, 12 noon: Patient about the same.

Polymorphonuclear neutrophiles	75.2 %
Lymphocytes	12.2 %
Transitionals	10.6 %
Eosinophiles	1.4 %
Basophiles	0.4 %
Myelocytes	0.2 %

December 27, 1904, 4:35 p. m.: Improving.

Polymorphonuclear neutrophiles	62.0 %
Lymphocytes	26.1 %
Transitionals	8.6 %
Eosinophiles	2.0 %
Basophiles	0.4 %

March 29, 1905, 4:20 p. m.: Still improving.

Polymorphonuclear neutrophiles	60.6 %
Lymphocytes	24.6 %
Transitionals	10.1 %
Eosinophiles	3.8 %
Basophiles	0.6 %

Discharged from the hospital improved April 24, 1905.

CASE VIII.—Male, white, aged seventy-nine years.

Clinical Features.—Chronic fibroid phthisis of five years' duration. Sputum contains tubercle bacilli. This patient is number 4 in the series reported in 1904.

November 12, 1904, 12:30 p. m.: Patient up and about the ward.

Polymorphonuclear neutrophiles	80.6 %
Lymphocytes	11.6 %
Transitionals	6.4 %
Eosinophiles	0.8 %
Basophiles	0.6 %

December 27, 1904, 4:30 p. m.: Condition unchanged.

Polymorphonuclear neutrophiles	70.4 %
Lymphocytes	18.8 %
Transitionals	8.6 %
Eosinophiles	1.0 %
Myelocytes	1.2 %

January 27, 1905, 3 p. m.: Condition unchanged.

Polymorphonuclear neutrophiles	67.6 %
Lymphocytes	24.2 %
Transitionals	7.4 %
Eosinophiles	0.6 %
Basophiles	0.2 %

March 29, 1905, 4:20 p. m.: Condition unchanged.

Polymorphonuclear neutrophiles	71.2 %
Lymphocytes	17.0 %
Transitionals	9.1 %
Eosinophiles	1.8 %
Basophiles	0.2 %
Myelocytes	0.4 %

Discharged from hospital July 7, 1905, in the same condition.

CASE IX.—Male, white, aged forty-eight years.

Clinical Features.—Consolidation of left apex of eight weeks' duration. Albuminuria with casts, sputum contains tubercle bacilli.

November 15, 1904, 3 p. m.: Patient up and about.

Polymorphonuclear neutrophiles	86.8 %
Lymphocytes	5.6 %
Transitionals	7.6 %

Anisocytosis, poikilocytosis, and polychromatophilia.

November 26, 1904, 11:30 p. m.: Condition as at last note.

Polymorphonuclear neutrophiles	87.6 %
Lymphocytes	2.6 %
Transitionals	9.6 %
Eosinophiles	0.2 %

Anisocytosis and slight poikilocytosis.

December 27, 1904, 4:25 p. m.: Patient feels weaker, but is not bed fast.

Polymorphonuclear neutrophiles	90.4 %
Lymphocytes	6.0 %
Transitionals	3.6 %

Anisocytosis and many degenerated leucocytes.

Patient died suddenly December 29, 1904.

CASE X.—Male, white, aged fifty-eight years.

Clinical Features.—Cavity at left apex. Disease of three years' duration. Blood tinged sputum, night sweats, which have now disappeared, albuminuria, sputum contains tubercle bacilli.

November 15, 1904: Patient up and about the ward.

Polymorphonuclear neutrophiles	69.8 %
Lymphocytes	19.0 %
Transitionals	9.0 %
Eosinophiles	0.8 %
Basophiles	0.4 %
Myelocytes	1.0 %

Anisocytosis.

November 26, 1904, 11 a. m.: About the same.

Polymorphonuclear neutrophiles	64.0 %
Lymphocytes	28.8 %
Transitionals	6.2 %
Eosinophiles	0.4 %
Basophiles	0.2 %
Myelocytes	0.4 %

Anisocytosis.

December 27, 1904, 4:35 p. m.: Condition unchanged.

Polymorphonuclear neutrophiles	70.0 %
Lymphocytes	24.8 %
Transitionals	4.4 %
Eosinophiles	0.4 %
Basophiles	0.4 %

January 27, 1905, 3 p. m.: Condition as at last note.

Polymorphonuclear neutrophiles	69.4 %
Lymphocytes	24.2 %
Transitionals	5.0 %
Eosinophiles	0.4 %
Basophiles	0.2 %
Myelocytes	1.8 %

April 1, 1905, 9:40 a. m.: Condition about the same.

Polymorphonuclear neutrophiles	71.2 %
Lymphocytes	18.8 %
Transitionals	9.2 %
Eosinophiles	0.4 %
Basophiles	0.4 %

Patient was alive and in fairly good condition January 18, 1906.

CASE XI.—Female, white, aged forty-one years.

Clinical Features.—Cavities at both apices of two years' duration. Has had night sweats and hæmoptysis, last hæmorrhage one month ago. Albuminuria, diarrhœa, sputum contained tubercle bacilli.

November 20, 1904, 3 p. m.: Temperature, 99.2°; pulse, 92; respiration, 32.

Polymorphonuclear neutrophiles	88.6 %
Lymphocytes	5.6 %
Transitionals	5.6 %
Eosinophiles	0.2 %

Anisocytosis and granular degeneration.

November 27, 1904, 3 p. m.: Temperature, 98.6°; pulse, 106; respiration, 28. Some improvement in the diarrhœa.

Polymorphonuclear neutrophiles	87.4 %
Lymphocytes	8.8 %
Transitionals	3.8 %

Anisocytosis.

December 2, 1904, 5:05 p. m.: Temperature, 97°; pulse, 90; respiration, 30. Diarrhœa continues, patient is gradually growing weaker.

Polymorphonuclear neutrophiles	81.6 %
Lymphocytes	13.1 %
Transitionals	5.0 %

Patient died December 3, 1904, at 9 a. m.

CASE XII.—Male, black, aged thirty-eight years.

Clinical Features.—Left apex consolidated; right apex consolidated. Sputum contained tubercle bacilli. Lower thoracic Pott's disease, chronic transverse myelitis, bed sores.

November 30, 1904, 5:30 p. m.: Temperature, 96.2°; (axilla); pulse, 132; respiration, 40.

Polymorphonuclear neutrophiles	81.2 %
Lymphocytes	7.6 %
Transitionals	9.8 %
Myelocytes	1.4 %

Granular degeneration.

Patient died November 30, 1904, at 11 p. m.

CASE XIII.—Female, black, aged twenty-one years.

Clinical Features.—Cavity at right apex, consolidation of left apex. Duration of illness one year, blood

streaked sputum, night sweats, laryngitis, albuminuria, sputum contains tubercle bacilli.

December 2, 1904, 5 p. m.: Temperature, 103°; pulse, 130; respiration, 38.

Polymorphonuclear neutrophiles 90.0 %
Lymphocytes 3.2 %
Transitionals 6.8 %

Anisocytosis.

December 8, 1904, 6:30 p. m.: Temperature, 104°; pulse, 160; respiration, 46. Patient appears to be in great distress, but says he feels well, except for pain in her left side.

Polymorphonuclear neutrophiles 93.6 %
Lymphocytes 3.8 %
Transitionals 2.6 %

Anisocytosis, poikilocytosis.

Died December 10, 1904, at 4:35 a. m.

CASE XIV.—Male, white, aged forty-six years.

Clinical Features.—Cavity at left apex, cavity at right apex, pleuritis of left base, disease of one year's dura-

Polymorphonuclear neutrophiles 83.0 %
Lymphocytes 9.8 %
Transitionals 6.2 %
Eosinophiles 0.6 %
Basophiles 0.4 %

Anisocytosis and poikilocytosis.

January 18, 1905, 8 p. m.: Temperature, 99°; pulse, 80; respiration, 36. Patient has been up and about for two days, and says that he feels fairly well.

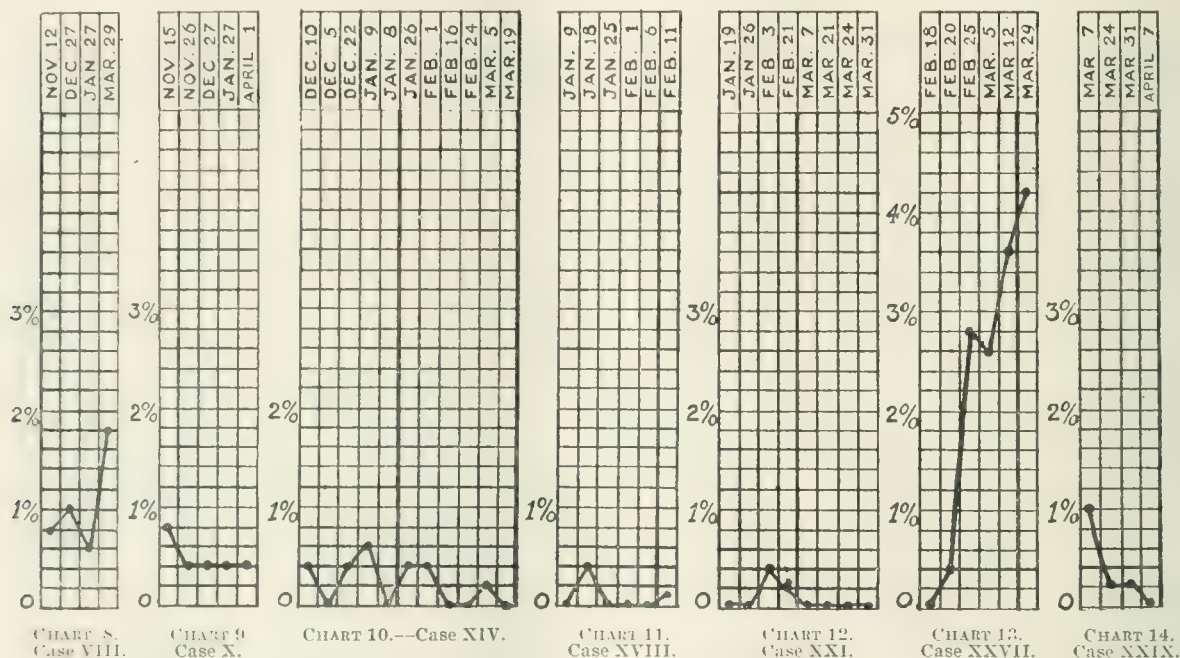
Polymorphonuclear neutrophiles 85.6 %
Lymphocytes 6.4 %
Transitionals 8.0 %

January 26, 1905, 7:50 p. m.: Temperature, 98°; pulse, 80; respiration, 25. Somewhat weaker.

Polymorphonuclear neutrophiles 81.6 %
Lymphocytes 9.4 %
Transitionals 7.4 %
Eosinophiles 0.4 %
Basophiles 0.6 %
Myelocytes 0.6 %

Anisocytosis, poikilocytosis.

February 1, 1905, 10 a. m.: Temperature, 97°; pulse,



tion. Hæmoptysis nine months ago, night sweats, cough, expectoration, loss of weight and strength, sputum contains tubercle bacilli.

December 10, 1904, 4:30 p. m.: Temperature, 99.3°; pulse, 96; respiration, 36.

Polymorphonuclear neutrophiles 78.2 %
Lymphocytes 13.6 %
Transitionals 5.8 %
Eosinophiles 0.4 %
Basophiles 0.2 %
Myelocytes 1.8 %

Anisocytosis.

December 15, 1904, 4:45 p. m.: Temperature, 100°; pulse, 110; respiration, 28. Patient is somewhat weaker.

Polymorphonuclear neutrophiles 84.4 %
Lymphocytes 10.0 %
Transitionals 5.4 %
Myelocytes 0.2 %

Anisocytosis.

December 22, 1904, 4:30 p. m.: Temperature, 98°; pulse, 86; respiration, 24; condition about as at last note.

Polymorphonuclear neutrophiles 76.2 %
Lymphocytes 14.8 %
Transitionals 8.6 %
Eosinophiles 0.4 %

Anisocytosis.

January 9, 1905, 8 p. m.: Temperature, 99°; pulse, 80; respiration, 28. Patient is feeling somewhat better than at last note.

80; respiration, 25. Patient has a fresh pleurisy at the right base, and is much weaker.

Polymorphonuclear neutrophiles 85.0 %
Lymphocytes 9.4 %
Transitionals 3.8 %
Eosinophiles 0.4 %
Basophiles 0.6 %
Myelocytes 0.8 %

February 16, 1905, 4 p. m.: About the same. Temperature, 96°; pulse, 80; respiration, 20.

Polymorphonuclear neutrophiles 86.0 %
Lymphocytes 7.8 %
Transitionals 4.8 %
Basophiles 0.8 %
Myelocytes 0.6 %

February 24, 1905, 10:30 a. m.: Temperature, 97°; pulse, 72; respiration, 30. Patient is weaker.

Polymorphonuclear neutrophiles 85.2 %
Lymphocytes 9.4 %
Transitionals 4.4 %
Myelocytes 1.0 %

March 5, 1905, 11:30 a. m.: Temperature, 98.2°; pulse, 90; respiration, 26. Patient is about the same.

Polymorphonuclear neutrophiles 81.4 %
Lymphocytes 11.0 %
Transitionals 5.6 %
Eosinophiles 0.2 %
Basophiles 0.2 %
Myelocytes 1.6 %

Anisocytosis, poikilocytosis, and polychromatophilia.

March 19, 1905, 8 p. m.: Temperature, 98.2°; pulse, 98; respiration, 28. Patient is semicomatose, bed fast,

natch weaker than at last note. Diazo reaction was demonstrated in his urine on March 5, 1905.

Polymorphonuclear neutrophiles	91.8 %
Lymphocytes	6.6 %
Transitionals	1.6 %

Anisocytosis, poikilocytosis, and polychromatophilia.

Patient died March 22, 1905, 3:15 a. m.

CASE XV.—Male, white, aged forty years.

Clinical Features.—Both apices consolidated. Disease of one year's duration. Cough, expectoration, great loss of flesh, night sweats, tubercle bacilli in sputum. Fistula in ano of six months' standing.

November 10, 1904, 4:55 p. m.: Temperature, 102°; pulse, 100; respiration, 34.

Polymorphonuclear neutrophiles	66.2 %
Lymphocytes	19.4 %
Transitionals	14.4 %

December 15, 1904, 4:45 p. m.: Temperature, 97°; pulse, 88; respiration, 30. Condition as at last note.

Polymorphonuclear neutrophiles	77.6 %
Lymphocytes	18.1 %
Transitionals	3.6 %
Eosinophiles	0.2 %
Basophiles	0.2 %
Myelocytes	2.6 %

Anisocytosis.

December 22, 1904, 4:55 p. m.: Temperature, 97.2°; pulse, 88; respiration, 50. Patient is much weaker.

Polymorphonuclear neutrophiles	81.8 %
Lymphocytes	16.2 %
Transitionals	2.0 %

Died December 23, 1904, at 5:30 p. m.

CASE XVI.—Male, white, aged thirty-two years.

Clinical Features.—Cough, expectoration, loss of flesh and strength for fifteen months. No hæmoptysis or night sweats. Cavity at each apex. Albuminuria and laryngitis; sputum contained tubercle bacilli.

December 19, 1904: Patient up and about the ward.

Polymorphonuclear neutrophiles	72.2 %
Lymphocytes	18.0 %
Transitionals	8.6 %
Eosinophiles	0.2 %
Basophiles	0.6 %
Myelocytes	0.4 %

Anisocytosis.

January 19, 1905, 9 p. m.: Temperature, 98.2°; pulse, 92; respiration, 36. Patient confined to bed, weaker, and complains of difficulty in swallowing.

Polymorphonuclear neutrophiles	83.0 %
Lymphocytes	12.2 %
Transitionals	2.4 %
Myelocytes	2.4 %

Anisocytosis.

January 22, 1905, 8 p. m.: Temperature, 100°; pulse, 68; respiration, 40. Patient much weaker than at last note.

Polymorphonuclear neutrophiles	78.6 %
Lymphocytes	11.8 %
Transitionals	6.6 %

Anisocytosis.

Patient died January 23, 1905, at 5 a. m.

CASE XVII.—Male, white, aged twenty-eight years.

Clinical Features.—Cough, expectoration, loss of flesh, hæmoptysis and night sweats for sixteen months. Last hæmoptysis five days ago. Consolidation of upper lobes of both lungs, and of middle lobe of right lung. Albuminuria with casts, sputum contains tubercle bacilli.

December 23, 1904, 11:50 a. m.: Temperature, 100.8°; pulse, 120; respiration, 40.

Polymorphonuclear neutrophiles	94.0 %
Lymphocytes	2.8 %
Transitionals	0.6 %
Myelocytes	2.6 %

Anisocytosis.

Patient died at 10 a. m., December 24, 1904.

CASE XVIII.—Female, white, aged forty years.

Clinical Features.—Cough, expectoration, hæmoptysis, and night sweats for two years. Cavity at right apex; consolidation of left apex. Albuminuria, diarrhoea, sputum contains tubercle bacilli.

January 9, 1905, 8 p. m.: Temperature, 100°; pulse, 100; respiration, 36.

Polymorphonuclear neutrophiles	79.6 %
Lymphocytes	17.0 %
Transitionals	3.0 %
Basophiles	0.4 %
Myelocytes	4.0 %

Anisocytosis and poikilocytosis.

January 18, 1905, 8 p. m.: Temperature, 99°; pulse, 100; respiration, 28. Patient is weaker and complains of troublesome diarrhoea.

Polymorphonuclear neutrophiles	88.4 %
Lymphocytes	7.0 %
Transitionals	2.0 %
Basophiles	0.2 %
Myelocytes	0.8 %

January 25, 1905, 10:10 a. m.: Diarrhoea somewhat better.

Polymorphonuclear neutrophiles	91.0 %
Lymphocytes	4.6 %
Transitionals	0.6 %
Basophiles	0.4 %
Myelocytes	1.4 %

In counting 500 leucocytes, one normoblast was seen.

February 1, 1905, 10 a. m.: Temperature, 97°; pulse, 120; respiration, 35. Patient is weaker, still suffers from diarrhoea.

Polymorphonuclear neutrophiles	69.4 %
Lymphocytes	6.2 %
Transitionals	1.2 %
Myelocytes	1.2 %

Anisocytosis, many degenerated leucocytes.

February 6, 1905, 10 a. m.: Temperature, 98°; pulse, 120; respiration, 35. Patient is about the same as at last note.

Polymorphonuclear neutrophiles	88.8 %
Lymphocytes	6.6 %
Transitionals	2.4 %
Myelocytes	2.2 %

February 11, 1905, 9:50 a. m.: Temperature, 95°; pulse not obtainable; respiration, 28. Patient is comatose and pulseless.

Polymorphonuclear neutrophiles	68.4 %
Lymphocytes	5.6 %
Transitionals	3.8 %
Eosinophiles	0.1 %
Basophiles	0.1 %
Myelocytes	22.0 %

One thousand leucocytes counted.

Anisocytosis.

Patient died at 4 p. m., February 11, 1905.

CASE XIX.—Male, white, aged sixty-eight years.

Clinical Features.—Patient complains of loss of flesh and strength, cough, and expectoration. Cavity at right apex, consolidation of left apex. Sputum contains tubercle bacilli. Albuminuria.

January 13, 1905, 7:50 p. m.: Temperature, 97°; pulse, 100; respiration, 20.

Polymorphonuclear neutrophiles	81.8 %
Lymphocytes	14.6 %
Transitionals	2.0 %
Basophiles	0.2 %
Myelocytes	1.4 %

January 19, 1905, 10 a. m.: Temperature, 96°; pulse, 90; respiration, 22.

Polymorphonuclear neutrophiles	87.4 %
Lymphocytes	7.2 %
Transitionals	1.2 %
Basophiles	0.2 %
Myelocytes	1.6 %

Patient died January 22, 1905, at 1:30 p. m.

CASE XX.—Male, white, aged fifty-one years.

Clinical Features.—Consolidation of both apices. Disease of one year's duration. Loss of flesh and strength, no night sweats, no hæmoptysis. Sputum contained tubercle bacilli.

January 13, 1905, 8 p. m.: Temperature, 99°; pulse, 130; respiration, 35.

Polymorphonuclear neutrophiles	84.4 %
Lymphocytes	7.2 %
Transitionals	1.2 %
Myelocytes	0.2 %

Anisocytosis, poikilocytosis, polychromatophilia, and granular degeneration.

Patient died January 18, 1905, at 7 a. m.

CASE XXI.—Female, white, aged thirty-nine years.

Clinical Features.—Consolidation at left apex; cavity at right apex. Disease of nine months' duration. Laryngitis, albuminuria. Sputum contains tubercle bacilli.

January 19, 1905, 9:10 p. m.: Temperature, 101°; pulse, 120; respiration, 32.

Polymorphonuclear neutrophiles.....	72.6 %
Lymphocytes.....	19.0 %
Transitionals.....	3.1 %
Eosinophiles.....	0.2 %
Basophiles.....	1.2 %
Myelocytes.....	4.8 %

Anisocytosis, polychromatophilia.

January 26, 1905, 8 p. m.: Temperature, 101°; pulse, 120; respiration, 40.

Polymorphonuclear neutrophiles.....	79.8 %
Lymphocytes.....	10.2 %
Transitionals.....	1.2 %
Eosinophiles.....	0.6 %
Basophiles.....	0.6 %
Myelocytes.....	8.2 %

Poikilocytosis.

February 3, 1905, 8:30 p. m.: Patient is better, is up and about the ward. Complains of substernal pain.

Polymorphonuclear neutrophiles.....	73.0 %
Lymphocytes.....	13.4 %
Transitionals.....	6.0 %
Eosinophiles.....	0.4 %
Basophiles.....	0.8 %
Myelocytes.....	6.4 %

February 21, 1905, 9 p. m.: Temperature, 99.8°; pulse, 120; respiration, 30. Patient is again in bed, complains of loss of appetite, diarrhoea, and frequent micturition.

Polymorphonuclear neutrophiles.....	82.8 %
Lymphocytes.....	8.4 %
Transitionals.....	6.2 %
Eosinophiles.....	0.2 %
Basophiles.....	0.2 %
Myelocytes.....	2.2 %

Anisocytosis, poikilocytosis, and polychromatophilia.

March 7, 1905, 4:30 p. m.: Patient up and about the ward, still has diarrhoea and substernal pain.

Polymorphonuclear neutrophiles.....	63.4 %
Lymphocytes.....	20.4 %
Transitionals.....	15.2 %
Eosinophiles.....	0.6 %
Basophiles.....	0.4 %

Anisocytosis, poikilocytosis, many degenerated leucocytes.

March 21, 1905, 11 a. m.: Temperature, 98.2°; pulse, 120; respiration, 40. Again bed fast, weakness, and swelling of legs.

Polymorphonuclear neutrophiles.....	76.4 %
Lymphocytes.....	17.0 %
Transitionals.....	5.0 %
Myelocytes.....	1.6 %

March 24, 1905, 4:30 p. m.: Temperature, 96.7°; pulse, 152; respiration, 52. Patient is much weaker.

Polymorphonuclear neutrophiles.....	91.4 %
Lymphocytes.....	5.2 %
Transitionals.....	3.0 %
Myelocytes.....	0.4 %

March 31, 1905, 3 p. m.: Temperature, 97°; pulse, 112; respiration, 40. Patient a little stronger than at last note. Feet very œdematous.

Polymorphonuclear neutrophiles.....	85.8 %
Lymphocytes.....	9.6 %
Transitionals.....	3.8 %
Myelocytes.....	0.8 %

Patient died at 4 p. m., April 3, 1905.

CASE XXII.—Male, white, aged thirty-six years.

Clinical Features.—Cavity at right apex, consolidation of left apex. Illness of six months' duration. Loss of weight and strength, cough, and expectoration. Albuminuria. Sputum contains tubercle bacilli.

January 26, 1905, 7:50 p. m.: Temperature, 102°; pulse, 120; respiration, 35.

Polymorphonuclear neutrophiles.....	68.8 %
Lymphocytes.....	13.6 %
Transitionals.....	10.6 %
Eosinophiles.....	0.2 %
Basophiles.....	0.2 %
Myelocytes.....	6.6 %

Anisocytosis, poikilocytosis. In counting 500 leucocytes, one normoblast was found.

January 30, 1905, 10 a. m.: Temperature, 95°; pulse, 130; respiration, 45. Patient is semicomatose and has general convulsions. Urine diminished, uræmic odor of breath, contracted pupils, almost pulseless, breathing labored. No evidence of paralysis; but there is a general spasticity.

Polymorphonuclear neutrophiles.....	71.2 %
Lymphocytes.....	14.0 %
Transitionals.....	8.4 %
Eosinophiles.....	0.2 %
Myelocytes.....	6.2 %

Anisocytosis, poikilocytosis. In counting 500 leucocytes, six normoblasts and four megaloblasts were found.

Patient died January 30, 1905, at 11 a. m.

CASE XXIII.—Male, white, aged thirty years.

Clinical Features.—Consolidation and cavity formation in right lung. Left lung showed compensatory hypertrophy. Laryngitis. Sputum contains tubercle bacilli.

January 27, 1905, 3:30 p. m.: Temperature, 97.2°; pulse, 108; respiration, 25.

Polymorphonuclear neutrophiles.....	70.6 %
Lymphocytes.....	10.0 %
Transitionals.....	13.2 %
Eosinophiles.....	1.4 %
Basophiles.....	0.6 %
Myelocytes.....	4.2 %

Patient died at 1 p. m., January 31, 1905, after developing left sided pleuritis.

CASE XXIV.—Female, white, aged thirty-three years.

Clinical Features.—Consolidation of entire right lung, doubtful cavity. Consolidation of left apex. Albuminuria. Sputum contains tubercle bacilli.

February 6, 1905, 9:50 a. m.: Temperature, pulse, and respiration not taken.

Polymorphonuclear neutrophiles.....	82.2 %
Lymphocytes.....	7.4 %
Transitionals.....	10.2 %
Basophiles.....	0.2 %

Patient died at 11:15 p. m., February 14, 1905.

CASE XXV.—Female, white, aged thirty years.

Clinical Features.—Consolidation of both apices with possible cavity at left apex. Patient very anæmic, albuminuria. Sputum contains tubercle bacilli.

February 17, 1905, 12:40 p. m.: Temperature, 101°; pulse, 152; respiration, 64.

Polymorphonuclear neutrophiles.....	85.0 %
Lymphocytes.....	7.8 %
Transitionals.....	5.0 %
Myelocytes.....	2.2 %

Anisocytosis, few poikilocytes.

Patient died at 1:30 p. m., February 17, 1905.

CASE XXVI.—Male, white, aged forty-six years.

Clinical Features.—Cavities at both apices. Albuminuria. Sputum contains tubercle bacilli.

February 17, 1905, 8 p. m.: Temperature, 100.2°; pulse, 104; respiration, 32.

Polymorphonuclear neutrophiles.....	84.8 %
Lymphocytes.....	5.8 %
Transitionals.....	9.0 %
Eosinophiles.....	0.2 %
Basophiles.....	0.2 %

February 24, 1905, 10:45 a. m.: Temperature, 100°; pulse, 100; respiration, 25. Patient has been bed fast for two weeks on account of weakness.

Polymorphonuclear neutrophiles.....	78.8 %
Lymphocytes.....	6.2 %
Transitionals.....	11.0 %
Eosinophiles.....	0.2 %
Basophiles.....	0.6 %
Myelocytes.....	3.2 %

March 5, 1905, 11 a. m.: Temperature, 101°; pulse, 120; respiration, 30. Patient is much weaker.

Polymorphonuclear neutrophiles.....	89.4 %
Lymphocytes.....	6.6 %
Transitionals.....	4.0 %

Patient died March 8, 1905, at 1 p. m.

CASE XXVII.—Male, white, aged thirty-six years.

Clinical Features.—Cavity right apex, consolidation of left apex. Patient had a large hæmorrhage three days before admission, and immediately after admission had a second hæmorrhage of one pint of blood.

Pain in the left side of the chest. Albuminuria with casts. Sputum contains tubercle bacilli.

February 18, 1905, 10 p. m.: Temperature, 98.2°; pulse, 114; respirations, 20. Immediately after the second hæmorrhage.

Polymorphonuclear neutrophiles	75.8 %
Lymphocytes	11.6 %
Transitionals	7.4 %
Eosinophiles	0.2 %
Basophiles	0.2 %
Myelocytes	5.0 %

Anisocytosis.

February 20, 1905, 10 a. m.: Temperature, 99.2°; pulse, 80; respiration, 22. Patient is much better. Shows only an occasional streak of blood in his sputum.

Polymorphonuclear neutrophiles	61.4 %
Lymphocytes	22.6 %
Transitionals	14.2 %
Eosinophiles	9.4 %
Basophiles	9.4 %
Myelocytes	1.0 %

February 25, 1905, 8 p. m.: Temperature, 101°; pulse, 70; respiration, 24. Patient better, has not expectorated blood since last note.

Polymorphonuclear neutrophiles	59.6 %
Lymphocytes	26.2 %
Transitionals	10.8 %
Eosinophiles	2.8 %
Basophiles	0.6 %

March 5, 1905, 11 a. m.: Temperature, 98.4°; pulse, 72; respiration, 24. Patient still improving.

Polymorphonuclear neutrophiles	57.2 %
Lymphocytes	26.6 %
Transitionals	11.0 %
Eosinophiles	2.6 %
Basophiles	0.4 %
Myelocytes	2.2 %

March 12, 1905, 3:45 p. m.: Temperature, 99°; pulse, 72; respiration, 24. Patient sits up nearly all day.

Polymorphonuclear neutrophiles	56.4 %
Lymphocytes	31.6 %
Transitionals	7.4 %
Eosinophiles	3.6 %
Basophiles	0.6 %
Myelocytes	0.4 %

March 27, 1905. Patient up and about the ward. Temperature has been normal for two weeks.

Polymorphonuclear neutrophiles	73.8 %
Lymphocytes	12.8 %
Transitionals	9.0 %
Eosinophiles	4.2 %
Basophiles	0.2 %

Discharged at his own request.

CASE XXVIII.—Male, white, aged fifty-four years.

Clinical Features.—Cavity at right apex, consolidation at left apex. Sputum contains tubercle bacilli.

February 25, 1905, 8 p. m.: Temperature, 99°; pulse, 110; respiration, 26.

Polymorphonuclear neutrophiles	77.2 %
Lymphocytes	9.8 %
Transitionals	7.0 %
Myelocytes	6.0 %

Anisocytosis. In counting 500 leucocytes, one normoblast was seen.

February 27, 1905, 12 noon: Temperature, 96.8°; pulse, 118; respiration, 32. Patient comatose and moribund.

Polymorphonuclear neutrophiles	90.6 %
Lymphocytes	6.0 %
Transitionals	3.2 %
Myelocytes	0.2 %

Patient died at 9:30 a. m., February 28, 1905.

CASE XXIX.—Female, white, aged thirty-three years.

Clinical Features.—Cavity at left apex, consolidation at right apex. Sputum contains tubercle bacilli.

March 7, 1905, 5 p. m.: Temperature, 101.8°; pulse, 112; respiration, 40.

Polymorphonuclear neutrophiles	89.6 %
Lymphocytes	4.4 %
Transitionals	4.8 %
Eosinophiles	1.0 %
Basophiles	0.2 %

Anisocytosis.

March 24, 1905, 4:30 p. m.: Temperature, 100°; pulse, 112; respiration, 38. Patient stronger, sits up for several hours each day.

Polymorphonuclear neutrophiles	84.8 %
Lymphocytes	10.4 %
Transitionals	2.6 %
Eosinophiles	0.2 %
Basophiles	0.4 %
Myelocytes	1.6 %

Anisocytosis, poikilocytosis, polychromatophilia.

March 31, 1905, 3 p. m.: Temperature, 98°; pulse, 112; respiration, 38. Patient weaker, confined to bed.

Polymorphonuclear neutrophiles	82.2 %
Lymphocytes	10.8 %
Transitionals	6.0 %
Eosinophiles	0.2 %
Basophiles	0.2 %

Anisocytosis, poikilocytosis, polychromatophilia.

April 7, 1905, 1:30 p. m.: Temperature, 97°; pulse, 118; respiration, 38. Patient is much weaker, moribund.

Polymorphonuclear neutrophiles	93.4 %
Lymphocytes	3.4 %
Transitionals	2.4 %
Myelocytes	0.8 %

Patient died at 4:30 p. m., April 7, 1905.

CASE XXX.—Female, white, aged twenty-four years.

Clinical Features.—Cavity at left apex, consolidation of right apex. Pleural friction rub at right base, bed sores. Sputum contains tubercle bacilli.

March 12, 1905, 3:45 p. m.: Temperature, 97.6°; pulse, 122; respiration, 40.

Polymorphonuclear neutrophiles	65.2 %
Lymphocytes	32.2 %
Transitionals	1.2 %
Eosinophiles	0.2 %
Myelocytes	1.2 %

Anisocytosis, poikilocytosis, polychromatophilia. In counting 500 leucocytes, four normoblasts and one megaloblast were found.

March 15, 1905, 8:30 p. m.: Temperature, 97.8°; pulse, 120; respiration, 46. Patient much weaker.

Polymorphonuclear neutrophiles	69.0 %
Lymphocytes	15.0 %
Transitionals	8.4 %
Myelocytes	7.6 %

Anisocytosis, poikilocytosis, polychromatophilia. In counting 500 leucocytes, thirteen normoblasts and three megaloblasts were found.

Patient died at 1:15 a. m., March 16, 1905.

CASE XXXI.—Male, white, aged fifty-four years.

Clinical Features.—Cavity at right apex, cavity at left apex. Pleural friction at left base posteriorly. Albuminuria with casts. Sputum contains tubercle bacilli.

March 15, 1905, 1 p. m.: Temperature, 99.4°; pulse, 110; respiration, 38.

Polymorphonuclear neutrophiles	87.0 %
Lymphocytes	5.8 %
Transitionals	7.2 %

Anisocytosis, polychromatophilia.

Patient died at 6:30 p. m., March 15, 1905.

3713 WALNUT STREET.

THE ESSENTIALS FOR SUCCESS IN MEDICINE.*

By CHARLES E. NAMMACK, M. D.,

New York,

Professor of Clinical Medicine, Cornell University Medical College; Visiting Physician to Bellevue Hospital.

I have been honored by an invitation from your secretary to speak to you about the things, not set down in your textbooks, which make for success in your chosen calling. By success I do not mean wealth, or influence, or fame, the presidency of a medical society, or a professorship in a medical college. Success is a relative term; there is a dignity in mediocrity as well as a dignity of greatness, and the best doctor is often one of whom the public hears the least. Each of you has but one chance in one hundred thousand to become the leading physician of these United States, but one chance in fourteen thousand to lead the profession of this Empire

* Address delivered before the Cornell University medical students, January 30, 1907.

State, and but one chance in six thousand among your regular brethren in this great city, but you have one chance in one anywhere to attain the happiest and most useful lot given to man, that is, to be a vigorous, wholesouled, intelligent, general practitioner. "No physician has the right to consider himself as belonging to himself," is a saying attributed to Aristotle, and certainly the public takes that eminent philosopher's view of the matter. The common tendency is to think physicians immune to fatigue, as beings who lead a sort of charmed existence. People expect from you the heroism of constant service, not the kind that does one flaring deed which makes men stare and shout, but the kind of courage regardless of personal risk that is never wanting, in highways or in byways, with rich or with poor, among the humble or the proud. They expect you to give up days and nights, meals and sleep, to the battle with disease and vice, and when your personal happiness conflicts with this great human ideal, they expect you to be consoled with the doctrine that the right to claim such happiness is as nothing compared to the privilege of resigning it. Are you made of the stuff which can willingly adopt this life of renunciation? If so, the main body of your glorious profession will welcome and absorb you. If not, turn back and seek some other pursuit. Earnestness, self denial, and contentment with a little, can be your only rewards in medicine. As Hamerton says of the intellectual life, the medical life "can offer you but one satisfaction, for all its promises are reducible simply to this, that you shall come at last, after infinite labor, into contact with some great reality; that you shall know, and do, in such sort that you will feel yourself on firm ground and be recognized—probably not much applauded, yet recognized—as a fellow laborer by other knowers and doers." This is all that success means to the physician. This has contented him through all the ages.

The essentials for this success are easily remembered. They are but three; time, work, and loyalty. And of these, the master word is work. Time is the condition that presses most heavily on the young physician, yet it can always be employed aright, and only those who expect too much are ever discouraged. It is said that Sir Andrew Clark worked ten years for bread alone, ten years more for bread and butter, and the next twenty years for cakes and ale. There is no need to be idle. The poor we have always with us, and there is always a vacancy in the dispensaries for an industrious, conscientious man. The excellent work which can be done with dispensary out patients is well illustrated by Byron Bramwell's *Atlas of Clinical Medicine*. Sir Lauder Brunton worked twenty years in an out patient department before he received a ward appointment. Ours is not a dead profession, with its facts classified and arranged and laid away like specimens in a geological cabinet, but a living, growing science of which the last three decades are full of achievement, the coming years full of promise. Alexander's lament need not be yours, for though you chain many a captive bacillus at your chariot wheels, there are many more left for you to conquer. Choose, then, the part you will play in the coming years. There is plenty of choice. If you are a studious laboratory man, make a college attachment. If you are cul-

tured and wealthy, wait for the practice and confidence of your own class. If you have country tastes and a love for Nature, shun the city. If you are an adventurous spirit, the army and navy are always in need of you. If you are an inflexible man who must live by mathematical rule, the public sanitary service will give scope to your abilities. He who finds himself early, saves time and texture and torture. The mistakes in medicine come from trying to fit square pegs into round holes. But on the medical board the holes are not only numerous, but of all conceivable sizes and shapes, and the young doctor who cannot fit into one must be exceptionally angular, or exceptionally unyielding, or both. Work, to be effective, must be combined with pleasure in the doing and system in the application. The amount of misdirected energy and wasted time that we see every day is appalling. "Perhaps the most valuable result of all education," says Huxley, "is the ability to make yourself do the thing you have to do when it ought to be done, whether you like it or not." You must deny yourself the amusement of forming hypotheses instead of the drudgery of making observations if you would succeed in medicine. Do not lose heart over your allotted work because some other man may be thinking and saying and getting and doing a little better things. Do your best—not another man's best, but your best. Fill your place—not another man's place, but your place. Run your race—not another man's race, but your race. And the test of how you are doing and working and running will be your own individual progress, not another man's. Take account of stock, as a merchant does, and if at the end of five years, or of ten years, you have better thoughts, better books, better habits, better friends, be content, for your future is assured. You have achieved that happiness which is the sanction of character, and that character which is the basis of happiness. You have taken part in that progress which is at once the salvation of the State, of the individual, and of the universe. Nothing else can give a greater sense of joy and peace than the consciousness of progress. And this sense of joy and peace will be none the less if you know that your progress has been made by your own honest hard work. You will hear a good deal about luck. Luck consists in being ready for an opportunity when it presents, by keeping your work and study a little in advance of the absolute demands of your present day practice.

And finally, let me urge upon you the necessity for loyalty. Loyalty to your profession, loyalty to your college and its teachers, loyalty to your patients, and, most of all, loyalty to yourselves. Think how much of the accumulated knowledge of the centuries, laboriously compiled by the efforts of hard workingmen, is yours to start with. From between the legs of a mummy laid away some seven thousand years ago, was recovered the Ebers papyrus which showed that even at that time doctors were earnest, diseases well classified, and the uses of drugs well recognized. From the ages of tradition, theory, empiricism, and the study of anatomy upon the lower animals, through the centuries which gave us human anatomy, physiology, pathological anatomy, histology, and finally bacteriology, your debt of gratitude to those who have gone before is very

large. During the many spare hours which have been wisely ordained in the lives of young physicians, I trust that you will read the fascinating histories of the fathers of medicine, and appreciate the force of Kipling's lines:

The men bulk big on the old trail, our own trail, the
out trail.

They're God's own guides on the long trail; the trail
that is always new.

In entering into their glorious company you must bring in respect and fraternity, genuineness, and generosity. No man has any right to become a load upon a profession, but all should bring it honor and respect. If any men ought to exemplify physical, intellectual, and moral cleanliness, they are the men of the medical profession. The doctor who cannot apply asepsis to himself and who is weak, immoral, or unclean, will find when the testing time comes, as come it must to every man, that his choice of a profession has been a hideous mistake.

Loyalty to your college and to its faculty demands that no act of yours shall do aught but redound to their credit, and that you will do your best to add something, however little, to the sum total of medical knowledge. Your teachers feel an anxious responsibility for your future, as reflecting their influence. We teachers realize that "that which we are we shall teach, not voluntarily, but involuntarily." If we have failed to inspire in you high ideals of duty, some of the fault, at least, may have been ours.

Loyalty to your patients requires that you should extend to them sympathy and succor in their hours of sorrow, the cheerfulness that vanquishes despair, the skill that baffles even death itself. Science and sympathy must go hand in hand. Serve whoever calls, for small fees or no fees, at all times of day or night, and the time will soon come when you can dictate terms and hours and can keep younger men around you who will be willing to work as you have worked. Your patients expect even more than science and sympathy. The average sick person is both selfish and cowardly. He expects you to be steady, cheerful, courageous, optimistic, and confident. You can be all of these if you are giving him the best wisdom that is in you, and the best knowledge available to you.

Lastly, loyalty to yourself demands that you should cultivate the personal qualities expected of a gentleman, neatness of apparel, courtesy, gentleness, and self denial. Equanimity is a priceless possession to a physician. He who does not fret and fume, but has learned to consume his own smoke, will restore serenity to an agitated household. Introduce system into your work. Begin by making notes of every case at the bedside or in your consulting room. Compare at your leisure your notes with the textbook description and learn what you have failed to observe. The whole science of medicine lies in observation. Read the medical journals, at least the good ones, and make marginal notes in your textbooks of what seem to you to be advances in medical thought. For relaxation, renew your acquaintance with the standard literature of the world, the literature of power as well as the literature of knowledge. Literary culture will afford endless delight and broaden and inform the mind, and will greatly assist you in setting down

your own experience and observation for the benefit of your fellow workers. Loyalty to your own best interests also demands that you should not deny the spiritual life. That this life, with its hopes and its joys, its diseases and its disasters, is *all*, is denied alike by common sense, by reason, and by revelation. As one of our university preachers, the Reverend Dr. Lyman Abbott, has beautifully said: "There are three kinds of happiness obtainable in this life; pleasure, joy, and blessedness. Pleasure is the happiness of our animal nature, and we share it with the animals. Joy is the happiness of our social nature, and we share it with one another. Blessedness is the happiness of our spiritual nature, and we share it with God. Blessedness is more than joy and joy is more than pleasure, for pleasure depends upon the possession of things, and things decay; joy depends upon the possession of friends, and friends die; but blessedness depends upon the possession of character, and character is immortal." Character is the one thing which will enable you to accept prosperity with humility, and adversity with courage, and will at the end sustain you in your journey through the portico of life into the Palace Beautiful of Truth.

42 EAST TWENTY-NINTH STREET.

AURAL AFFECTIONS IN RELATION TO MENTAL DISTURBANCES.*

By W. SOHIER BRYANT, A. M., M. D.,
New York.

With respect to mental affections, aural diseases may be divided into six categories: 1, Cases of aural derangement which bear no relationship whatever to mental disturbances; 2, cases of aural disease causing mental irritation and leading to psychical affections, usually colored by the ear symptoms; 3, disturbances of the ear which act as causes of general exhaustion and hasten the psychic symptoms; 4, diseases of the ear which progress to loss of hearing, destroying the connection with the outside world and thus upsetting the mental equilibrium; 5, hallucinations of hearing, which are a result of the combination of an ear affection with a psychopathic condition and which are caused by the subjective sensation of a disturbed organ of hearing falling upon deranged higher centers; and 6, affections of the ear which are secondary to the mental disturbance.

The first group occurs alone. The remaining five groups may be found variously combined in any given case.

1. One need not spend much time in cataloging and describing those cases of aural disease which, whether they occur in the sane or the insane, have no bearing whatever on the mental condition. The stability of the central nervous system in the normal individual is capable of enduring a great deal of abnormal stimulation from the ears, as well as from other parts of the body, without giving way. In the psychically weak the auditory disturbances may be of a nature so mild that they have no bearing whatever on the mental condition. Or the aural stimuli may be overshadowed by some other condition which acts as a counterirritant and obscures what might otherwise become dominant. Some mental states are apparently oblivious to peripheral stimuli.

*Read before the Medical Association of the Greater City of New York, December 28, 1906.

2. Irritative aural causes of mental disturbances are the result of septic intoxication, or of pain, or of objective and subjective irritation of the hearing apparatus. The author has observed the case of a woman who suffered from three attacks of maniacal excitement which came on first, during the pus forming stage of an alveolar abscess; and later, during an attack of mastoiditis; and lastly, consequent upon the excitement occasioned by the death of her mother. Recovery followed each exacerbation in about six months. In this category fall the aural stimuli which tinge the psychical disturbances. The subjective sensations from the ear may be misinterpreted by the mentally unbalanced and become interwoven with the psychic phenomena. These sensations furnish the basis for imaginary sounds and give rise to auditory hallucinations. A woman suffered from a tinnitus which became so pronounced that she interpreted the sounds as vocal, then as distinct sentences, and finally was overwhelmed by their reality. Treatment and cure of the aural affection caused the symptoms to disappear in the reverse order in which they had occurred (3).

3. Afflictions of the ear may act as any local disease may, to the detriment of the whole organism, with consequent mental deterioration, either through exhaustion from pain, septic intoxication, or objective and subjective noises. Subjective irritation of the ears in the form of tinnitus also exhausts the patient by preventing sleep and disturbing the waking hours. External sounds are exceedingly annoying to some people even to the point of preventing sleep; but internal and subjective sounds are still more troublesome. The resulting exasperation and exhaustion may be extreme, leading to dementia or suicide. A man was so troubled by tinnitus that his entire attention was taken up by these subjective noises. Sleep was an impossibility and thinking or working were out of the question. Finally in a fit of despair he took poison (7). Throbbing in the ears may be compared to the torture employed by the dogs of old, who, it is said, allowed water to fall drop by drop on the heads of the condemned until they went mad.

Earache is a peculiarly irritating and disturbing pain which affects the mental functions more readily than almost any other. A few days after confinement a severe attack of mastoiditis developed and with it a depressing melancholia which was relieved in a few weeks together with the mastoiditis (1). The same conditions which are causative of irritation in group 2, when intensified, become the exhausting factors of group 3.

The ear has a special mode of fatiguing the nervous system which is rarely taken into account in spite of its great importance; that is, the effort which is required in the use of deficient hearing. This is extremely exhausting, more so than the straining of any other deficient sense, and it has the same effect as intense mental effort. It is responsible for half of the proverbial discomforts of the deaf; the other half are due to the subjective sensations of the defective organ of hearing. The old are especially liable to exhaustion consequent upon deficient hearing. Among the senile insane not a few have been noted in whom this effort was a very important cause of premature mental deter-

4. In some individuals communication with the surrounding world seems to be necessary to prevent psychical aberration. This is shown in the deplorable results of solitary confinement where intercourse with the rest of the world is cut off. From a psychical point of view the most important organ of communication with the external world is lost when the hearing is badly affected.

In a quiet place noises acquire an increased significance and subjective sounds are especially emphasized. The same phenomenon takes place in the deaf who hear little but subjective sounds. These become therefore of great moment by comparison with the few objective sounds heard. The inability to relegate a subjective sound to its proper place allows it to affect the imagination unduly and leads to the emphasis of psychical defects. Any one who has associated for a little time with deaf people has noticed that they are very prone to arrive at complicated, erroneous conclusions from a single misunderstood syllable. When this defect is coupled with psychopathic disturbances the consequent psychic result is easily understood. Senile dementals are especially apt to be afflicted in this way.

Sounds have more effect on our minds than sights (the same is true of many wild animals) and are more often misinterpreted, producing at times even in the normal individual marked erroneous psychical impressions. The gravity of these mistaken impressions is greatly magnified in the deaf who cannot readily correct them by true sound impression from other sources, and this constitutes one of their chief misfortunes. The old maid does not often see a man under her bed, but she often hears a burglar in the cellar. If she chances to be deaf, she also hears her friends making ill natured remarks about her, and if she is nervous, the psychical effect may be very distressing. Sights are not misinterpreted by the deaf but sounds are a source of misapprehension to the blind.

5. Hallucinations of hearing are commonly dependent on a defective auditory organ. The proof of this assertion is near at hand and the most striking point about it is that hallucinations of hearing are sometimes unilateral. Without exception these patients have a diseased ear with deranged function on the side which experiences the hallucinations, the other ear may be perfectly normal. The next interesting feature is that transition, which the author has often observed, from simple mechanical sounds of tinnitus to inarticulate sounds of living creatures (zooacousis), or music (harmonacousis), and from this to articulate human voices (logoacousis). The third point to be noted is the prevalence among patients with hallucinations of hearing of ear diseases of the kind most productive of tinnitus; e. g., chronic middle ear catarrh.

The only explanation of these observations seems to be that tinnitus originating in a pathological ear is misinterpreted by the diseased imagination of the psychopathic patient. This aberrant mental condition weaves the tinnitus into whatever form the character of the psychic affection suggests.

6. In certain forms of psychosis the vital functions are seriously affected; this reacts naturally upon the entire organism as well as upon its various parts, among them the ear. The mucous membrane in such cases may be altered in its secreting function.

Mucus does not flow as it should, and therefore favors the growth of bacteria; or, as is often the case, venous congestion of the mucus lined cavities hinders the circulation, ventilation, and normal reflexes, and interferes to a considerable extent with the sound transmitting function of the middle ear. The labyrinthine, nerve, and central perception of sound is interfered with by circulatory disturbances and inhibitive influences from the higher centres. The functional tests indicate what is called nerve deafness; that is, inhibition of the cochlea so far as functional activity is concerned.

The results of the writer's experience in the examination of the ears of the insane have convinced him that ear disease is much more prevalent among the insane than among the sane. In fact, it is the exception not to have some demonstrable functional disturbance of the ear. The author found it present in ninety per cent. of the insane examined (1). In many of these cases a history can be obtained which shows that the ear disease was in existence before the insanity appeared, and in others the condition of the ears is such that it must have antedated the mental disturbance.

SUMMARY.

1. Insanity is usually accompanied by aural diseases. In the majority of the insane the two affections are mutually dependent.
2. Hallucinations of hearing arise from tinnitus through the misinterpretation of aural stimuli under psychopathic conditions.
3. Cessation of the tinnitus can be expected to relieve the auditory hallucinations.

The author's writings on this and the kindred one of tinnitus aurium are: (1) Functional Derangement of the Ears and Upper Air Tract in the Insane. *Medical Record*, lxx, No. 8, p. 281-3, August 25, 1906. (2) The Great Psychical Importance of Ear Diseases. *The Journal of Nervous and Mental Disease*, xxxiii, No. 9, p. 553-565, September, 1906. (3) Tinnitus Aurium and Hallucinations of Hearing, or The Relation of Ear Disease to Auditory Hallucination of the Insane. *Annals of Otology, Rhinology and Laryngology*, xiv, No. 3, p. 547-555, September, 1905; *Journal of Laryngology*, xx, No. 9, p. 485 and 486, September, 1905. (4) Tinnitus Aurium: Diagnosis and Differentiation. *Transactions of the American Otological Society*, viii, Part 3, p. 385-396, 1904. (5) Tinnitus Aurium: Ætiology. *Annals of Otology, Rhinology and Laryngology*, viii, No. 1, p. 111-153, March, 1904. (6) The Treatment of Tinnitus Aurium. *The Laryngoscope*, xiv, No. 7, p. 531-541, July, 1904. (7) Capital Operations for the Cure of Tinnitus Aurium. *Journal of the American Medical Association*, xlv, No. 24, p. 1787-1792, December 9, 1905.

57 WEST FIFTH STREET.

The *British Medical Journal* states that preparations for the next International Medical Congress, which is to be held at Buda-Pesth in 1909, are in active progress. It has been decided that there shall be twenty sections, namely, anatomy, physiology, general pathology, therapeutics, internal medicine, surgery, obstetrical medicine, ophthalmology, children's diseases, neurology, psychological medicine, dermatology, urology, laryngology, otology, stomatology, hygiene, forensic medicine, military hygiene, and industrial hygiene.

PASTEURIZATION: THE ADVANTAGES AND DISADVANTAGES TO THE CONSUMER.*

By ROWLAND GODFREY FREEMAN, M. D.,
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ical School; Attending Physician, Cook County Hospital,
and Nursery and Child's Hospital, Chicago.

By the pasteurization of milk we mean the heating of it to a definite temperature below the boiling point, holding it at that temperature for a definite period, followed by rapid cooling to 50° F., or lower. This method was adopted in order to render milk comparatively sterile, and especially to destroy the pathogenic or disease causing germs we fear in milk. Naturally there has arisen a popular impression that all milk labeled pasteurized is practically sterile and free from these pathogenic bacteria. This impression is absolutely erroneous, and I wish at the outset to point out the distinction between efficient pasteurization and the ordinary commercial pasteurization to which so much of the milk supply of New York is subjected.

There is no doubt that the ideal milk is raw milk, to which no preservative has been added, and which is free from bacteria. Such milk is, however, unobtainable. The heating of milk makes certain changes in it, certain ferments of milk are destroyed by temperatures varying from 150° F. to 212° F. The taste of milk is changed at 170° F. Certain chemical changes in the proteids occur at 176° F. In pasteurization we produce therefore the lowest temperature consistent with the destruction of the bacteria, and we know that a lower temperature continued for a long time is as efficient as a higher temperature for a short time. Thus, according to Kolle and Wasserman, in order to destroy the tubercle bacillus exposure for four to six hours at 131° F. is as efficient as an exposure for one to two minutes at 194° F. As a matter of fact, the thermal death point of the tubercle bacillus, the most resistant of the pathogenic bacteria we fear in milk, marks the minimum temperature we can use for efficient pasteurization. This efficient pasteurization, such as has been carried on in the household for the past fifteen years, has been used with the result of great saving of life in the Straus milk dépôts of this city. Now the temperature and duration which is efficient in destroying any organism cannot be based on any one observation, but on conclusions from a great many, as different cultures of the same organism vary in resistance, and in order to be safe, the lowest figures should never be accepted. The thermal death point of the tubercle bacillus as given by different observers is as follows:

- 70° C. (158° F.) for one minute, Grancher and Lidoux-Libard.
- 70° C. (158° F.) for ten minutes, Yersin.
- 68° C. (154½° F.) for twenty minutes, Bitter.
- 65° C. (149° F.) for fifteen minutes, Forster.
- 60° C. (140° F.) for twenty minutes, Bonhoff.
- 60° C. (140° F.) for fifteen minutes, Schroeder.
- 55° C. (131° F.) for four to six hours, Kolle and Wasserman.
- 60° C. (140° F.) for one hour.
- 70° C. (158° F.) for twenty minutes.
- 80° C. (176° F.) for five minutes.

*Read at the meeting of the Section on Pediatrics, of the New York Academy of Medicine, held on March 12, 1907.

- 90° C. (194° F.) for one to two minutes.
 66° C. (151° F.) for one hour, Lanza.
 80° C. (176° F.) for one minute, Bartel and Stenström.
 60° C. (140° F.) for twenty minutes, Hesse.
 58° C. (135° F.) for ten hours, Dunbar and Dryer.
 60° C. to 65° C. (140° to 149° F.) for one to one half hour, Hippies.
 58° C. (135° F.) for four hours, Kobrack.

Putting then in order these thirteen observations, we reach the following conditions of efficient pasteurization with certain cultures tested:

- 55° C. (131° F.) for four to six hours.
 58° C. (135° F.) for four hours.
 58° C. (135° F.) for ten hours.
 60° C. (140° F.) for fifteen minutes.
 60° C. (140° F.) for twenty minutes (two observers)
 60° C. (140° F.) for one hour.
 65° C. (149° F.) for fifteen minutes.
 66° C. (151° F.) for one hour.
 68° C. (154½° F.) for twenty minutes.
 70° C. (158° F.) for one minute.
 70° C. (158° F.) for ten minutes.
 70° C. (158° F.) for twenty minutes.
 80° C. (176° F.) for five minutes.
 80° C. (176° F.) for one minute.
 90° C. (194° F.) for one to two minutes.

From this table we learn that 70° C. (158° F.) can only be relied on to kill the tubercle bacilli when continued for twenty minutes. Now, as a matter of fact, in commercial pasteurization milk is heated to 70° C. (158° F.) for only fifteen seconds, so that such pasteurization does not offer any protection against tubercle bacillus. And, again, while efficiently pasteurized milk is comparatively sterile, commercially pasteurized milk as sold in New York and elsewhere usually contains a very large contamination of bacteria. Moreover, the purposes of these two types of pasteurization are quite distinct. Efficient pasteurization is used to protect infant and invalid from the bacteria of milk. Commercial pasteurization is used only to prevent dirty milk from souring before it can be marketed. I am laying special stress on this distinction because it is one that I think has never been properly emphasized. There are three types of pasteurization: (1) Home pasteurization; (2) milk dépôt pasteurization; and (3) commercial pasteurization.

HOME PASTEURIZATION.

Pasteurization as it has been employed in the household retains the milk, after it has been sealed in nursing bottles, at a temperature of 168° F. for thirty minutes, after which it is rapidly cooled, and the bottles are kept sealed until fed, and are used for only the twenty-four hours following pasteurization. The use of such milk has, I believe, caused a great saving in the lives of infants, and has perhaps been the most important advance in infant feeding. The movement for improved dairy hygiene which has been going on for some time has resulted in the production of a considerable amount of milk which contains comparatively few bacteria, although really very many, and this milk has been fed raw to children under good circumstances with considerable success. The temperature exposure used in home pasteurization does little damage to any of the ferments in milk, it does not change its taste, and it leaves it a satisfactory food for infant feeding, and is much safer than even our cleanest raw

milk. Many of the accusations laid at the door of pasteurized milk, such as scruvy and rickets, occur, I believe, not materially oftener in infants fed on such milk than on raw milk, and these cases attributed to pasteurization have more often resulted from defective feeding, especially the use of too low proteids, than to the little heat to which the milk was subjected.

MILK DÉPÔT PASTEURIZATION.

Another question concerning pasteurization is whether it is desirable for milk dépôts supplying the poor. Such milk is distributed in nursing bottles, and there may be a question whether, if this milk is clean, it should be distributed raw or pasteurized. In favor of raw milk we have the benefit of the experience of the milk dépôts of Rochester, where raw milk has been distributed with success and with a diminution in infant mortality. Rochester, however, is a town of only 160,000 inhabitants, the milk supply coming from farms only a few miles distant, so that milk of the morning's milking is delivered the same morning, while on the other hand, the milk dépôts of Rochester do not supply congested tenement districts such as we have in New York city. The conditions here to my mind are absolutely different, and I think that success is more likely to follow the distribution of modified milk efficiently pasteurized in milking bottles by the milk dépôts supplying New York city, than by a similar distribution of raw milk. Milk arrives in New York city twenty-four to forty-eight hours after milking, and is forty-eight to seventy-two hours old before it is all consumed in the household. The people that need this milk dépôt milk the most are the very poor, where often the only well ventilated room in their apartment is the kitchen in which a fire is kept in summer for cooking. These people can afford no ice, and therefore should receive the nourishment for the baby in a condition best adapted to withstand these bad surroundings. Milk dépôts for supplying milk for infant feeding have been established in many countries, in France, Belgium, Germany, Spain, Italy, Switzerland, England, America, South America, and Africa, and as far as I know Rochester has the distinction of being the only city which distributes the milk raw.

COMMERCIAL PASTEURIZED MILK.

An entirely different matter is commercially pasteurized milk. Such milk is heated to a considerable temperature for a few seconds or a minute, then rapidly cooled and transferred to the utensils in which it is delivered. This milk is subjected to a higher temperature than would be necessary to exert the same bactericidal action where a longer duration of temperature is used, and it is usually contaminated in subsequent handling or in the vessels in which it is afterwards delivered. Such milk commercially delivered, shows in my experience and that of others far more bacteria than the better grades of raw milk, for it is a well established fact that pasteurized milk when contaminated anew, even if kept moderately cool, allows a very rapid increase in bacterial content. The high bacterial content of such commercially pasteurized milk and the more rapid increase in the bacteria present, even when milk is kept at a moderate temperature, was

well demonstrated by the careful work of Dr. Pennington and Dr. McClintock, of Philadelphia.

The question then arises whether there is any advantage in destroying the original contamination if, after doing so, a second equal contamination is added. From the point of view of the milk dealer there is a great advantage, for he destroys in pasteurization the lactic acid bacteria which cause the milk to sour, leaving the peptonizing species. This allows him to market milk which may be produced under filthy conditions, and which could not otherwise be sold without causing trouble with his customer. From the point of view of the consumer there is only disadvantage in commercial pasteurization. Commercial pasteurization interferes with the crusade for clean milk by making dirty milk more marketable. It gives the public a false sense of security, the public buys it, supposing it buys a fairly sterile milk, freed from pathogenic bacteria, while so far as my experience goes—and this is abundantly confirmed by others—the public always gets a very highly contaminated milk which continues to deteriorate much faster than raw milk even if kept moderately cold. Commercial pasteurization might be desirable to a limited extent in large cities where the demand for milk exceeds the supply and where an exclusion of all highly contaminated milk is not compatible with supplying the demand. Pasteurization for this purpose should, however, be done at a high temperature approaching the boiling point, so that there would be no question but that the bacteria would be for the most part killed. Under such conditions I would suggest a measure giving the president of the city board of health authority to compel the pasteurization of all milk unsafe to sell raw on account of unsanitary conditions of the dairy or persistent high bacterial content, but such bill should carry with it provision for efficient pasteurization at a high temperature, for sterilized containers for the milk after pasteurization, and for the filling of such containers under aseptic precautions. That such milk should be pasteurized only a few hours before delivery to the consumer and should be marked with the time and day of pasteurization, the temperature used, and the duration of such temperature. The health board should make frequent bacteriological examinations of commercially pasteurized milk, and should destroy such as is found to be highly contaminated.

SUMMARY.

There are two distinct processes known as pasteurization. 1. Efficient pasteurization in nursing bottles intended to protect the consumer of the milk from bacteria and producing a food with few bacteria, and no living pathogenic bacteria we fear in milk. 2. Commercial pasteurization intended to make marketable dirty milk which could not otherwise be kept sweet until consumed, but which usually contains, on reaching the consumer, a large number of living bacteria, including possibly pathogenic bacteria and the tubercle bacillus if it is present in the milk.

Efficient pasteurization has been most valuable as used in homes and milk dépôts. Commercial pasteurization should be tolerated only as a temporary means of modifying the dangers of dirty milk.

205 WEST FIFTY-SEVENTH STREET.

THE USE OF AMMONIA IN COUNTERACTING THE FUMES OF FORMALDEHYDE.

By E. V. WILCOX, PH. D.,
Washington, D. C.

For about twenty years formaldehyde has been known to be an effective agent for the destruction of pathogenic bacteria and fungi and during the past five years it has been rapidly replacing all other methods of disinfection after the occurrence of contagious diseases. The reason for this is found in the ease with which formaldehyde fumes may be generated, the germicidal effect of the fumes, and the comparative harmlessness of the fumes upon wall paper, fabrics, and house furnishings.

The chief objection raised by householders against the use of formaldehyde is that the fumes are so exceedingly irritant and persist for so long a time after fumigation. Under ordinary conditions, it is impossible to sleep in a fumigated room within forty-eight hours after the room has been ventilated, and more often the irritating effects of the fumes are too evident for from five to fourteen days. In fact the odor of formaldehyde may be detected for even a much longer period.

Recent experiments indicate that the full efficiency is secured from formaldehyde fumigation if the process is continued for twenty-four hours. It becomes, therefore, a matter of considerable practical importance to the owner of the house to devise a method by which the room may be made habitable as soon as possible. A recent occurrence of scarlet fever at home led me to undertake some experiments along this line. Until after the experiments were carried out, I was unable to find any reference in medical literature to the use of ammonia in neutralizing formaldehyde, but a few vague references to the subject were later found in both German and English periodicals. In conversation with Dr. W. H. Evans on this subject the fact was called to mind that ammonia fumes, if inhaled after working with material preserved in formaldehyde, served to allay irritation caused by the latter. Some laboratory experiments on a small scale were made at once to determine whether formaldehyde fumes could be entirely neutralized by ammonia fumes in the air under ordinary conditions. It was first found that commercial formaldehyde mixed with aqua ammoniæ undergoes a rather rapid reaction causing the development of heat and the formation of a crystalline body which appears upon evaporation. This body is hexamethylenamine (CH_2)₆ N₄, a substance which under other names is used to some extent as a solvent of uric acid in the treatment of certain diseases. Hexamethylenamine is practically odorless. At least the odor is not disagreeable even when the body is present in the room in considerable quantities. A simple laboratory device readily showed that the fumes of formaldehyde could be completely neutralized with ammonia fumes or *vice versa*. The reaction takes place almost instantly.

Encouraged by these preliminary experiments the method was tested on a larger scale at home after fumigation of the sick room and the rest of the house. In fumigating the sick room containing 1,500 cubic feet of space, two quarts of methyl alcohol were consumed in a formaldehyde generator and in addition three pounds of commercial formal-

dehyde were exposed on the sheets. As soon as the room had been ventilated sufficiently to make it possible to work in it, one and one half quarts of ammonia were sprinkled over the rugs and bedding, and the room was closed again. About the same proportion of ammonia was used throughout the other rooms of the house where the quantity of formaldehyde generated had been relatively somewhat less. The formaldehyde fumes were completely destroyed within one half hour, and the odor could not be detected in any part of the house except where formadehyde had been spilled on the floor and had left an incrustation of paraform upon the woodwork. As soon as these spots had been treated with ammonia the odor of formaldehyde disappeared entirely.

The method of applying the ammonia in this case was a crude one, but has the advantage of being simple and could be readily carried out by any person. The method does not interfere in any way with the effectiveness of fumigation. In fact, according to von Rigler, ammonia fumes have considerable germicidal value in destroying infection after the prevalence of diphtheria or scarlet fever. Ammonia does not injure any fabrics upon which it may be sprinkled, and if used in larger quantities than necessary to neutralize the formaldehyde fumes, the odor of ammonia may be removed in a few moments by ventilating the room.

Conversations with health officers since this experiment have disclosed the fact that the effectiveness of ammonia in neutralizing the formaldehyde fumes is known to some of these officers, but the use of ammonia is very restricted and almost never recommended. It seems as if the unfortunate householder who has suffered from an outbreak of an infectious disease should be given the benefit of such information in every instance if he has not already heard of the immediate relief obtained from the simple application of ammonia.

Therapeutical Notes.

Hypodermic Injection for Constipation.—Combemale (*La Province médicale*, December 22, 1906) has found that in obstinate cases of constipation the following has been successful:

R. Apocodeini hydrochloridi,0.50 gramme;
Distilled water,50.0 grammes.

M. Inject two cubic centimetres daily.

A New Formula for Gray Oil.—Lafay has devised the following formula (*Le Bulletin médical*, February 9, 1907) for a homogenous permanent mixture for hypodermic administration:

R. Wool fat,10.0 grammes;
Wool fat,13.5 grammes;
Petrolatum,46.5 grammes.

This need not be warmed before use. Queyrat, after using it for six weeks, states that it is painless and efficient.

The Favorable Effects of Potassium Iodide in Cancer of the Œsophagus.—Mikhailov (*Roussky Tratch and Revue de thérapeutique*, February 1, 1907), although unable to report any cures, has succeeded in greatly alleviating the condition of sufferers with cancer of the Œsophagus and stenosis by the rectal administration of potassium iodide. It

also affords an excellent means of making a differential diagnosis between tertiary lesions of syphilis and malignant disease, since in the former the temperature remains normal or slightly falls, while in the latter in two or three days there is a slight rise of some tenths of a degree. His formula is

R. Potassium iodide,4 grammes;
Sodium bicarbonate,2 grammes;
Water,80 to 100 grammes.

for one injection. It should be preceded by a cleansing enema.

Treatment of Adenoids.—In the slighter cases of adenoids, with some enlargement of the tonsils, a weak alkaline lotion, such as the following, should be syringed through the nose and fauces so as to free the lymphoid tissue, so far as possible, from microorganisms, and to prevent crusts forming upon the surface:

R. Sodii bicarbonatis,gr. v;
Peracis,gr. v;
Sodii chloridi,gr. ij;
Glycerini,3j;
Aque,ad 5j.

Ft. lotio.

Astringents, such as the following, may be painted on the tonsils and the adenoid tissue:

R. Aluminis,3ij;
Acidi tannici,3ss;
Glycerini,3ss;
Aq. rosæ,ad 3ij.

Ft. pig.

Or

R. Iodi,gr. ij;
Potassii iodidi,3ss;
Glycerini,ad 3j.

Ft. pig.

Tonics should be administered, such as the phosphate of iron or steel wine. If the patient is no better for the treatment, and the symptoms of enlarged tonsils and adenoids still persist, then these growths should be removed.—*The Practitioner*, March, 1907.

To Soften Cerumen.—Before making an irrigation of the ear about twenty drops of the following preparation should be instilled into the canal:

R. Sodium bicarbonate,1.0 gramme;
Phenic acid,0.6 gramme;
Glycerin,aa
Sterilized water, {15.0 grammes.

M.

Bulletin général de thérapeutique, February 8, 1907.

Lupus Erythematosus of the Face Cured by Unilateral Erysipelas.—Hallopean and Bondet report (*Bulletin de la Société française de dermatologie et de syphiligraphie*, January, 1907) a case of a young woman, twenty-three years of age, who had a patch of erythematous lupus upon her face, which began three years before. It occupied both cheeks, the chin, and the nostrils. At this time she was attacked by erysipelas, which was circumscribed and only affected the right side of the face. Following the subsidence of the acute affection the lupus of the affected side gradually receded and disappeared, leaving only slight discoloration and a cicatricial appearance. This unilateral cure gave the patient a very peculiar look, as the disease on the left side was not influenced. The clinical observation that the streptococcus toxines overcome the pathogenic agent of lupus erythematosus as has been like-

wise observed in tuberculous lupus, receives additional confirmation by this case, and is another trait common to these affections.

Mouth Washes.—Buckley, in the *Dental Review*, recommends the following combination as a mouth wash:

R Potassii chloratis, 5ij;
Sodii bicarbonatis, 5j;
Potassii nitratis, 3ss;
Liquore amari, 3ij;
Aque cinnamomi, q. s. ad 3vij.

M. Sig.: Thoroughly rinse mouth three times a day.

R Sodii bicarbonatis, aa 3j;
Sodii bicarbonatis, aa 3j;
Zinci chloridi, gr. vj;
Thymolis, aa gr. j;
Mentholis, aa gr. j;
Glycerini, 5ij;
Alcoholis, 5ij;
Aque gaultheriæ, q. s. ad Oj.

M. Sig.: Use as a mouth wash.

Artificial Carlsbad Salt.—The Dutch Pharmacopœia gives the following formula for making artificial Carlsbad salt:

R Potassii sulphatis, parts 2;
Sodii chloridi, parts 8;
Sodii bicarbonatis, parts 36;
Sodii sulphatis, parts 44.

Dissolve 15 grammes of this mixture in a litre of water in order to make a solution in which the salts are found in almost the identical proportions as they exist in the natural water. Dose is 250 to 300 grammes in one or two takings in twenty-four hours, warmed in a steam bath. It is useful in hyperpeptic gastritis, with pain coming on immediately after a meal or a few hours later. As a purgative, one to three teaspoonfuls may be dissolved in a large glass of carbonated water or simply hot water.—*Le Nord médical*, February 1, 1907.

The Value of Lumbar Puncture in the Diagnosis of Purulent Meningitis.—Leguen, at the Société de chirurgie (*Bulletin médical*, February 9, 1907), referred to a case reported by Lapointe of a young man, who for several years had suffered with chronic ear discharge, and recently had headache, vomiting, and fever. The pain radiated from the left ear to the side of the cervical spine. A lumbar puncture revealed the existence of an abundant polynucleosis, which suggested the propriety of surgical intervention. After opening the mastoid antrum and the tympanum, of which the posterior wall was perforated, there was found an extra mural abscess. Incision of the dura mater discharged another abscess. Drainage was made, and a cure was effected without accidents. The excess of polynuclear leucocytes indicated a meningitis, which might be general. It is impossible, therefore, in spite of this indication, to positively locate the meningeal lesion. On the other hand, this is not a contraindication, as has been asserted to the opening of the dura mater, since the incision does not increase the danger and has the advantage of giving positive information regarding the existence, which may be possible and doubtful of deep collections of pus.

The Active Principles of Kola Nut.—Chevrotier and Vigue, in a communication to the Société de thérapeutique de Paris (*Bulletin général de thérapeutique*, February 8, 1907) discuss the pharmacology and therapeutical action of Kola. They de-

clare that there is a marked difference between the effects of the dried and the fresh seeds, and also in the pharmaceutical preparations of each, respectively, and that this difference is of great importance from the therapeutical standpoint. The preparations made from the dried seeds owe their activity entirely to the caffeine, which they contain; whereas the fresh seeds and their preparations contain a tannoglucoside, also Heckel's and Kuebel's kola red (which are the products of breaking up and of oxygenation, more or less advanced, of the primitive tannoglucoside), these are insoluble and contain a varying proportion of caffeine in an unstable combination. Goris stated that he had isolated in the fresh nut a compound, caffeine free phenol "kolative," present only in very small quantity; but to it he attributed at least a part of the physiological action of the fresh drug. Chevrotier and Vigue have succeeded in extracting from kola a soluble tannoglucoside containing the totality of the caffeine existing in the fresh seed, but were not able to recover the caffeine free substance described by Goris. These observers assert that the fresh kola nut owes its pharmacodynamic properties solely to this caffeine tannoglucoside, and a small quantity of essential oil which is contained in the fresh drug. This tannoglucoside is obtained by treating the fresh seed with boiling alcohol, in order to kill the oxydase, then the alcohol is evaporated *in vacuo*, under a maximum pressure of ten millimetres of mercury. After extraction of the alcohol, the drug is pulverized and extracted by means of acetic ether, then purified by washing in ether, and by successive solutions in alcohol and in acetic ether. This tannoglucoside is soluble in water, but is decomposed by aqueous solution, breaking up into one molecule of caffeine, one molecule of glucose, and one molecule of a combination of kola red (a derivative of kola tannic acid) and of caffeine. It is a white, or slightly violaceous, substance, if properly made without exposure to the air, and can be preserved indefinitely if combined with sugar. This combination affords a convenient means of obtaining the physiological effects of the fresh kola nut, and can be dispensed in the form of compressed tablets representing an equal weight of the fresh drug. Six to ten tablets daily would be the average dose. The taste also resembles the fresh nut. The physiological results are decidedly different from those of caffeine. While acting as a stimulant to the cerebrospinal and sympathetic nervous systems, increasing the muscular energy and elevating blood tension, it differs from caffeine in producing a diminution of diuresis and an augmentation of intestinal peristalsis. Nor is it accompanied by as marked an augmentation of the processes of dissimilation, especially as regards the phosphates. This agrees with the fact that kola is not, like the other caffeine bearing substances, an *aliment d'épargne* in a strict sense of the word; but entirely outside of its general stimulant action it should equally be regarded as a real food, on account of the albuminoid and starchy matters which it contains. It should not be forgotten that the natives of Africa use the fresh kola as a veritable aliment; one of its chief characteristics is to regulate the assimilation of other food taken, at the same time, into the system.

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THE HEALTH OF THE CANAL ZONE.

During December, 1906, there were 8,200 white employees of the Isthmian Canal Commission on the Isthmus of Panama. Among these there were eight deaths, corresponding to an annual death rate of eleven in a thousand. Six thousand of these whites are Americans, and among the Americans there were no deaths from disease. There were eight hundred American women and children on the isthmus, among whom there was no death from any cause. There has been a considerable drop in the number of deaths among the general population on the isthmus. The sick rate among the employees has been about thirty in a thousand. This morbidity rate Dr. Gorgas considers as satisfactory.

During the month there was no quarantinable disease of any kind on the isthmus. Of the eight employees who died, one died from pneumonia, one from cardiac thrombosis, one from fracture of the vertebræ, one from fracture of the skull, one from malaria, one from typhoid fever, one from meningitis, and one from "fever." The total deaths in the Canal Zone from typhoid fever were six, from malarial fever thirty-eight, from malarial cachexia five, from miliary fever two, from dysentery nineteen, from beriberi nine, and from tuberculous disease of the lungs twenty-five.

Throughout the Canal Zone the anopheles and stegomyia brigades are kept constantly at work. During the month of December there were about twenty-five rainy days on the isthmus, and the heat was excessive. This kind of weather is favorable

to the development of anopheles, although the most favorable period is just at the close of the dry season. The most common species of anopheles in the Canal Zone is the albipes. Tile drainage is being established in the Canal Zone, and the authorities hope that it will be completed by the end of the dry season, which has just set in.

During December, 1905, there was much more pneumonia than during December, 1906. The houses of all persons who contracted pneumonia have been fumigated with strong sulphur fumes and then thoroughly washed out with a solution of mercury bichloride. Up to the present time there has not been a single case of smallpox within the Canal Zone since the Department of Health was organized, in 1904.

Efforts are being made to prevent the occurrence of typhoid fever. The sewage of all the American settlements in the Canal Zone is discharged into small streams that flow into the Chagres and Rio Grande. The portion of these streams which receives the sewage is well below the water sheds of the pipe line water supply. Notices have been posted along the polluted streams explaining that the water in them is unfit for drinking purposes. The settlements within the area in which the local streams are polluted have had pipe lines installed from a safe water supply. The reservoirs and adjacent lands are being patrolled continuously, so that no preventable contamination of the water may occur. All this is very creditable to Dr. Gorgas's administration.

THE CONTROL OF VENEREAL DISEASES.

The venereal diseases are among the most dangerous menaces to the human race. Societies have been founded and a strong propaganda is being conducted to combat this evil. Dr. C. F. Marshall, a translator of Fournier, says in the introduction to the *Treatment and Prophylaxis of Syphilis*: "The problem of the prevention of syphilis is one which sooner or later will have to be grappled with by all nations, and that nation which first successfully deals with the problem will survive in the struggle for existence."

Reports and statistics have been collected to show the spread of venereal diseases. But these compilations, treating about the maladies and their victims, both direct and indirect, are more or less misleading. The writers and compilers of such articles base their conclusions upon not altogether correct and general statistics. Their arguments are too subjective and lack the objective clearness and impartiality necessary to exact conclusions. Such a condition is only natural, as the essayists cover their own smaller or larger ground, found in their own practice, private

or public. To generalize is next to impossible, on account of the difficulty which besets the compiler of such material.

We welcome therefore a book which gives us absolutely indisputable statistics on this important question. It is the thirty-sixth number of the *Veröffentlichungen aus dem Gebiete des Militär-Sanitätswesen*, published by the medical department of the royal Prussian ministry of war, and written by Dr. Heinrich Schwiening, a surgeon (Stabsarzt) of the German army, bearing the title: Beiträge zur Kenntnis der Verbreitung der venerischen Krankheiten in den europäischen Heeren, sowie in der militärpflichtigen Jugend Deutschlands.

We learn from this work, which contains a great amount of well prepared statistical material, that for the year 1903 the German army was composed of 590,859 men, and the number of soldiers with venereal disease is given as 7,599 affected with gonorrhœa, 1,393 with simple chancres, and 2,401 with syphilis—total, 11,393. The Austrian-Hungarian army of the same year had 291,809 men, with 8,772, 2,809, and 5,607 affected in the order mentioned—total, 17,188. The French army (1903) had 489,673 men, with 9,406, 974, and 2,926 affected—total, 13,306. The Italian army (1902) had 199,253 men, with 9,475, 5,872, and 2,895 affected—total, 18,242. The British army (1903) had 110,565 men, with 6,947, 1,764, and 5,115 affected—total, 13,826. The Russian army (1902) had 1,058,042 men, with 22,072, 6,689, and 12,870 affected—total, 41,631. The Spanish army (1903) had 76,253 men, with 1,803, 2,102, and 928 affected—total, 4,833. The populations of these countries for 1900 are given by the *Statesman's Yearbook* as follows: Germany, 56,367,178; Austria-Hungary, 45,405,267; France, 38,961,452; Italy (1901), 32,475,253; Great Britain, 41,458,775; Russia (1897), 128,161,249; Spain, 18,607,674.

Other tables in Dr. Schwiening's book show the decrease of venereal disease in the armies since 1870, which is especially evident in the Belgian, French, Dutch, and German. The author comes to the conclusion that not the soldier, but the civilian contributes the largest contingent to the venereal sick list. It must be remembered, however, that the continental nations have compulsory military service, each healthy male citizen of suitable age being obliged to serve in the army. By comparing the proportion of venereal sick of the German army (1.4 per cent.) with the proportion of venereal recruits (7.3) he found that the civilian population, represented by the recruits, contributed five-times as much as the army to the venereal sick list.

It is certainly not possible to form a conclusion

from these army observations as to the civilian population. But if it is possible to control venereal disease and its treatment in an army, why should control not also be enforced among the general population? Four centuries ago Europe undertook to stamp out leprosy, and many St. George hospitals and homes are still in existence as the only remaining witnesses of the battle. The system was indeed crude, unjust, and barbarous, but it accomplished the desired effect. Should it not be possible to overcome venereal diseases with the help of our present knowledge and scientific methods?

BULLET SWALLOWING IN THE RUSSIAN ARMY.

According to a medical officer of the Russian army, Dr. Paul Lewoniewski (*Presse médicale*, February 23rd), there prevails among the Cossacks of that army a popular belief that those who swallow bullets will not be killed by a bullet in battle, and some of them seem to be impressed with the idea that the more bullets they swallow the more surely operative is the charm. He reports the case of a soldier, seventeen years old, who on one day swallowed fourteen modern jacketed bullets, which had been used, and on the following day thirty-one more—forty-five in all. It appears that the precaution is held to be futile unless the motive is kept secret; hence the young man's father stated, when the lad was admitted into a hospital, that his son had swallowed that great number of bullets in order to out-do some of his comrades who had swallowed only a few. These comrades voided their bullets without any trouble, but Zacharoff, for that was the young Cossack's name, did not get off with impunity. He felt no discomfort at first, but it was not long before he was seized with pains in the stomach. A physician gave him several doses of purgatives, but the bullets were not passed. The lad entered the hospital on the third day after his first meal of bullets.

There was at first decided salivation, but it subsided speedily, and for some weeks the young man felt but little inconvenience. A few bullets were voided with the stools, and several Röntgen ray examinations seemed to indicate that most of the others were making their way toward the rectum. Nevertheless, it was apparent that many of the bullets were still in the stomach, and grave symptoms supervened—fœtid vomiting, increased abdominal pain, a disagreeable odor about the mouth, and an earthy hue of the skin. At the end of about forty days after the man's admission into the hospital he was subjected to gastrotomy. About half a pint of a foul bloody fluid issued from the incision into the stomach, and then eleven bullets were removed.

They were quite smooth and showed no alteration of their surface. The gastric mucous membrane was hyperæmic and was the seat of numerous small echymoses. The soldier made a satisfactory recovery. The misleading deductions from the x ray examinations are attributed to the probability that the weight of the bullets carried the stomach almost down to the pubic symphysis.

THE PHYSICIAN IN FICTION.

The physician has passed through various stages in literature, from the pompous ignoramus of Molière to the beatified being who so miraculously saves a life. That he is coming to be more justly appreciated is amply shown by the place he holds in the lighter literature of the day. One cannot fail to understand the commendation of the medical profession by a clergyman, Ralph Connor, when he not only makes a man of medicine the hero of his novel *The Doctor*,¹ but places him a step higher than the inevitable clergyman who likewise figures in the story. The tale is well told and the dissertation of the doctor on the hygiene of working camps is clear, concise, and wholly admirable.

THE USE OF X RAYS IN DISEASES OF THE BLOOD AND OF THE BLOOD FORMING ORGANS.

Dr. Henry K. Pancoast has collated the results of treatment of leucæmia, pseudoleucæmia, polycythæmia, splenic anæmia, and pernicious anæmia with the x rays, both in his own laboratory and as recorded by other observers (*University of Pennsylvania Medical Bulletin*, January).

There are 123 cases of leucæmia reported in literature and by letter which have been treated with the x rays. Of these, final reports have been made in sixty-three cases, a little more than fifty-one per cent. Of these sixty-three patients, four are living and well; sixteen had a symptomatic cure, then had relapse, and died; five had a symptomatic cure, with relapse, but are living, though in a grave condition; eighteen improved, had relapse, and died of the disease or of an intercurrent affection; sixteen showed no effect or were but slightly improved, and died; four showed a symptomatic cure, had relapse, and were under treatment at the time the paper was written. Only 6.35 per cent. of the patients were alive and well from three to six years after the primary symptomatic cure.

Death in these cases is often sudden and due to a toxæmia, which may be directly referable to the action of the therapeutic agent. It should be remembered, furthermore, that intercurrent diseases

are frequently the cause of spontaneous improvement as well as of death both in leucæmia and in pseudoleucæmia. In view of the high death rate, the frequency of relapse, and the results of experimental research, particularly those published by Edsall and referred to in these columns on November 4, 1905, the x rays cannot be regarded as a specific therapeutic agent in either variety of leucæmia. The true cause of the disease is not destroyed and sooner or later a relapse is to be expected. The theory that the destruction of the leucocytes and abnormal deposits of lymphoid tissue are due to stimulation of an autolytic process, through some action of the x rays, seems to have been sufficiently well demonstrated by competent authorities to be accepted.

There are forty-four cases of pseudoleucæmia reported in Pancoast's paper. The final outcome is known in twenty-nine, sixty-six per cent. of the total number. Of the patients, 27.6 per cent. are alive and well; three or four years after the first symptomatic cure, 65.5 per cent. are dead or will soon die; and 6.9 per cent. are still under treatment. In typical cases of pseudoleucæmia there is no evidence of an excessive tissue destruction at any time during the treatment, although three patients have died as a result of toxæmia induced by the treatment. The x rays are not a specific therapeutic agent in this disease, but the results are much better than they are in leucæmia. It is possible that by improvement in the technique and after a better understanding of the pathology of the disease still more favorable results may be obtained.

There are records of four cases of polycythæmia, twelve of splenic anæmia, and five of pernicious anæmia that have been treated with the x rays. One of the patients suffering from pernicious anæmia, who had toxæmia before the x ray application, was seized with alarming symptoms after a single exposure of four minutes, and died three weeks later. In serious diseases, such as pernicious anæmia, pneumonia, typhoid fever, acute nephritis, pyæmia, leucæmia, and pseudoleucæmia, x ray treatment should not be given, and skiagraphic or fluoroscopic examinations should not be made without coincident metabolic studies. Complete studies of metabolism are not always possible, but a careful, simple urine analysis, combined with the estimation of uric acid, will be sufficient to indicate danger. The estimation of the uric acid is suggested because it is easiest of accomplishment. The danger signals would be evidence of nephritis in the simple urine analysis before the application of the x rays, and a diminution in the output of uric acid, determined by an examination of a twenty-four hour specimen, after the exposure. The paper contains a valuable bibliography.

Obituary.

JOHN H. BRINTON, M. D., LL. D.,

OF PHILADELPHIA.

Dr. Brinton died at his home, No. 1423 Spruce Street, Philadelphia, on Monday, March 18th, of cerebral hæmorrhage, after an illness of about two weeks. He was born in Philadelphia on May 21, 1832. He was graduated from the Jefferson Medical College in the class of 1852. After spending a year in postgraduate study in Vienna and Paris, he started to practise in Philadelphia. He was demonstrator of operative surgery in the Jefferson Medical College and subsequently lecturer on operative surgery in the same institution.

At the outbreak of the civil war Dr. Brinton was commissioned brigade surgeon of volunteers, and was ordered to report to Major General Fremont, commanding the Department of the West. General Fremont ordered him to report to General Grant, who had just assumed command of the District of Cairo. He served with Grant in the Tennessee and Cumberland River campaign in 1862, and during the same year was ordered to Washington and assigned to duty in the office of the surgeon general. During this duty Dr. Brinton was engaged for a period on the first portion of the *Medical and Surgical History of the War of the Rebellion*, for which he wrote the article on Gunshot Wounds, and in starting the nucleus of the Army Medical Museum. Later he was ordered to active service under General Rosecrans, with whom he acted as medical director in the field in the Missouri campaign. Still later he was superintendent and director general of the hospitals at Nashville, Tennessee, and medical director of the army of the Cumberland.

At the close of the war Dr. Brinton was appointed lecturer on operative surgery in the Jefferson Medical College, and was subsequently made surgeon to the Jefferson Hospital and professor of the practice of surgery and clinical surgery in the same institution. In May, 1906, he resigned the chair of surgery and was made emeritus professor.

Dr. Brinton was connected at various times with St. Joseph's Hospital and the Philadelphia General Hospital, as well as with the Jefferson Hospital. He was a fellow of the College of Physicians, and was for many years the chairman of the committee on the Mütter Museum of the college. He was a member of the American Medical Association, the Medical Society of the State of Pennsylvania, the Philadelphia County Medical Society, and the Pathological Society of Philadelphia, as well as of a number of other national and local organizations of a non-medical nature.

PROFESSOR PIERRE EUGENE MARCELIN
BERTHELOT,

OF PARIS.

The death of Professor Berthelot occurred in Paris on March 18th. He had reached the age of eighty years. Professor Berthelot was one of France's most renowned savants, and in the popular estimation he was best known for his researches in the synthesis of organic compounds. He had been perpetual secretary of the Academy of Sciences since 1889. He was a life member of the Senate of

France and served at different times as Minister of Public Instruction and Minister of Foreign Affairs.

BRIGADIER GENERAL JOHN MOORE,

CHIEF OF THE ARMY MEDICAL DEPARTMENT.

Surgeon General Moore died in Washington on Monday, March 18th, aged eighty years. He was a native of Indiana. He entered the medical corps of the army in 1853. He was known as an efficient and intrepid officer. For a few years he was surgeon general of the army. He was retired by reason of the age limit in 1890, with the rank of brigadier general.

News Items

NEW YORK CITY AND STATE.

The Death of James B. Lathrop, who for twenty-three years was superintendent of Roosevelt Hospital, occurred on Wednesday, March 13th, in the sixty-third year of his age. Mr. Lathrop had resigned from the hospital in February, and had intended to leave New York on March 1st for Sacramento, Cal., where he hoped to make his future home and renew his health.

The Medical Society of the County of Chemung, N. Y.—The following programme was arranged for a meeting of this society, held in Elmira, on Tuesday, March 19th: Vesical Calculus, report of a case, by Dr. E. E. Bauer, of Owego; Diet in Chronic Nephritis, by Dr. H. W. Fudge, of Elmira; Medical Treatment of Exophthalmic Goitre, by Dr. A. J. Westlake, of Elmira.

A Competitive Examination for Positions on the House Staff of the German Hospital will be held at the hospital on Monday, April 15, 1907, at 2 p. m., and on Wednesday, April 17, 1907, at 2 p. m. The examination will be written and oral. Some knowledge of the German language is desirable. Candidates will please forward application in writing, accompanied by a short *curriculum vitæ*, to the superintendent of the German Hospital, on or before April 10, 1907. Louis Krumm, superintendent.

The Alumnae Association of the New York College and Hospital for Women.—The spring meeting of this association was held at the home of Dr. Jennie V. H. Baker, of Brooklyn, on Wednesday evening, March 20th. The subject for discussion was Surgical Expediencies. Papers were presented by Dr. Libbie H. Muncie, Dr. Hattie V. B. Peckham, Dr. Jennie V. H. Baker, Dr. Mary E. Potter, Dr. Jean Williams, Dr. Gertrude Van de Mark, Dr. Addison Boyce, and Dr. Edwina Frech.

The Buffalo Academy of Medicine.—At a meeting of the Section in *Obstetrics and Gynecology*, held on Tuesday, March 19th, the following programme was presented: Postpartum Hæmorrhage, by Dr. Ludwig Schroeter; Drainage in the Female in General Peritonitis, by Dr. Francis W. McGuire. The Section in *Pathology* will hold a meeting on Tuesday, March 26th. The programme for this meeting includes a paper on The Formation of Gallstones, by Dr. J. George Adami, of Montreal.

The Society of Former German Students in America.—The annual *commerz* of this society will take place at Arion Hall, New York, on Saturday, March 23rd. The officers of the society are: Dr. Carl Beck, 37 East Thirty-first Street, New York, president; A. J. W. Kern, Jamaica, L. I., treasurer; Dr. Carl E. Pfister, 75 West Forty-seventh Street, New York, corresponding secretary; J. Heckmann, 319 East Sixth Street, New York, recording secretary. Either of these gentlemen will receive subscriptions for the *commerz* at \$2.50 a person.

The Syracuse Academy of Medicine.—The programme arranged for a meeting of this academy, held on Tuesday evening, March 19th, was as follows: Treatment of the Exophthalmic Goitre; Antithyroidin, by Dr. S. E. Crane, Onondaga Valley; Treatment of a Case of Exophthalmic Goitre; Unsuccessful, by Dr. E. B. Kaple, Elbridge, N. Y.; Review of Nonoperative Treatment in Thyroid Disease, by Dr. I. H. Levy; Surgical Treatment of Simple and Cystic Goitre, by Dr. Nathan Jacobson; Surgical Treatment of Exophthalmic Goitre, by Dr. John Van Duyn.

The Women's Medical Society of New York State.—At a banquet given at the Genesee Valley Club by the Blackwell Medical Society, of Rochester, in honor of Dr. Sarah R. Adamson Dolley, in celebration of her seventy-eighth birthday, steps were taken to form a women's medical society of the State, and the following officers were elected: Honorary president, Dr. Elizabeth Blackwell, of Hastings, England; president, Dr. Sarah R. Adamson Dolley, of Rochester; vice-president, Dr. Electa B. Whipple, of Buffalo; second vice-president, Dr. Mary H. Cotton, of New York; third vice-president, Dr. Mary Theresa Greene, of Castile; secretary, Dr. Eveline P. Ballantine, of Rochester; treasurer, Dr. M. May Allen, of Rochester. The by-laws provide that during the life of Dr. Dolley the annual meetings of the society shall be held at Rochester, on her birthday.

The New York Academy of Medicine.—At a meeting of this academy, held on Thursday evening, March 21st, the following programme was furnished by the *Section in Genitourinary Diseases*: A symposium on New Growths of the Bladder, arranged as follows: Pathology, by Dr. F. S. Mandelbaum; Diagnosis, by Dr. H. Cabot, of Boston (by invitation); Treatment, by Dr. R. Guiteras; Operative Results, by F. S. Watson, of Boston (by invitation). Discussion by Dr. Howard Lilienthal, Dr. Herman Goldenberg, Dr. Edward L. Keyes, Jr., Dr. Eugene Fuller, Dr. F. Tilden Brown, Dr. John van der Poel, Dr. H. H. Morton (Brooklyn), Dr. Harlow Brooks, and Dr. Willy Meyer.

The *Section in Laryngology and Rhinology* will hold a meeting on Wednesday evening, March 27th, with the following order: Presentation of Patients; Papers; A Discussion on the Indications for and Advantages of the Intranasal Route Over the Radical Operation in the Treatment of Chronic Symptoms of the Antrum of Highmore and the Technics to be Employed, to be introduced by three twelve-minute papers: (a) by Dr. Holbrook Curtis; (b) by Dr. Robert C. Myles; (c) by Dr. Joseph H. Abraham; and followed by Dr. Samuel Lloyd, Dr. C. G. Coakley, Dr. T. P. Berens, Dr. F. J. Quinlan, Dr. J. A. Bodine, Dr. B. Douglass, Mr. E. Mayer, and Dr. J. E. Newcomb. Exhibition of Specimens and New Instruments: (a) Cutting Laryngeal Dilator; (b) Selfacting Epiglottis Lifter, by Dr. J. W. Gleitsman.

The *Section in Obstetrics and Gynecology* will hold a meeting on Thursday evening, March 28th, with the order as follows: Presentation of Specimens: (a) Cyst of Kidney Simulating Ovarian Cyst; (b) Cyst of Fallopian Tube with Twisted Pedicle; (c) Ruptured Dermoid of Ovary; (d) Fibroid of Uterus; (e) Ruptured Tubal Pregnancy; (f) Adenocarcinoma of Uterus, by Dr. G. H. Balleray; Paper: Placenta Prævia, by Dr. Leonard S. Rau. Discussion by Dr. Edgar, Dr. Grandin, Dr. Seeligmann, Dr. Marx, Dr. ...

An Examination for Internes at the Methodist Episcopal (Seney) Hospital, Brooklyn.—A competitive examination for internes will be held at this hospital, on Sixth Street, between Seventh and Eighth avenues, on Friday and Saturday, March 29 and 30, 1907. Six vacancies are to be filled, each for two years (except as stated below), beginning respectively May 1, August 1, November 1, 1907, and February 1, 1908. The three candidates receiving the highest ratings will be appointed May 1st, the highest of the three having a choice of the positions of house pathologist, anesthetist, or junior physician. Owing to the change from six to eight on the house staff, taking place on May 1st, two of the first three appointees will not serve for the entire term of two years. With these exceptions all appointees will serve the entire term. The service is divided into eight equal parts, viz.: (1) House Pathologist; (2) Anesthetist; (3) Junior Physician; (4) Ambulance Surgeon, second division; (5) Ambulance Surgeon, third division; (6) House Physician; (7) House Surgeon, third division; (8) House Surgeon, second division. An oral and practical examination will be held on March 29th, beginning at 2 p. m. Depending upon the results of this test, a certain number of applicants will be notified to appear upon the following day, March 30th, for the written examinations. The written surgical examination will be held from 4 to 6 p. m.; the written medical examination will be held from 8 to 10 p. m. The subjects embraced in the examination are: General medicine, general surgery, obstetrics, genitourinary surgery, practical medical and surgical diagnosis, urinalysis and laboratory diagnosis, bandaging and the application of splints. Dinner will be served promptly at 6.30 p. m. Ap-

plication should be made by personal letter accompanied by two testimonials, one of which must be from a physician. State special qualifications e.g., preliminary education, degrees obtained, special courses taken, practical experience, etc. Full name and address must accompany the application. All applicants will be notified of the result of the examination. Address the Reverend A. S. Kavanagh, superintendent.

Society Meetings for the Coming Week:

MONDAY, March 25th.—Medical Society of the County of New York.

TUESDAY, March 26th.—New York Dermatological Society (private); New York Otological Society (private); New York Medical Union (private); Buffalo Academy of Medicine.

WEDNESDAY, March 27th.—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society.

THURSDAY, March 28th.—New York Academy of Medicine (Section in Obstetrics and Gynecology); Brooklyn Pathological Society; Hospital Graduates' Club, New York; New York Orthopaedic Society.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending March 16, 1907:

	—March 16.—		—March 9.—	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	55	4	41	4
Smallpox	..	..	..	..
Varicella	106	..	90	..
Measles	429	13	416	14
Scarlet fever	365	25	320	12
Whooping cough	45	9	59	8
Diphtheria	256	37	278	29
Tuberculosis pulmonalis	435	209	494	225
Cerebrospinal meningitis	21	16	24	24
Totals	1,712	313	1,725	316

PHILADELPHIA AND THE MIDDLE STATES.

Medical Club of Philadelphia.—At the meeting of the executive committee of this club, held on Saturday, March 2nd, Dr. Alexander Marcy, of Riverton, N. J., was elected governor.

Philadelphia Personal.—Dr. J. W. Leech, of Providence, R. I.; Dr. W. H. Klein, of Lebanon, Pa.; Dr. Mary Langdon, of Bengal, India; and Dr. W. H. Rote, of Williamsport, Pa., are registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

The Visiting Nurses' Society of Philadelphia.—At the annual meeting of the Visiting Nurses' Society of Philadelphia, held on Friday, March 8th, two persons, whose names have been withheld, offered to give the society \$10,000, if it would raise \$15,000. A resolution to accept the proposition was unanimously adopted.

Training School for Nurses of the Pennsylvania Hospital.—The annual commencement of the Training School for Nurses of the Pennsylvania Hospital was held on the evening of Wednesday, March 13th. Dr. James Tyson delivered the address. The diploma of the school was awarded to sixteen young women.

Distribution of the Proceeds of the Philadelphia Charity Ball.—On Tuesday, March 12th, \$9,600 was distributed by the executive committee of the charity ball. The children's surgical ward of the hospital of the University of Pennsylvania, the maternity department of the Jefferson Medical College Hospital, the Children's Aid Society, and the Philadelphia Polyclinic and College for Graduates in Medicine received \$2,400 each.

Scientific Society Meetings in Philadelphia for the Week Ending March 30, 1907.—Monday, March 25th, Society of Normal and Pathological Physiology, University of Pennsylvania. Tuesday, March 26th, Philadelphia Neurological Society. Wednesday, March 27th, Philadelphia County Medical Society. Thursday, March 28th, Pathological Society; Section Meeting, Franklin Institute; Entomological Section, Academy of Natural Sciences. Saturday, March 30th, Samaritan Hospital Medical Association.

Philadelphia Pathological Society.—At the regular semi-monthly meeting of this society, held on Thursday, March 14th, Dr. L. Johnson read a paper on Primary Carcinoma of Gallbladder; Dr. D. Rivas read a paper entitled A Contribution to the Differentiation of Bacillus Coli Communis

From Wild Species to Domestic Water. Dr. A. G. Ellis reported two cases of Accessory Pancreas; and Dr. L. G. Browntree reported a Case of Mediastinal Tumor. Card specimens were exhibited by Dr. A. Gordon, Dr. E. A. Schumann, Dr. G. P. Muller, Dr. A. J. Smith, and Dr. Joseph McFarland.

Philadelphia County Medical Society.—At the regular semi-monthly meeting of this society, held on Wednesday evening, March 13th, Dr. A. P. C. Ashhurst exhibited several cases of tendon transplantation for paralytic and congenital club foot. Dr. Charles H. Frazier read a paper on The Radical Treatment of Trifacial Neuralgia; Dr. W. G. B. Howard and Dr. G. W. Stimson read a Note Upon the Prevalence Among School Children of Diseases of the Ear and Throat; Dr. Harlan Shoemaker read a paper on Backward and Defective Children in the Public Schools; and Dr. C. H. Muschlitz reported a case showing congenital deficiencies, with radiograms, cleft sacrum, imperforate anus, and absence of various bones.

A "Doctor" Wanted for Forgery.—The Philadelphia police have issued a notice requesting the apprehension of a man wearing the button of the American Medical Association and who has given his name at various times as Remus J. Barrow, M. D., Ruffin B. Jaecks, M. D., and Bernard Jacoby, M. D. He is about thirty-nine years of age, 5 feet 9 inches in height, weighs about 190 pounds, has light eyes and very light hair, speaks English with a strong German accent, and also speaks German, French, and Spanish. He has square, firm jaws and very broad shoulders. He has defrauded several wholesale druggists and manufacturers of pharmaceutical preparations by ordering goods for a private hospital and sanatorium in Leon, Mexico, giving forged drafts in payment.

Section in General Medicine, College of Physicians.—At the regular monthly meeting of this section of the College of Physicians of Philadelphia, held on Monday evening, March 11th, Dr. Alfred Gordon exhibited a patient having amyotrophic lateral sclerosis with a bulbar onset, and Dr. A. A. Eshner exhibited a case of polydactylism. Dr. Myer Solis-Cohen read a paper entitled The Coagulation Time of Blood in Disease; Dr. W. Taylor Cummins read a paper entitled Tuberculosis in Orphan Children; and Dr. J. C. DaCosta, Jr., read a paper entitled A Preliminary Note on the Opsonic Index in Diabetes Mellitus. Dr. George William Norris exhibited a Jacquet Cardiophymograph and outlined the clinical utility of this instrument in studying the venous pulse.

Philadelphia Paediatric Society.—At the regular monthly meeting of this society, held on Tuesday, March 12th, Dr. C. H. Muschlitz presented a report on Two Cases of Intrauterine Fracture of the Tibia. Dr. Frank Crozer Knowles read a paper entitled Dermatitis Herpetiformis in Childhood: Report of a Case in a Girl of Six Years; and Dr. D. J. Milton read a Further Note on the Duration of the Prodromal Period in Rôtheln. Cases were presented by the following: Dr. S. S. Woody, a boy of twelve years with cervical ribs, with skiagraph showing fractures; Dr. E. E. Graham, an unusual case of sarcoma in an infant of eighteen months; Dr. W. N. Bradley, an infant of nine months convalescent from typhoid fever; and Dr. J. P. Crozer Griffith, an infant of nine months with typhoid fever.

The Health of Philadelphia.—During the week ending March 9, 1907, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Measles	2	0
Typhoid fever	220	16
Scarlet fever	33	2
Cholera	10	0
Diphtheria	72	14
Croup	9	4
Whooping cough	47	0
Tuberculosis of the lungs	11	0
Pneumonia	165	7
Erysipelas	119	0
Pharyngeal fever	18	1
Cholera	1	0
Measles	24	2
Mumps	8	0
German measles	3	0
Septicæmia	1	0
Anthrax	1	0

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of

the lungs, 5; diarrhoea and enteritis, under two years of age, 13. The total deaths numbered 655, in an estimated population of 1,500,595, corresponding to an annual death rate of 22.61 in a thousand population. The total infant mortality was 117; under one year of age, 88; between one and two years of age, 29. There were 46 still births, 30 males and 16 females. The total precipitation was 0.14 inch. The lowest temperature recorded was 18 degrees, on the 7th.

BOSTON AND NEW ENGLAND

A Bequest to Yale Medical School.—By the will of the late General Samuel E. Narbin, \$5,000 is set aside for Yale Medical School and \$25,000 for the New Haven Hospital.

The Franklin District, Massachusetts, Medical Society.—At a meeting of this society, held at Greenfield, on Tuesday, March 12th, Dr. W. R. Weiser, of Springfield, read (by invitation) a paper on Surgical Aspects of Goitre, and Dr. A. W. Atwood, of Mount Hermon, read a paper on Diseases of the Pancreas.

BALTIMORE AND THE SOUTH

Personal.—Dr. Francis B. Loring, of Washington, D. C., has been appointed by the Baltimore & Ohio Railroad Company to the position of local ophthalmologist for the road, a position left vacant by the death of Dr. E. Oliver Belt, who was killed in the Baltimore & Ohio wreck at Terra Cotta, on December 30, 1906.

Portrait of the Late Dr. Walter Reed.—The board of directors of the State library of Richmond, Va., is contemplating the purchase of a portrait of Dr. Reed, and five pictures have been submitted. These have been passed upon by the art committee, consisting of Admiral Webster, Mrs. George Ben Johnston, and Dr. G. Watson James, of which Admiral Webster is chairman. The picture recommended by this committee will then be passed upon by Mrs. Reed, widow of Dr. Reed, before it is bought by the library board, and a final selection made. The committee has already made its report, but it has not yet reached the library board.

CHICAGO AND THE WEST

Two Medical Colleges Absorbed by the Ohio State University.—Incorporation papers merging the Starling Medical College and the Ohio Medical College, both of Columbus, in one institution, have been drawn up and were filed on March 12th. This was the first step toward the absorption of the medical colleges by the Ohio State University, a movement that has been held in abeyance for several years by the operation of the medical colleges as separate colleges.

Statement of Mortality of Chicago for the Week Ending March 9, 1907, compared with the preceding week, and with the corresponding week of 1906. Death rates computed on United States Census Bureau's figures of mid-year population—2,107,620 for 1907, 2,049,185 for 1906:

	Mar. 9, 1907.	Mar. 2, 1907.	Mar. 10, 1906.
Total deaths, all causes	650	586	607
Annual death rate in 1,000	16.08	19.45	15.44
Sexes			
Males	358	476	354
Females	292	310	253
Ages			
Under 1 year of age	124	148	111
Between 1 and 5 years of age	69	73	41
Between 5 and 20 years of age	44	55	48
Between 20 and 60 years of age	270	333	271
Over 60 years of age	143	177	136
Important causes of death			
Apoplexy	46	19	13
Bright's disease	41	50	45
Bronchitis	18	23	26
Consumption	82	91	76
Cancer	26	25	22
Coronary	13	16	16
Diphtheria	9	5	14
Heart diseases	53	50	46
Influenza	10	5	3
Intestinal diseases, acute	29	34	21
Measles	4	12	9
Nervous diseases	24	25	35
Pneumonia	125	144	90
Scarlet fever	27	23	13
Suicide	7	11	7
Typhoid fever	7	9	7
Violence (other than suicide)	22	69	37
Whooping cough	6	7	1
All other causes	141	108	132

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

March 10, 1907.

1. The Organized Medical Profession and Some of Its Enemies, By EDWARD JACKSON.
2. The Place of Pathology in the University, By EDWIN O. JORDAN.
3. The Adjuvant Action of Quinine Hydrochlorate in Infections by the Bacillus of Tetanus, By EUGENE F. McCAMPBELL.
4. Cerebral Syphilis in Childhood (*Concluded*), By ARTHUR WILLARD FAIRBANKS.
5. Important Considerations in the Extraction of Cataract, By MARK D. STEVENSON.
6. Cataract Extraction with Modified Iridotomy, By F. H. VERHOEFF.
7. The Use of the Secondary Cataract Knife, By MELVILLE BLACK.
8. The Principles and Mechanics of Abdominal Drainage, By R. C. COFFEY.
9. Problems and Duties in Relation to Malaria, By WILLIAM KRAUSS.

3. **The Adjuvant Action of Quinine Hydrochlorate in Infections by the Bacillus of Tetanus.**—McC Campbell says that solutions of the official salts of quinine have a feeble antiseptic action on the spores of tetanus, the hydrochlorate being the most antiseptic. Obviously the antiseptic action depends on the concentration of the solution, as saturated solutions do not disinfect. The lethal dose of neutral quinine hydrochlorate is from $\frac{1}{3500}$ to $\frac{1}{4000}$ the weight of the guinea pig and from $\frac{1}{4500}$ to $\frac{1}{5000}$ the weight of the rabbit. The dose varies with the age of the animal, young animals being more susceptible than older ones. Quinine hydrochlorate has the power of causing a paralysis which persists for various lengths of time in the experimental animals. This action is due to its coagulating action on the protoplasm of the peripheral nerves. Atrophy of the extremities results after large doses. In cases of tetanus in experimental animals, which have been injected with quinine hydrochlorate, the disease resulted only in those cases in which there was a mixed infection. The quinine may have acted indirectly, since its corrosive action at the point of inoculation would make secondary infection more liable. It is possible that the quinine may act as an additional irritant to the nervous system in cases of tetanus or may bring about such changes in the protoplasm of the nerve cells and fibres that they are more easily acted on by the tetanus toxine than normally. In these particulars, however, any mild corrosive substance would serve the same purpose. In cases in which tetanus does not result after injections and there is no secondary infection, the spores have evidently undergone phagocytosis by the leucocytes or tissue cells, as none of them are ever found. Quinine hydrochlorate has not the power of favoring an infection of tetanus except in an indirect manner. It has not the power of awakening an infection when injected at the same time or at other times than that at which the tetanus spores are injected. Quinine hydrochlorate produces a slight leucocytosis and slight paralyzing effect on the leucocytes. Should this paralysis be so extensive as to involve the majority of the leucocytes in the body, it is possible that the spores of tetanus might develop unhindered, as is the case when lactic acid is injected. If quinine of such strength was injected in sufficient amounts, however, to act on the majority of the leucocytes the toxic effects of the quinine would be evident at once and death of the animal would probably result.

5. **Important Considerations in the Extraction of Cataract.**—Stevenson states that in making the incision into the iris in the extraction of cataract, it is well to have the patient look downward and a little outward so as to give the point of the knife greater freedom of

movement without sticking into the inner ends of the lids. Care should also be taken that no portion of the blade which has once touched the lid margin be allowed to enter the section. The crossbar of the speculum should be well down against the cheek. When the section is made in the junction between cornea and sclera, although there is greater hemorrhage, it is to be preferred to one made in the cornea only, for the following reasons: Since there is a good blood supply at the limbus, healing will be more rapid than in the bloodless cornea. A conjunctival flap with all its advantages may be obtained which cannot be done in a purely corneal section. A section within the cornea will usually be smaller and therefore scrape more cortex from the lens and will have its margins more severely wounded than will the larger section in the sclerocorneal junction. The more peripheral location of the wound is an advantage in delivering the lens, as it has to turn less on its axis. Tags of capsule, etc., are not so liable to be incarcerated in a peripheral section, since it is farther from the pupillary area and heals much more promptly with less escape of aqueous, being protected by the conjunctival flap. The danger of prolapse of the iris, which on first thought might seem to be increased, is lessened. The less peripheral the incision the higher is the degree of postoperative astigmatism. The author thinks that iridotomy or sphincterotomy is preferable to iridectomy or sphincterectomy for the following reasons: The operation is easier and simpler to perform, consisting of one simple straight snip of the scissors held at right angles to the surface of the cornea. The total length of the cut iris is less on account of the long U shape of the iridectomy incision from which there is greater exudation and hemorrhage. The cut going directly to the periphery is also in a better position within the eye than a mere sphincterectomy. Iridectomies as done before cataract extraction are usually not peripheral, and the peripheral portion of the iris tends to retain the lens, and afterward the fluid, behind it. When the incision extends through the width of the iris the lens and fluid are not retained behind it. The coloboma is much narrower, a mere slit peripherally, than in an iridectomy and being altogether or almost covered by the upper lid, the patient is not subsequently dazzled so much by the light as after an iridectomy which leaves a broader coloboma. The shape and size of the coloboma, particularly the sharp edges at the pupillary margins, are well known, so that when the toilet of the eye is made it can be readily seen when the iris is completely within the eye. It is not always possible to know the exact size and shape of the piece of iris removed in an iridectomy, thus making it a little more difficult to know when the iris is properly straightened out within the eye.

6. **Cataract Extraction with Modified Iridotomy.**—Verhoeff describes his *modus operandi* as follows: The corneal incision is made in the usual manner, probably best at the limbus. The iris is then grasped with the iris forceps as near its root as possible and a small bit of tissue excised with scissors, so as to leave a small hole in it. The iris will immediately return to the anterior chamber of its own accord. De Wecker's small iris scissors, preferably with blunt pointed blades (Noyes's scissors will probably serve as well), are then introduced through the corneal incision, gently opened, and one blade passed downward through the hole in the iris until it projects below the pupillary margin. The blades are then quickly closed, thus making a clean cut through the iris to the pupil. Owing to the mydriasis produced by the cocaine, the edges of the incision will separate, usually at once, as widely as after an ordinary iridectomy. If, however, the iris is pressed against the cornea by the lens, this may not happen until after the lens has been extracted. The lens capsule may now be opened with the cystotome or capsule

forceps and the lens expressed in the usual way, or the latter may be extracted in its capsule. In making the toilette of the wound care should be taken, as after an iridectomy, to free the pillars of the coloboma from the incision. It is probably best to instil atropine immediately after the operation, since this enlarges the coloboma and thus lessens the danger of iris prolapse.

8. The Principles and Mechanics of Abdominal Drainage.—Coffey remarks that gravity is the most important principle in peritoneal drainage, therefore drainage must reach the most dependent point of the cavity to be drained. The patient must be placed in the position that would naturally cause the fluids in the peritoneal cavity to gravitate to the drain, always bearing in mind the anatomy of the three anatomical cavities or basins. Gauze or capillary drainage is the most widely applicable and useful of all drains if used in sufficient quantity to preclude its being choked by debris and provided the drain is as large in circumference at its exit as it is at any point within the cavity, and provided it is in contact with abundance of dressings on the outside, but it is a very dangerous agent if the principles are not kept in mind in its application. If a surgeon remembers that his drain ceases to be effective in a few hours, he places it with the idea of removing septic fluid in the shortest time possible according to the principles of drainage, and usually gets results, but if he is deluded by the belief that his drainage will continue to work for days and that fluid will run up hill to get to the drain, he will usually place his drain accordingly, and is consequently disappointed in drainage. If a surgeon habitually removes gauze drainage before it is loosened by the natural process, a large per cent. of his cases will have secondary sepsis, post-operative obstruction, or postoperative hernia. Drainage (except a small precautionary cigarette or tubular drain) can rarely be safely removed until the fifth or sixth day—many times are best left till the end of two or three weeks. Capillary drainage is inefficient for draining defined abscess cavities. Tubular drainage is appropriate for defined abscess cavities, but is an uncertain drain in the free peritoneal cavity except when aided by gravity.

MEDICAL RECORD

March 16, 1907

1. The Ocular Lesions of General Arteriosclerosis.
By WILLIAM B. MARPLE.
2. Some Remarks on the Radical Mastoid Operation for the Cure of Chronic Suppuration of the Middle Ear,
By SEYMOUR OPPENHEIMER.
3. The Abortive Treatment of Pneumonia.
By G. LENOX CURTIS.
4. Primary Carcinoma of the Inferior Turbinate, with Report of a Case.
By WILLIAM WESTLEY CARTER.
5. Report of a Case of Inoperable Round Celled Sarcoma of the Ovary, Successfully Treated by the Mixed Toxines of Erysipelas and Bacillus Prodigiosus, Combined Later with Operation,
By HENRY C. COE and WILLIAM B. COLEY.

1. The Ocular Lesions of General Arteriosclerosis.—Marple describes the various ophthalmoscopic signs of arteriosclerosis as follows: 1. A general change in the size of the arteries and veins of the eye ground, narrowing of arteries, and dilation of veins. 2. Change in the color of the arteries. 3. Changes in the calibre of the vessels at different parts. 4. Aneurysmal dilatation or varicose ectosiae of vessels which may be oblong, sac shaped, and two or four times the normal calibre. 5. The progressive venous pulse, visible not only in the central venous branches, but also in the periphery of the fundus, and in all the larger branches of the veins. The author concludes that ophthalmoscopic examination is one of the most ready means for the early detection of important arterial changes. The method of examination is infinitely more delicate than

palpation of the radial or temporal arteries through the skin. We are thus able to diagnosticate with great probability by the ophthalmoscope a vascular disease which is at the bottom of many cerebral disease processes, often threatening the patient's life. Inasmuch as the vascular change very frequently is limited to the internal carotid and its branches, we are therefore sometimes able to diagnosticate the dangerous affection of the cerebral vessels with the ophthalmoscope when the rest of the vascular system does not show the disease.

3. The Abortive Treatment of Pneumonia.—G. Lenox Curtis observes that there are two circumstances which account, in a great measure, for the high percentage of mortality which attends the treatment of pneumonia by prevailing methods. The first is the frequent failure to recognize the fact that, in the form in which it usually presents itself, pneumonia is, as von Jürgensen has stated, a general as well as a local disease, and therefore remedies addressed to the lungs alone, no matter how appropriate and reliable they may be, must often fail to effect a cure. The second is the lack, which has heretofore existed, of a safe and reliable remedy for the removal of congestion. Congestion implies not only stagnation, but chemical deterioration of all of the fluids in the affected area, of the interstitial fluids as well as of those within the capillary vessels. The successful remedy, therefore, must be one which is able, speedily, to remove both of these morbid conditions. Until recently drugs have been almost the only means available for this purpose, but now more efficient measures are at command. The chief of these, according to his experience, is the ozone producing, electric current. And this is the treatment by the author. It should be applied from half an hour to two hours at a time, and repeated several times daily, according to the severity of the case, but never so frequently as to interfere with a proper amount of sleep. It should be applied over the head, spine, and abdomen, as well as over the congested area; over the cerebrum and medulla, because it clears the mental faculties and stimulates the nerve centres which control both respiration and motion; over the abdomen, because it augments the activity of the eliminative organs; and over the congested lung area which can be accurately outlined by the painful sensation caused by passing the electrode over it, because it oxidizes and removes the inflammatory deposits. A very important adjunct of ozonation, and in some measure a substitute for it, is oxygen, especially in the first stage of pneumonia. The advantages of this treatment with ozonation are in addition to the greatly lessened mortality, which is its best recommendation as well as a source of great comfort to the patient, it being highly appreciated by business men and those occupying positions of trust and responsibility on account of the speedy recovery it insures, the rapid and thorough elimination of the disease, owing to the invigorating methods employed, as not only are many complications and sequelæ avoided, but chronic, minor affections from which the patient may have suffered often permanently disappear.

5. Embolism.—Study reminds us that all recognized authorities have in the past taught and emphasized the matter in no uncertain way of the danger of air entering a bloodvessel, and its liability to produce embolism. More recent experiments upon horses and the smaller animals teach that it is only when large quantities of air enter the circulation under considerable pressure that any serious symptoms arise. Then that air may enter a bloodvessel, either from a surgical operation or trauma, to a vessel in sufficient quantities to produce death, is rather improbable. It does seem very probable that metastatic abscesses in various organs and local inflammation, as well as ulcerated conditions, do at times owe their origin to infected emboli. Embolism

has complicated and followed various pathological conditions. It has followed and complicated typhoid fever, pneumonia, diphtheria, childbirth. It is said very frequently to follow surgical operations, more especially within the pelvic cavity. In the differential diagnosis of embolism, where trauma precedes this condition, there are three things to consider. Shock usually occurs within three hours, fat embolism three days, pulmonary embolism three weeks. Seventy per cent. of all emboli probably enter the pulmonary artery. As these bodies most usually originate in a vein, they enter the right side of the heart, consequently the pulmonary artery is a favorable site for their migration. The clinical history of many cases of embolism would indicate that this condition frequently occurs simultaneously with, or following some bodily movements, or excitement, as walking, laughing, or other muscular movements, which seem to aid in liberating these bodies; and when once detached evidently they soon reach their final destination. Embolism may terminate in one of three ways—in instant death, in delayed death, or in recovery. When the pulmonary artery is completely closed death must necessarily soon occur.

BRITISH MEDICAL JOURNAL.

March 2, 1907.

1. Remarks on Idiopathic Dilatation of the Colon, By H. P. HAWKINS.
2. Notes on a Case of Enterospasm, By E. O. ASHE.
3. Simple Colonic Adhesions a Cause of Intermittent Attacks of Abdominal Pains, By A. E. MAYLARD.
4. Some Operations for Removal of Malignant Growths from the Nasopharynx, By F. EVE.
5. Trypsin in Cancer, By W. S. BAINBRIDGE.
6. Influenza, Commencing with Sudden Unconsciousness, and Excessive Dyspnea, By W. HARRIS.
7. Two Cases of Cystine Calculi, By F. A. SOUTHAM.
8. Kala Azar (*Milroy Lectures, II*), By L. ROGERS.

1. **Idiopathic Dilatation of the Colon.**—Hawkins holds that the condition known as "idiopathic dilatation of the colon" arises at all ages from a congenital nervous defect, "neuropathic dilatation and hypertrophy" being a better name for the disease. An early diagnosis is of the greatest importance, because in every case there is a period, short or long, during which a cure can be effected by surgical treatment. The life, however, in all these cases is precarious, and the final, hopeless, toxæmic stage sets in so rapidly and unexpectedly that as a matter of fact nearly all published cases are taken from the dead and very few recoveries are recorded. It seems probable that colotomy is useless, that excision of any part of the colon should never be permitted, but that the best result with the greatest safety is given by anastomosis of the iliac and pelvic colon, coupled with fixation of the dilated pelvic loop. The picture of the condition is as follows: 1. A history of constipation from birth or from the earliest recollection, which is compatible, however, with fairly good health until the final stage is at hand, the first sign of failure being often a loss of weight. 2. A constipation which often alternates with diarrhoea, and which at its worst is often unlike that of obstruction, inasmuch as flatus is often passed and faecal matter may be drained away through a rigid rectal tube. 3. Abdominal enlargement, variable or constant, often asymmetrical, with prominence in the left iliac region, the abdomen, though distended, being seldom tense and often surprisingly flaccid, and rarely presenting any impairment of resonance. 4. Slow alterations in shape, especially in the left iliac region, observable only with patience, quite unlike the tense peristalsis seen in real obstruction. 5. The absence or rarity of pain or vomiting. Neither with real intestinal obstruction nor with simple non-dilating constipation should there be any confusion when this condition is far advanced. While the anatomical arrangement of the colon may be in some degree responsible for the dilatation, yet a purely ana-

tomical explanation will not suffice. The missing factor must be a defect on the nervous side, a "congenital inertness of the colon." The nervous element in the causation is generally paralytic, but it is sometimes spastic. As a rule, the rectum is normal, but it may be enlarged from anal spasm. In most cases the dilatation begins above the rectum, but the lower two or three inches of the pelvic colon often remain unaffected. The enlargement is rapid, but it is never abrupt. The maximum dilatation is often reached in a distance of three or four inches, and this section of the bowel may be likened to a funnel. The size reached may be enormous, a diameter of eight inches having been recorded. As a rule, the loop shape of the pelvic colon is preserved, and this part rises entirely out of the pelvis. On opening the abdomen it may be found to conceal every other structure except, perhaps, part of the transverse colon. When the transverse and ascending colon are involved, the extreme abdominal distention may become a menace to life from interference with respiration, etc. Tetany sometimes occurs. The small intestine is never dilated and is usually gathered into an inconspicuous central handful lying on the vertebral column buried beneath the colon.

8. **Kala Azar.**—Rogers, in his second Milroy lecture, describes the course, complications, and terminations of kala azar. The disease is as terrible individually as collectively, for it literally kills by inches after most prolonged sufferings. There is a marked family incidence, over one third of the cases giving a history of other cases in their family. This points to a house infection and is the basis of successful measures of prophylaxis. The disease is rare among Europeans, but in all of the six cases observed in Assam, the affected men cohabited with native women, and in three instances with the same woman who was infected with kala azar. This points to the most likely mode of infection being a parasite. There is no difference in the incidence of the disease in the two sexes, nor does occupation affect it. The number of children attacked is most striking; one quarter of the cases occur in children under ten years of age, while another quarter occur between the ages of ten and twenty years. Sporadic kala azar is much more common among Europeans than the epidemic form of the disease. Ninety per cent. of the Europeans attacked were born and bred in India, and the remaining ten per cent. had been in that country for eight years or longer. Almost all belong to the poorest sections of the mixed European and native population, among whom sanitation is impossible. Most Europeans contracting typhoid fever in India have been in the country less than three years. As the disease lasts several years, there is no marked seasonal incidence, but the great majority of patients become infected during the cold season; this fact simplifies prophylactic measures. The fever is of long duration, showing alternating remittent and intermittent types for many months at a time, even in markedly cachectic and anæmic patients. Severe septic complications (*e. g.*, cancrum oris) sometimes bring about cessation of the fever and cure. A characteristic of the fever in the early stages is a marked daily double or even triple rise of the temperature. The spleen is greatly enlarged in most cases, reaching to or beyond the umbilicus even in the early stages. The enlargement of the liver is not marked until late in the disease, when it may become cirrhotic and cause ascites. The percentage of the large mononuclear leucocytes in the blood is increased. A marked leucopenia, or reduction in number of the leucocytes to 1,000 or even 500 per cubic centimetre, is most characteristic and enables a diagnosis to be made in the early stages. Splenic puncture for diagnosis should never be done, as it has caused a number of deaths. The treatment of the disease is most unsatis-

factory, the only drug of any value being quinine which does seem to control the fever to some extent.

LANCET.

March 2, 1907

1. The True Aim of Medical Education and the Evil of the Examination Fetish, By L. H. SHAW.
2. Faints and Fainting, By Sir W. R. GOWERS.
3. Kala Azar, Its Differentiation and Its Epidemiology (*Milroy Lectures, II*), By I. ROGERS.
4. Insanity, with Special Reference to Prognosis (*Morison Lectures, IV*), By A. R. URQUHART.
5. Some Observations on Uterine Fibroids: Based on a Series of One Hundred and Fifty Consecutive Cases Treated by Abdominal Operation, By A. E. GILES.
6. Two Cases of Intestinal Obstruction in Children, By E. P. BAUMANN.
7. A Case of Pneumococcal Cerebrospinal Meningitis Simulating "Spotted Fever," By A. H. COOK and G. F. McCLEARY.

2. **Fainting.**—Gowers states that our knowledge of faints and fainting is just enough to obscure our ignorance. The most obtrusive feature of complete cardiac syncope is the loss of consciousness which results, evidently due to the failure of the action of the heart which precedes and attends it. But as consciousness is not the result of the circulation of the blood, so unconsciousness is not the direct consequence of stoppage of circulation. Its immediate cause must be a state of the nerve elements of the brain due to the change in the circulation. Mere failure of the supply of nutrition furnished the brain by the heart is not an adequate explanation. The renewal of nutrition of the nerve elements, the supply on which their metabolic processes depend, is from the plasma about them, derived from the blood indeed, but for the time extravascular. At any given moment the amount of this must be adequate to maintain the metabolic changes and the function that depends on these for a much longer time than that during which consciousness is maintained in syncope. Sudden death in aortic regurgitation is clearly syncopal, but it is so immediately synchronous with cardiac failure as to negative any view that it is due to failure of nutrition. Sudden diminution in blood pressure within the cavity of the skull must, however, exert considerable influence. It will be effective in proportion to its suddenness, as are all variations of intracranial pressure. How the alterations in the nerve elements are produced, and the nature of those alterations, is not known. It may be conceived of as a widespread retraction of cortical dendrites, interrupting their connection with all lower centres. It is doubtful whether true cardiac syncope ever causes absolutely sudden loss of consciousness except when this is due to a fatal arrest of the action of the heart. It seldom causes a hurtful fall, the deliberate onset enabling the patient to lie down, when gravitation ceases to hinder the flow of blood to the brain and the blood pressure is restored. When consciousness returns there is correct perception of surroundings from the first, never the mental confusion and erroneous action common after minor epilepsy. Syncope is often due to a cause which can act only through the nervous system, such as sudden intense pain, the sight of blood, certain odors, etc. Here syncope is probably the result of a profound influence on the sensory regions of the cortex, focused down on the cardiac centre in the medulla. Sudden change of posture is an occasional excitant of loss of consciousness, and if the change is to the erect posture it may be regarded as syncopal. Stooping or lowering the head has the opposite effect on the intracranial circulation, tending to increase the amount of blood in the vessels. Severe paroxysms of coughing may have the same effect.

5. **Uterine Fibroids.**—Giles's paper is based on a series of one hundred and fifty consecutive cases of uterine fibroids treated by abdominal operation. He

considers the following points: 1. Age Incidence. Fibroids are almost unknown under twenty years and rare under thirty; they are met with not infrequently between the ages of thirty and forty years, and are relatively common between the ages of forty and fifty. The reason why the number drops so sharply after fifty years is because many patients have been operated upon, and others have died. The age does not materially influence the character of the tumors, except in the matter of degenerative changes which are strikingly absent before the age of forty years. 2. Sterility. In sixty per cent. of cases of fibroids the patient has not been pregnant, and in eighty-four per cent. the patient has either not been pregnant at all or not for ten years. These figures do not indicate that fibroids lead to sterility, but rather that the absence of pregnancy predisposes to the occurrence of fibroids. It is a warrantable inference that fibroids arise in default of the normal function of the uterus, namely, pregnancy, and that the *modus operandi* may be that the periodic congestion of the uterus in preparation for this function expends itself, if continually thwarted, in pathological, irregular, and permanent, instead of physiological, uniform, and temporary hypertrophy. After the menopause, when periodic congestion of the uterus no longer occurs, the liability to the onset of fibroids ceases. 3. Indications for Operation. The leading symptoms complained of are hæmorrhage, abdominal pain, abdominal swelling, and pressure on the bladder. Complications are present in sixty per cent. of the cases. The fibroid may become impacted or its pedicle twisted. The ovaries are rather prone to cystic degeneration in cases of fibroids. 4. Methods of Operation. The vaginal route has a limited usefulness; it is the only way of removing fibroids lying in the vagina. The abdominal route is the one required in the majority of cases. Hysterectomy is to be done when myomectomy is unsuitable, especially in cases of multiple and cervix fibroids, and where both appendages are diseased.

LA PRESSE MEDICALE.

February 13, 1907.

1. The Protective Function of the Liver Against Toxic Intestinal Substances. Experimental Researches, By G. A. PETRONE and AURELIO PAGANO.
2. Bier's Method in the Treatment of Atonic and Phagedenic Ulcers of the Limbs, By M. BRUAS.
3. Buttermilk Fever, By R. ROMME.

1. **The Protective Function of the Liver Against Toxic Intestinal Substances.**—Petrone and Pagano believe that they have demonstrated by experiment that the liver exerts a very energetic protective function against toxic intestinal products and cannot accept the conclusions of those authors who attribute this defense wholly to the intestinal wall. They state that: (1) The liver beyond doubt exercises a protective function against vegetable alkaloids; (2) it guards against the entrance into the system of many mineral poisons; (3) it protects the system against many substances which are ordinarily met with in the intestine, such as ammonia, aromatic substances derived from the putrefaction of albuminoids, peptones, albumins, soaps, and alcohol. Heterogenous sera and coagulative substances may be placed in the same category; (4) it affords protection against other substances which are more rarely met with in the intestine, such as concentrated solution of sodium bicarbonate, sulphate, or chloride, of adrenalin, of sulphuric ether, of chromic acid, and of phosphorus; (5) it possesses a very energetic protective function against many microorganisms, such as those of anthrax, and of tuberculosis, the *Staphylococcus aureus* and the *Sodium albicans*, while its action in regard to the streptococcus and the bacterium coli is still debatable; (6) it exercises a defensive function against the tetanic toxine, the choleric toxine, the toxic products of the bacterium coli of dysentery, the imme-

diate products of the *Bacterium coli communis*, the alcoholic extracts of putrid and typhoid material, the immediate products soluble in alcohol of the *Bacillus pyocyaneus*, but not against the later products of the last. Contradictory results have been obtained in regard to its action on the toxins of diphtheria, of the *Bacterium coli communis*, and of the typhoid bacillus.

2. **Bier's Method in the Treatment of Ulcers of the Limbs.**—Bruas reports in tabulated form fifteen cases of atonic and phagedenic ulcers which he has successfully treated by Bier's method.

3. **Buttermilk Fever.**—Romme reviews the cases reported by Tugendreich and Rivet in which a fever was induced in children by the drinking of buttermilk. In Tugendreich's cases the fever seemed to be an expression of an idiosyncrasy against buttermilk, while in Rivet's cases an acute gastroenteritis appeared to have been induced.

LA SEMAINE MEDICALE.

1. The Inner Nature of the Process of Degeneration of Nerves. By G. MARINESCO.

2. The Dangers of Habitual Overfeeding. By MARCEL LABBE and HENRI LABBE.

1. **Degeneration of Nerves.**—Marinesco says that, in spite of the many studies which have been made into the nature of degeneration and regeneration of nerves, the inner nature of the process is still obscure. He is inclined to think that a chemical fermentation takes place which produces the degeneration and that regeneration is due to the production of a neurotoxicine.

2. **The Dangers of Habitual Overfeeding.**—Labbe and Labbe ascribe to habitual overfeeding, particularly with meat, a slow intoxication, or autoinfection, from such harmful products as uric acid, the xanthic bases, creatine and creatinine, which accumulate in the system and induce nutritive troubles which present such symptoms as rheumatoid pains, renal lithiasis, gout, obesity, diabetes, and the group of affections usually styled arthritic.

LA SEMAINE MEDICALE.

February 13, 1907.

Torsions of the Great Omentum, By F. LEJARS.

Torsions of the Great Omentum.—Lejars has collated a large number of cases from literature. He divides torsions of the great omentum into three categories: (1) Those which are combined with irreducible hernias; (2) those which are associated with reducible hernias; and (3) those which are not associated with hernia at all. He then considers each of these classes in turn with the clinical, physical, and pathological conditions which have been observed.

BERLINER KLINISCHE WOCHENSCHRIFT.

February 11, 1907.

1. The Place of Artificial Premature Delivery in Practice, By J. VEIT.

2. Concerning Primary and Secondary Tuberculosis in Man, By EDENS.

3. Concerning Serotherapy in Dysentery, By T. SKSCHIVAN and W. STEFANSKY.

4. Concerning a Sphygmoscope, By M. RHEINOLDT.

5. The Problem of Cancer, By J. RÜLF.

6. Infant Feeding, By W. LEWIN.

7. For Patients with Pulmonary P. P. KUHN.

1. **The Place of Artificial Premature Delivery in Practice.**—Veit advocates the induction of premature labor in all cases in which on account of a contracted pelvis there is reason to doubt that the child can be normally born, and to believe that either the child will be sacrificed to save the mother or the mother to save the child. Premature delivery favors the preservation of both lives.

3. **Serum Therapy in Dysentery.**—Skschivan and Stefansky report five cases of dysentery cured by means of injections of serum. Two of the cases were of moderate severity, the other three were very severe.

4. **A Sphygmoscope.**—Rheinboldt has devised an apparatus to be applied to the finger tips for the purpose of determining the blood pressure. It differs materially from the sphygmograph.

5. **The Problem of Cancer.**—Rülf criticises the views drawn by Fischer from the atypical proliferations of epithelium which he produced experimentally.

6. **Infant Feeding.**—Lewin states that the fewer vessels and the fewer manipulations are employed in the preparation of the milk, the better the latter can be protected from infection.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT.

February 12, 1907.

1. The Mode of Action of the Modern Treatment of Gonorrhœa, By ZIELER.

2. With Regard to the Ætiology of Erythema Nodosum, By HILDEBRANDT.

3. The Treatment of Diabetic Phthisis, By THORSPECKEN.

4. Nerve or Microorganism? By BAB.

5. Concerning the Lens with Doubled Focus, By FREYTAG.

6. Concerning the Action of Uviol Light Upon the Skin and Its Therapeutical Application in Dermatology, By STERN.

7. A Case of Labor in an Advanced Case of Tabes Dorsalis, By ZACHARIAS.

8. Obstetrics in Country Practice, By MILLER.

9. Bier's Stasis in Sea Sickness, By RÖSEN.

10. From a Field Hospital in South West Africa, By LION.

11. Concerning the Color Index of the Red Blood Corpuscles, By MAYER and HEINECKE.

12. F. A. KEHRER, By HEIL.

1. **Modern Treatment of Gonorrhœa.**—Zieler's article is laudatory of Neisser, because he discovered that gonorrhœa is a disease which is dependent on a microorganism and thereby demonstrated that the proper treatment is antiseptic.

2. **Ætiology of Erythema Nodosum.**—Hildebrandt reports a case of this nature very fully and carefully. He considers it very probable, although not demonstrated that a form of disease which cannot be differentiated from erythema nodosum can be produced by the tubercle bacilli.

3. **The Treatment of Diabetic Phthisis.**—Thorspecken reports a case in which the tuberculous process, which had become quiet, was excited anew by an attack of diabetes, and is of the opinion that when these two diseases are concurrent in the same patient the diabetes should receive the energetic treatment, no matter which may be the primary disease.

4. **Nerve or Microorganism?**—Bab argues that the spirochæta pallida detected by the silver stain is not a terminal filament of a nerve, or any other tissue element, but a microorganism.

6. **Therapeutical Use of Uviol Light in Dermatology.**—Stern believes that we have in uviol light a valuable addition to our therapeutical armamentarium. The advantages afforded consist in its simplicity, the proper dosage through changes of the distance, the harmlessness of the procedure, its cleanliness, and its painlessness.

7. **Labor in Tabes Dorsalis.**—Zacharias reports a case of labor in a woman, forty-three years of age, who was in an advanced stage of tabes dorsalis. A notable point is the absence of pain during the uterine contractions.

February 10, 1907.

1. Differential Diagnosis Between Reflex and Absolute Immobility of the Pupil, By BACH.

2. Further Contributions to the Knowledge of the Proteolytic Leucocyte Ferments and their Antiferments, By MÜLLER and KOLACZEK.

3. The Specific Solubility and Its Application in Forensic Examination of the Blood. By DEHNE.
4. Examinations of the Blood in Asthmatics. By SALECKER.
5. Concerning Impure Heart Sounds in Children. By NEUMANN.
6. Operative Treatment of Laryngeal Stenosis. By WENDEL.
7. The Question of Appendicitis. By GRIHAMMER.
8. The Principal Cause of Retention of the Placenta and Its Avoidance. By DURLACHER.
9. The Collective Work of the Bavarian Committee for the Investigation of Cancer During the Year 1905. By KOLB.
10. A Case of Dystrophia Musculorum Progressiva Associated with Basedow's Disease. By LIEBERS.
11. Contribution to the Question of the Antitoxine Treatment of Tetanus. By URBAN.
12. The Radioactivity of the Stebener Chalybeate Springs. By HAMMER.
13. A Sled Frame for a Child's Wagon. By NERLICH.
14. Carl Schonborn. By REICHARDT.
15. Dr. Carl Ritter v. Lotzbeck. By K. S.

1. Differential Diagnosis Between Reflex and Absolute Immobility of the Pupil.—Bach says that in some cases the differential diagnosis between these two conditions presents the greatest difficulty, but as a rule, it can be made when the patient has been under observation for some time, because as the absolute immobility improves, the light reaction gradually returns, while the reaction to convergence becomes normal; in reflex immobility a return of the reaction to light is of the greatest rarity.

3. The Specific Solubility and Its Application in Forensic Examination of the Blood.—Dehne gives the following brief summary of his conclusions: 1. As specific solubility he denotes the fact first discovered by L. Michaelis that specific clouds and precipitates are soluble in the excess of the homologous undiluted serum, with the dependent inhibition phenomenon. 2. The application of this test with positive results of Uhlenhuth's reaction affords greater proof to this procedure in forensic practice. 3. With the aid of the specific solubility it can be determined from what kind of animal the blood came, even when the traces of blood are very slight. 4. Clouds in a heterologous serum are soluble only in the excess of the same heterologous and in homologous sera, but not in any other heterologous serum.

4. Examination of the Blood in Asthmatics.—Salecker says that in asthmatics the percentage of the various forms of white blood corpuscles varies. During the interval the number of polynucleated cells is reduced to 40 per cent., that of the mononucleated to 45 per cent., and that of the eosinophiles is increased to 12 per cent. or more. Among the polymorphous nuclei there is often a high percentage of those with one or two nuclei. Among the mononucleated the leucocytes and transitional forms are greatly increased. During or shortly after the attack there is an increase of the total number of leucocytes affecting principally those with polymorphous nuclei which may form sometimes 80 per cent. and upward of the total number. The mononucleated cells and eosinophiles decrease in number, the latter sometimes almost disappear. Soon after the attack the polynucleated cells decrease, the mononucleated and eosinophiles increase, and in the course of a few days the proportions have returned to normal.

6. Operative Treatment of Laryngeal Stenosis.—Wendel reports a case of fracture of the larynx in which a cicatricial diaphragm had formed beneath the glottis, involving the lower surface of the true vocal chords and developed a stenosis. Laryngotomy was performed, the actual condition produced by the fracture investigated, and the cicatricial diaphragm incised. Three months later the patient was breathing

freely, his voice was loud and strong, but had a roughness which was decreasing.

8. The Principal Cause of Retention of the Placenta and Its Avoidance.—Durlacher thinks that the best way to avoid retention of the after birth is not to touch the uterus or the abdominal wall after the expulsion of the child.

11. Antitoxine Treatment of Tetanus.—Urban reports three cases of tetanus in which he used antitoxine. Two of the patients recovered, one died.

LA RIFORMA MEDICA

January 23, 1907.

1. The Mononuclearity and the Cytoviric State of the Mononuclear Cells in the Blood. Flagellated Protozoa and Kurloff-Demel's Granules in the Mononuclear Cells of the Blood of Guinea Pigs. By VINCENZO FATELLA.
2. The Relation of Blood Pressure to the Rate of Elimination of Methylene Blue in Precocious Dementia. By CARLO BESTA.
3. Clonic Tonic Generalized, Continued Spasm, and Acute Polycencephalitis in Children. By ORAZIO D'ALLOCCO.

2. Blood Pressure and Elimination of Methylene Blue in Precocious Dementia.—Besta examined thirty-one patient with precocious dementia and found that their blood pressure was usually considerably less than normal, while their pulse rate and their temperature ordinarily corresponded to the normal standard. These patients exhibit a deficiency in the contractile power of the heart muscle, shown also by the very slight effect which the active principle of digitalis produces in these patients as compared with normal individuals. The elimination of methylene blue in these patients is markedly slower than in normal persons, this being the result of both the weak myocardium and the lessened blood pressure.

ROUSSKY VRATCH

January 27, 1907.

1. On the Prolapse of the Bladder Complicating Vesicovaginal Fistulae. By V. S. GROUSDIEFF.
2. Abscesses of the Brain as Sequels of Hemorrhage from the Ear. By N. P. TROFIMOFF.
3. On the Pharmacology of Clavin. By V. P. MOSESHVILI.
4. The Diagnosis of Cerebrospinal Meningitis. By F. L. DMITRENKO.
5. Report of the St. Petersburg Lying-in Asylums for 1906.

1. Prolapse of the Bladder Through Vesicovaginal Fistulae.—Grousdieff reports the case of a woman, aged thirty-five, in whom the entire bladder prolapsed through a small vesicovaginal fistulae. The patient had been doing severe physical work, and her uterus was retroverted and retroflexed, while both the uterus and the anterior vaginal wall were prolapsed. The prolapse of the bladder through the vesicovaginal fistula is a very rare and very curious complication, particularly on account of the gangrene which is apt to occur in the bladder wall. The treatment consisted in reposition of the prolapsed bladder by means of tampons and vaginal colpeurynters, followed by the repair of the fistula. The ætiology in this case was referable to the last two labors of the woman, which were particularly prolonged and difficult. The patient made a good recovery, and was able to retain her urine fairly well.

2. Cerebral Abscess Following Suppurative Otitis.—Trofimoff reports his observations in ten cases of brain abscess following suppurative otitis. In seven of these the diagnosis was made during life, in the remainder at autopsy. Among the latter cases there was one of syphilis in which a mastoid operation was performed disclosing a large extradural abscess. The cerebral abscess was discovered at autopsy, and the brain symptoms had been taken during life for results of syphilis. Five of the seven patients in whom the diagnosis was made during life were operated upon, and of these two

recovered. In five cases the abscess was situated in the left hemisphere of the cerebellum, in the remaining five in the temporal region of the great hemispheres. In most of the cases the suppurative process in the ear had been acute, and the brain complication was the result of an acute process. As regard the symptoms, eight patients complained of severe headache, three of vertigo (of the latter two died of cerebellar abscess and one with vertigo towards the right side, died of abscess in the left temporal region); vomiting was noted in four patients, ataxia in one with a cerebellar abscess. Paralysis of the facial nerve was found in three. In one case there were epileptiform convulsions.

4. Difficulties in Diagnosticating Cerebrospinal Meningitis.—Dmitrenko discusses in detail the difficulties connected with the diagnosis of cerebrospinal meningitis, and reports three cases which illustrate almost insuperable difficulties in this direction. In the first of these almost every classical symptom of cerebrospinal meningitis was present, but the autopsy showed that the patient died of pyæmia with many abscesses in the kidneys and the lungs, the germ evidently responsible being the staphylococcus. The brain, however, did not show any signs of meningitis, not even œdema nor congestion. In this patient lumbar puncture had not given any fluid whatever, a condition which occasionally is found in cerebrospinal meningitis. Clinically this was a meningitis, but pathologically it could not be called an inflammation of the meninges. In the second case the symptoms of meningitis were well marked, but the autopsy showed the absence of meningitis and the presence of a thrombus in the temporal portion of the carotid, and a verrucous endocarditis with ulcerations in the mitral. In the third case the first impression was that of a cerebrospinal meningitis, but the stiffness of the neck was not well marked, the temperature was normal, and there were evidences of nephritis, so that the diagnosis was uræmia. At autopsy, however, a purulent cerebrospinal meningitis was found due to Fraenkel's diplococcus and complicated by nephritis. In this instance also lumbar puncture gave no fluid whatever, probably because the pus was so thick. The bladder was found full of urine, showing that there was no uræmia, but that the symptoms were due to meningitis.

February 3, 1907.

1. The Significance of Moulds in Dermatology and in General Medicine, By I. F. ZELENEFF.
2. Cases of Phlegmonous Enteritis, By N. A. SOKOLOFF.
3. A Method of Rapid Isolation of Pure Oxyhæmoglobin, By I. A. TSCHUEFFSKI.
4. On the Technique of Perineal Operations, By B. N. KHOLTSOFF.
5. Natural Gastric Juice in Therapeutics and Its Method of Preparation, By V. N. BOLDIREFF.
6. Acidophile Germs in the Intestine of Some Cold Blooded Animals, By N. P. TETROFF.
7. The Infant Mortality of Russia and the Means for Combating the Same (*To be continued*), By N. P. DAMILOFF.

4. Perineal Operations.—Kholtsoff considers the prerectal incision as superior to all others in perineal operations. This incision was first used by the elder Nelaton, and has been employed by many surgeons for removing prostates through the perinæum. It extends at one finger's breadth from the rectum, curving forward from one ischial tuberosity to the other. This incision, according to the author, is to be preferred in external urethrotomy, perineal lithotomy, partial resection of the urethra, diffuse suppurative pelvic cellulitis, etc., and is superior to the median incision which is so frequently used.

THE JOURNAL OF NERVOUS AND MENTAL DISEASE.

March, 1907.

1. Migraine and Hemianopsia, By JOHN JENKS THOMAS.
2. Peripheral Facial Diplegia and Palatal Involvement, By GEORGE W. JACOBY.

3. A Study of the Sensory Symptoms of a Case of Pott's Disease of the Cervical Spine, By FRANK R. FRY.
4. Hemilingual Atrophy of Traumatic Origin, By SMITH ELY JELLIFFE.

1. Migraine and Hemianopsia.—Thomas reviews the cases referring to the title of his article, to be found in the literature and adds the history of three of his own. He observes that a consideration of these cases of permanent hemianopsia, and cerebral paralyses, and aphasia reported by various writers shows conclusively that such accidents occurring during an attack of migraine are not exceedingly rare, and at least indicate that migraine may be the exciting cause of a cerebral thrombosis, or possibly a hæmorrhage, but in most cases there is at least strong ground for believing that the cerebral lesion was due to arterial disease, the migraine being at the most only an exciting cause and in some cases the headache was probably symptomatic only, while in other cases the presence of migraine at all, even as an independent disease, seems very doubtful. The general opinion of writers upon migraine is that the cause of the attacks is a vasomotor disturbance, probably dependent upon some toxic cause of unknown origin, though the former division into cases of vasoconstriction, and dilatation must undoubtedly be given up, if for no other reason than that the condition of the superficial vessels, from which the argument was drawn, often varies in the same person at various stages during a single attack. Spitzer, in 1901, advanced an ingenious theory to account for migraine. He ascribes it to changes apparently supposed to be inflammatory in character about the foramen of Monroe, which produce a relative or absolute stenosis, then he also assumes a hyperæmia causing an increase of fluid in the ventricles, and so a pressure which is greater upon the veins; and hence there is added a passive hyperæmia, and he thinks often an actual tearing of the tissues and hæmorrhages. When the subdural spaces are filled the headache begins, then the ventricles dilate, the foramen opens, and the fluid passes off. Various objections have been urged to the theory, such as the fact that all symptoms disappear in the intervals between the attacks, which we should hardly expect in the case of organic changes such as have been supposed. Neither does such a theory explain the frequent unilateral character of the headache, or its shifting from one side of the head to the other during an attack, nor its heredity. Möbius thought that in migraine there are changes in the cells in the brain. Oppenheim considers a vasomotor constriction of the vessels the most probable explanation. Stekel and Meige and most other recent writers agree with this opinion. In considering his cases the author thinks that attacks of migraine may result in an area of softening in the brain, which shows itself by a permanent paralysis, aphasia, or hemianopsia, and that in most instances this is due to the attack favoring a vascular lesion in persons who have already disease of the walls of the bloodvessels, but that in certain cases the vascular lesion may occur in young persons whose bloodvessels are in all probability in a normal condition.

4. Hemilingual Atrophy of Traumatic Origin.—Jelliffe reports a case of hemilingual atrophy, due to trauma. The patient was a passenger on a trolley car, when he was terribly and suddenly thrown backwards by reason of a rear collision. He was not rendered unconscious, but able to make a call, and then returned home and went to bed, where his case was diagnosed as injury to the spine. The author saw him about a year later, and the only anomaly was found in the tongue. It was broadened, moist, thrown up with numerous furrows, and there were very marked constant fibrillary contractions sharply limited to the atrophic side. Pinching the tongue showed a loss of muscular substance. The motion imparted by the atrophied muscles was distinctly weaker than the ac-

tion of the well side. Thus on protrusion the tongue tip was forced to the atrophied side and a typical though slight bending of the lingual raphe was observed. By strongly pulling the tongue within the mouth a certain amount of bending in the opposite direction could be induced. The movements of the tongue, however, were not strongly interfered with. A slight but distinct slurring of speech could be detected for certain labials. There were no detectable changes in taste perception. Electrical tests were not satisfactory, as a typical reaction of degeneration was not obtained. There were no observable changes in the innervation of the palatal muscles and none in the larynx. Slight vasomotor disturbances were noted. There is ample justification for the view that a traumatic luxation of the upper cervical vertebrae may give rise to this uncomplicated picture, and the case is presented as one of simple hemilingual atrophy due to injury to the hypoglossal nerve at its exit from the skull. A Röntgen photograph shows a distinctly anomalous shadow in the region of the third cervical vertebra. It is not distinct enough, however, to be offered as conclusive evidence of the injury.

AMERICAN JOURNAL OF OBSTETR. CS.

March, 1907.

1. The Clinical Significance of the Urinary Nitrogen. The Metabolism in the Toxæmia of Pregnancy.
By J. EWING and C. G. L. WOLF.
2. Gonorrhœa in Women. Some of Its Unusual Features.
By G. L. HUNNER.
3. A Case of Malignant Teratoma of the Ovary.
By R. T. FRANK.
4. Should the Ovaries be Removed when Hysterectomy or Removal of the Body of the Uterus is Done?
By J. W. BOVÉE.
5. A Report of the Gynæcological Service in the Georgetown University Hospital from Its Opening Until the Present Time.
By J. T. JOHNSON.
6. The Ætiology of Endometritis.
By A. EWALD.
7. The Symptoms and Clinical Course of Endometritis.
By J. O. POLAK.
8. Treatment of Endometritis.
By R. WALDO.

1. **Urinary Nitrogen.**—Ewing and Wolf found that the study of the urinary nitrogen had the following practical applications in pregnancy: It may determine the existence and gravity of a toxic condition. In urgent cases it may be relied upon, with some caution to determine the safest treatment. It often demonstrates the trifling importance of symptoms referable to transitory gastric disorders. It may indicate abnormal metabolism in the absence of other symptoms and form the basis of treatment for avoiding the serious complications of pregnancy. It may determine the true condition in the preeclamptic state and distinguish between chronic nephritis and impending eclampsia. It is a guide for determining the progress of convalescence. It should not be relied upon to the exclusion of other important data. Its study furnishes a new and fundamental point of view which must be carefully tested with the view of supplementing other data with information of a more precise character.

2. **Gonorrhœa in Women.**—Hunner found that there was occasionally stenosis at the vulva resulting from this disease in sterile women. This greatly interfered with coitus. Bartholin's glands are often infected, and the resulting abscess may break into the bowel, causing rectovaginal fistula. Gonorrhœal urethritis is of very common occurrence as well as cystitis, but it is believed that they are usually of short duration and self limited. Attention is called to the involvement of the crypts and follicles around the urethra, and to the fact that treatment with the actual cautery is usually effective. Stricture of the urethra is more common in women than is generally believed, and may be the only evidence of preexisting gonorrhœa. A late sequence of this disease is frequently chronic urethritis with chronic inflammation of the trigone of the bladder, and this is

treated by local applications of ten per cent. silver nitrate solution twice a week. Gonorrhœal endometritis is believed to be infrequent, but it is very persistent should it occur, and may be treated successfully with the Paquelin cautery. Gonorrhœal pus tubes are sometimes best treated by rest, heat, well regulated diet. If the tubes are removed it often happens that the cure is not permanent. Peritonitis of gonorrhœal origin is a severe complication but is usually of brief duration.

4. **Removal of the Ovaries.**—Bovée thinks that: 1. The existence of an ovarian secretion has not been proved and therefore cannot contraindicate oophorectomy. 2. In all cases of removal of the uterus or its body for disease in women more than forty years of age it is better to remove the ovaries also. 3. Inasmuch as malignancy is found in five per cent. of cases of uterine fibroids which are operated on, while there is marked complication of the appendages in thirty per cent. it would seem to be the part of prudence to remove the ovaries with the uterus. 4. Removal of the ovaries is imperative in cases in which radical surgery is indicated on account of malignant disease of the uterus. 5. The indications for removal of the ovaries in connection with partial or complete hysterectomy are increasing rather than diminishing. 6. When ovarian growths of a bilateral nature complicate a hysterectomy, both the ovaries should be removed.

6. **The Ætiology of Endometritis.**—Ewald divides this disease into two groups, those which are and those which are not of bacterial origin. Those which are not of bacterial origin are usually secondary to disease of the annexa, myoma, and carcinoma. The circulatory system and certain chronic diseases are also causative. He considers three forms of this variety (1) glandular, (2) interstitial, (3) diffuse. Endometritis which is of bacterial origin is divided into (1) gonorrhœal, (2) tuberculous, (3) putrid, (4) septic, and (5) decidual. Inflammation of the cervical canal and vaginal portion must be distinguished from inflammation of the endometrium. The former is very often accompanied by erosions of the cervix, and these may be simple, papillary, follicular, or congenital.

Letters to the Editors.

PAINLESS LABOR.

156 WEST CHIPPEWA STREET,

BUFFALO, March 5, 1907.

To the Editors: Apropos of your discussion of painless labor, I may allude to a young primipara seen at the Rochester City Hospital during my interne service in 1888. The patient felt the "pains" as contractions, and subsequently suffered some discomfort from them on account of the sense of exertion and fatigue, but absolutely denied any true pain. Another patient, a secundipara, entered the hospital during the second stage and alleged that she did not even know she was pregnant. She had bearing down sensations, but no true pain till quite late in labor, when a few strong contractions were accompanied with pain. I have had fewer than a hundred labor cases, all told, and, from the nature of my practice, have not seen any cases of labor for ten years or so, but from the general impression derived from conversation with physicians I have always believed that painless labor was well recognized and not phenomenally rare.

A. L. BENEDICT.

THE URINE IN PREGNANCY.

NEW YORK, March 6, 1907.

To the Editors: My attention has been called to a recent article in the *Bulletin of the Lying-in Hospital* bearing the foregoing title, in which Professor F. E.

Sondern endeavors to criticise the views which were published by me in this *Journal* in April, 1906.

The criticisms of Dr. Sondern are directed to the following points:—

1. That I have denied that the evidences of toxæmia are to be derived from an analysis of the urine.

2. That clinical observations show that there is no difference between neurotic and toxic vomiting. These differences are, moreover, not indicated by the urinary analysis.

3. That I concluded the differences observed between those patients excreting relatively high ammonia and those with a lower ammonia coefficient were *probably due to the fact that one set was composed of lean women without endogenous fat*.

I shall take up Dr. Sondern's criticism of these points seriatim, and also attempt to point out where Ewing, my coworker in this field, and I have been misquoted. At the same time, in replying, I wish to say that, as the whole article is so burdened with attempts at literary effect, the exact sense is difficult to obtain. Moreover, where a definite point does emerge, a degree of inaccuracy and ipisinformation is displayed which is most unusual.

1. Contrary to Dr. Sondern's statement, the work which Ewing and I have been engaged in for the past three years has been directed entirely toward showing that the toxæmias, not only of pregnancy, but of typhoid, acute yellow atrophy of the liver, alcoholism, and pneumonia, are closely connected with marked changes in the type of urine excreted. I am, however, strongly of the opinion that no one factor is a sufficient guide, but that the urinary picture as a whole must be taken into consideration. With regard to the relationship of ammonia to total nitrogen, I have pointed out that the work of Satta in normal subjects and of Scholten in pernicious vomiting show that a urine of the acidosis type reverts to the normal when the patient receives a sufficient quantity of carbohydrate.

2. As a matter of fact, there is a very marked lack of agreement on the part of clinical observers as to a distinction between neurotic and toxic vomiting, despite Dr. Sondern's dissent. The evidence against this subdivision is just as strong as that in its support. This evidence is reviewed in some detail in a recent article by Ewing and myself in the *American Journal of Obstetrics*.

3. This statement is a direct misquotation and perversion of the wording of my article. Exactly it ran: "It would appear to me that the differentiation given by Williams as a result of his urinary analyses might equally well be made," etc. This is something quite different from "probably." What Dr. Sondern means by "endogenous fats" can only be conjectured by somewhat remote flights of the imagination. Physiological literature is indebted to him indeed for a new conception regarding body fats.

I shall now take up some of the inaccuracies of Dr. Sondern's article which do not directly concern my own paper.

The attempt which Dr. Sondern has made to belittle the significance of albuminuria in pregnancy appears to me to be unfortunate. While the presence of albumin in the urine is not always a sign of renal affection, and the absence of it no criterion of a safe condition of affairs, its appearance in the urine should always put the clinician on his guard against the possible onset of grave disturbances.

It is difficult to understand what Dr. Sondern means by increased assimilation. Apparently this is associated in his mind with increased output of nitrogen. The investigations of pathological cases on a standard diet disprove this statement. It can be shown that a patient with a high grade toxæmia will eliminate thirty grammes of nitrogen on a diet containing no nitrogen

at all, while a normal subject on the same diet would eliminate but three grammes. According to Dr. Sondern, the thirty grammes would indicate a very satisfactory type of metabolism, whereas the reverse is actually the case. When these patients convalesce, the nitrogen excretion tends to diminish, owing to retention. In recovery from vomiting it is possible that the excess of nitrogenous food will show in the urine, provided retention does not take place. This is, however, no sign of increased assimilation, nor is it a sign of an improved condition.

The depression in the mineral and ethereal sulphates—whether relative or absolute, it is difficult to make out from Dr. Sondern's article—gives no information regarding pathological processes, for as yet too little is known of the physiological conditions under which these factors change. The amount of ethereal sulphates is not at all a measure of intestinal putrefaction, for they are in great part the products of intermediary metabolism quite distinct from the intestine, nor is the indican quantitatively related to these sulphates, except in so far as it forms a small part of their total amount. Those who have done exact metabolic experiments with men and animals will agree that often one finds high indican when the ethereal sulphates are low, and just as frequently high ethereal sulphates are present with the complete absence of indican.

With regard to the presence of skatol compounds in the urine, the work of Staal tends to show that they are not present at all. The evidence he presents is well nigh conclusive that what Dr. Sondern and others have mistaken for skatol red is none other than the long known urochrome, which is not a skatol compound.

Finally, Dr. Sondern cannot possibly be informed of the views of Ewing regarding the significance of amino-acids in pregnancy, for any views on that subject have only recently been published in a paper written, in conjunction with myself, which has just appeared in the *American Journal of Obstetrics*. The reader of that article will at once satisfy himself that neither Ewing nor I have expressed any view regarding the importance of this fraction of the nitrogen above any other.

I have entered unwillingly into this discussion, for the polemical interest which it may have does not appeal to me. I am, however, deeply concerned that the profession should realize that the clinical significance of urinary analyses can only be built up on accurate scientific foundations. As these foundations are lacking in Dr. Sondern's article, one can only conclude that his recent considerations of these important problems are fraught with most mischievous consequences to the profession at large.

CHARLES G. L. WOLF.

Proceedings of Societies.

THE NEW YORK ACADEMY OF MEDICINE.

SECTION IN GENITOURINARY DISEASES.

Meeting of January 16, 1907.

Dr. FOLLEN CABOT, Chairman.

Cystitis, Secondary to Hypertrophic Prostate, Cured Without Operation.—Dr. VICTOR C. PEDERSEN presented a man, sixty-three years old, married, and the father of several children. He gave no venereal history. Rectal touch revealed a large, rather soft prostate, hypertrophied in all its lobes. In addition to tonics, the patient was given seven and a half grains of urotropin three times daily, and irrigations of the bladder through a soft rubber catheter were begun. Nearly nineteen months elapsed between the second and last cystoscopy, and during that period the urotropin had been pushed

and the irrigations faithfully continued. At this examination the ureters were both reasonably in view, and the whole mucosa had recovered quite fully. A few spots remained damaged beyond full restoration. Urinalysis showed normal urine, all the elements of cystitis having disappeared.

Dr. Pedersen said he showed this patient not with the idea of combating the advisability of an operation in the treatment of this class of cases, but simply as an illustration of the fact that in some instances the bladder could be restored to a healthy condition by prolonged and faithful treatment and without surgical intervention.

Dr. EDWARD L. KEYES, JR., congratulated Dr. Pedersen upon the good result he had obtained in this case. He referred to the impossibility of preventing infection in introducing a patient into catheter life, in spite of every precaution, and stated that there were exceptional cases, like the one shown by Dr. Pedersen, where the patient was apparently cured of his vesical infection. He recalled one such case in a man who, as a result of syphilitic myelitis forty years before, had complete retention of urine. His bladder promptly became infected and in spite of irrigation and all sorts of internal medication the urine remained very purulent until about 1898, when urotropin was first introduced. He was then given fifteen grains of the drug in the course of twenty-four hours, which immediately aggravated his symptoms. The dose was then reduced to ten grains, and from that time on his symptoms and the character of his urine greatly improved. Eighteen months after beginning the use of the drug, his urine was absolutely clear. He was still taking ten grains of urotropin daily, and the urine remained clear. But cessation of treatment was always followed by clouding of the urine.

Dr. JOSEPH WIENER said it was unfortunate that such good results could not oftener be obtained by the non-operative methods of treating prostatic hypertrophy. They were certainly worth a trial. He had recently seen a man, eighty-one years old, who had all the symptoms of acute cystitis, but had been made very comfortable for several months by two irrigations of the bladder with a bland solution, and the continuous use of urotropin. In speaking of urotropin, Dr. Wiener said he had never given more than twenty grains daily, and he questioned the advantage of administering it in much larger doses, as Dr. Pedersen had done. The drug was excreted in the urine as formalin, which even in a very weak solution had a distinct bactericidal action.

The CHAIRMAN said that, while the result in cases like the one shown by Dr. Pedersen was very gratifying, it was apt in some instances to give the patients a sense of false security, and the delay might perhaps render them unfit for an operation later on.

Ureteral Stricture.—The CHAIRMAN reported the case of an electrician, thirty-two years old, who gave a history of having had an abscess of the kidney when he was two years old, attended with pyuria and a good deal of pain. Subsequently he underwent an operation for appendicitis. Otherwise his past history was uneventful, and he had always been strong and well. In November, 1905, he began to have much pain over the left kidney, radiating into the corresponding groin. These attacks of pain were strongly suggestive of a stone in either the kidney or the ureter. The urine contained pus, but there were no evidences of cystitis. When the chairman first saw the patient, two or three months later, he examined him with the cystoscope and found a healthy bladder. The urinary secretion from the right kidney was normal; that from the left side contained a small quantity of pus, and on that side the ureteral catheter met with an obstruction about two inches and a half from the orifice. No stone could be detected. The man's symptoms gradually became aggravated.

His pain was more severe and he had a high temperature. He was admitted to the Postgraduate Hospital, where an incision was made over the left kidney, which was found to be utterly destroyed. It consisted of a mere shell, containing about a quart of fluid. No calculi were found. Nephrectomy was done, but the man's condition did not warrant an exploration of the ureter, which was left behind. The patient made an uneventful recovery from this operation and returned to his home, in Boston, and resumed his work. In the course of six months, however, his attacks of pain recurred and he again came to New York. He was extremely nervous, so that cystoscopy had to be done under chloroform. The bladder was apparently in a healthy condition; the right ureter was found, but the left ureteral orifice could not be found. His urine, which had been normal after the previous operation, now contained a large amount of albumin, and Dr. W. J. Brooks, who examined it, said it showed evidences of chronic parenchymatous nephritis. The abdomen was again opened, this time anteriorly, in order to relieve the attacks of pain from which the patient was suffering, which were attributed to the ureter that had been left behind. The ureter was found lying behind the peritonæum; it was enormously dilated, being fully as large as an adult wrist, of a goose neck shape, and in appearance and contour resembling the rectum. There were many adhesions binding it to the peritonæum, and as the patient's condition did not warrant its extirpation, it was simply lifted up and stitched to the wound. Forty-eight hours later it was opened, evacuating over a pint of fluid. A drainage tube was then inserted, which the man was still wearing. Since the operation the patient had been entirely free from pain. His urine had entirely cleared up.

Dr. WIENER said that in certain cases where the ureter was left after nephrectomy it might attain a very large size as the result of inflammatory exudates. In a case that was recently seen by Dr. Howard Lilienthal the patient was a woman, eight months pregnant, who was suffering from pyelitis and a large swelling in the region of one kidney. Abortion was effected, and the patient left the hospital two weeks later, apparently improved. She returned in the course of ten days, however, with a temperature of 104° F., together with a high leucocyte count and much pus in the urine. An examination at this time revealed a large mass adherent to the left wall of the vagina. It was fully an inch and a half by two inches in size, and was regarded as an enlarged ureter. Upon incision, it proved to be the ureter, surrounded by a huge inflammatory exudate. It was opened and fully a pint of pus was evacuated, which of course had its origin in the kidney above. The fistulous opening into the ureter was still discharging, and it would probably eventually become necessary to remove the kidney.

These enlarged ureters, Dr. Wiener said, were especially prone to occur after the removal of a tuberculous kidney. In such cases he had seen enormous exudates through the entire extent of the ureter.

Dr. EDWIN BEER asked the chairman whether there were evidences of retention above the ureteral stricture at the time the catheter was introduced. The speaker referred to the value of the indigo-carmin test in determining the patency of a ureter, and he recalled two cases where the diagnosis of the degree of patency was established by that method. In one of these cases the ureter was closed to the smallest catheter, but the indigo-carmin test proved that it was not completely strictured, a minute stream appearing from the affected ureter. In these cases the indigo-carmin was injected hypodermically. The speaker also referred to the difficulty of distinguishing between an apparent stricture of the ureter and a real obstruction. The catheter might be obstructed in its passage in the ureter without

there being a change in the size of the lumen of the ureter. The use of indigo-carmin would demonstrate, provided the kidney was able to excrete this coloring matter, whether such obstruction was due to a complete stenosis of the ureter or not. Thus this valuable test was calculated to clear up many faulty deductions which were based on ureteral exploration with the catheter.

Syphilitic Testicle with Secondary Hydrocele.—Dr. JOSEPH WIENER presented a specimen obtained from a man, thirty-six years old. He had been married eight years and was the father of two healthy children. His wife had never aborted, and was in good health. He gave a history of having been infected with syphilis in South Africa fifteen years ago, for which he was under careful treatment for three years, receiving inunctions of mercury and subsequently taking potassium iodide. He had a slight secondary eruption, but there were no tertiary lesions. He was a very intelligent man and gave a perfectly straightforward history of his specific trouble. Ten months before he came under Dr. Wiener's care, the left side of the scrotum began to enlarge and attained a considerable size. Examination showed a left hydrocele, together with an enlarged, hard, nodular testis. There were also several hard, nodular areas in the opposite testis and epididymis. Dr. Wiener regarded the case as one of syphilitic testis with secondary hydrocele, and he removed the testis together with the tunica. The wound healed kindly and the patient left the hospital on the eighth day. A microscopical examination of the specimen, made by Dr. F. S. Mandlebaum, showed the presence of a necrotic gumma.

Dr. KEYES said he could recall one case of syphilitic orchitis with a testis two or three times as large as the specimen shown by Dr. Wiener, with considerable hydrocele, where a remarkably rapid improvement followed hypodermic injections of salicylate of mercury. He had also seen a number of other cases, less advanced, in which the enlargement of the testis, together with the accompanying hydrocele, disappeared under specific treatment. In fact, he could not recall a single case that did not end in recovery without operation. He had seen instances where the condition failed to improve under the use of potassium iodide, but where rapid improvement followed the use of the insoluble salts of mercury.

Dr. BARRINGER said that within the past six months they had had two cases of syphilitic testicle at the Cornell Dispensary. In one of them the broken down gumma formed a gangrenous area perhaps two inches in diameter. In spite of this, the case cleared up within from six to eight weeks under potassium iodide and injections of salicylate of mercury. The other one also healed readily under similar antisyphilitic treatment. In some of these cases large doses of mercury were necessary to get the desired effect.

Dr. W. S. SCHLEY said that during the past summer, at St. Luke's Hospital, he had a case very similar to the one reported by Dr. Wiener. There was orchitis with hydrocele of about six months' standing. The patient had seen several surgeons in Europe, and they had pronounced the testis either tuberculous or syphilitic, and had advised its removal. He had been treated with mercury and potassium iodide without any benefit. He was a married man, forty-two years old, the father of two healthy children, and he absolutely denied any history of syphilis. The testis was removed, together with the tunica intact, under cocaine, and there was found a gumma that was on the point of breaking down.

Dr. WIENER said that, while most of these cases could be cured by vigorous antisyphilitic treatment, he

had met with some instances of mixed infection where castration became imperative. In the case he had reported, the patient was about to take a journey, and preferred an operation to prolonged treatment the outcome of which was doubtful.

Spontaneous Hæmatocele.—Dr. EDWARD L. KEYES, JR., showed this specimen, which he had removed from a patient at the Polyclinic Hospital on August 20, 1906. At that time the man stated that his left testicle had been bigger than the right one for twenty years or more, but that it had never pained him. He gave no history of tuberculous or venereal disease. On June 27, 1906, he left his position as janitor, and became a peddler. In this occupation he had to walk many miles a day with a pack on his back. Within two weeks the left testis became much enlarged and so painful (the pain radiating down the left leg) that he had to quit work. He then rested for two months, but this gave him no relief. During this time he lost eleven pounds, and his weight, when he came under Dr. Keyes's observation, was 109 pounds. He had a mass in the left side of the scrotum, which measured 33 by 36 cm. in circumference. The right epididymis was full of hard, insensitive nodules, some of them as large as a pea. To the feel, they suggested benign neoplasms or cysts. The prostate was a little harder on the left side than on the right, but was practically normal. The urine showed a considerable number of casts, a marked trace of albumin, and 1.8 per cent. of urea.

Upon aspiration of the mass, a chocolate colored fluid was withdrawn, apparently from disintegrated blood clot. A week later the mass was removed entirely and proved to be a hæmatocele, apparently of spontaneous origin. The patient made an uneventful recovery. He rapidly gained in weight after the operation and had since returned to his occupation as janitor. The testis was atrophied by pressure and showed no sign of disease.

Carcinoma of the Penis.—Dr. KEYES showed a specimen from a man, fifty-two years old. He was unmarried and stated that he had never had sexual intercourse. He had always suffered from a tight prepuce. Two months before he came under Dr. Keyes's observation, the man first began to suffer from considerable pain in the penis, and there was a slight bloody discharge from the urethra. The pain gradually became more aggravated and there was some difficulty in urination. He consulted a physician, who attempted to pass an instrument into the bladder. This greatly intensified his suffering, and he came to St. Vincent's Hospital for relief. The case proved to be one of epithelioma of the penis and the organ was removed close to the bone. Within three weeks there was a relapse at the stump of the corpora cavernosa, and the patient died three months and three days after the operation. An examination of the specimen showed that the disease had eaten away the glans penis and had invaded the corpora cavernosa, which presented a row of hard nodules. In reply to a question, Dr. Keyes said the glands in the groin were not involved. Subsequently to the recurrence, there was invasion of the glands in the pelvis.

Dr. PEDERSEN said that in the cases of epithelioma of the penis that he had seen the disease progressed slowly, and there was early involvement of the glands. In a case which he showed about four years ago the penis had been ablated by Dr. Robert F. Weir. A serviceable stump was left and, so far as he knew, there had been no recurrence up to the present time. A very extensive operation was done at the time, the glands in the pelvis being removed. In another case, where a fungating, cauliflowerlike mass was removed, there were secondary deposits in both groins and at the site of the penis stump, and the patient died in about four months.

Book Notices.

History of the New Hampshire Surgeons in the War of the Rebellion. By GRANVILLE P. CONN, A. M., M. D. Published by Order of the New Hampshire Association of Military Surgeons, 1906. Pp. vii-558.

Dr. Conn has succeeded admirably in setting forth the names of those medical men of New Hampshire who took part professionally in the civil war, whether in the army or in the navy, together with an outline of their services and a sketch of their family connections. The New Hampshire Association of Military Surgeons is to be commended for having ordered the publication.

Ueber ein zuverlässiges Heilverfahren bei der asiatischen Cholera sowie bei schweren infektiösen Brechdurchfällen und über die Bedeutung des Bolus (Kaolins) bei der Behandlung gewisser Bakterienkrankheiten. Von Dr. JULIUS STUMPF, Kgl. Landgerichtsarzt und a.o. Universitätsprofessor für gerichtliche Medizin in Würzburg. Würzburg: A. Stuber (Curt Kabitsch), 1906. Pp. 62.

The author not only believes that the internal administration of kaolin is an effective remedy for Asiatic cholera, dysentery, and other infections of the intestinal tract, but he also urges his newly found panacea as a surgical dressing for wounds and ulcers. According to Dr. Stumpf, the use of mud, internally and externally, is not a bad treatment for many pathological conditions. He even has a good word for the chthonophagia of many savage tribes, which he does not consider irrational. Truly one must be discriminating in accepting some of the "science" which is made nowadays.

Manual of Clinical Chemistry. By A. E. AUSTIN, A. B., M. D., Professor of Medical Chemistry and Toxicology in the Medical Department of Tufts College, Boston. Boston: D. C. Heath & Co., 1907. Pp. viii-278.

This is one of the most satisfactory of the smaller works on medical chemistry that we have yet seen. Beginning with the elements and their combinations, there is unfolded before the student a series of experiments and explanations which make plain the various combinations in the body effected by chemical change. The explanations are of an extremely practical character, and by studying them the practising physician should be enabled to carry out almost any chemical manipulation that may be necessary in the sick room. Although not intended as a manual for the laboratory, it contains much to make it useful as a work of reference. The chapter on the chemistry of the urine, which occupies considerable space in the book, is well written, and is calculated to be of much service to the practitioner who is obliged occasionally to examine the urine himself. The illustrations in this chapter are unusually good, some showing microscope views in colors on heavy glazed paper. This is a work which we are confident will spring into immediate favor. It is of convenient size, a small octavo, and is printed in very readable type on good paper, well sustaining the reputation of the publishers for good presswork and binding. In a fairly careful study of its contents we have found no errors, either of typography or of statement.

Tumors, Innocent and Malignant. Their Clinical Character and Appropriate Treatment. By J. BLAND-SUTTON, F. R. C. S., Surgeon to and Member of the Cancer Investigation Committee of the Middlesex Hospital, London, etc. Fourth Edition. Chicago: W. T. Keener & Co., 1907. Pp. 675.

In this substantial addition to the literature of tumors

the scholarly author exhibits that large familiarity with comparative pathology which is necessary to the broadest treatment of his subject. Wherever it has been required to elucidate his elaborate study of tumors in man, similar new growths in the lower animals have been freely made use of. This is a novel and valuable feature of the work. Especially noteworthy are the chapters on teratology, the embryological relations of congenital tumors and cysts, and the odontomata, in which last the author has made numerous important original contributions of his own. Among the newer subjects which are adequately treated is chorion epithelioma. There is an illuminating discussion of the ætiology of carcinoma. The author prudently does not fully commit himself to any one of the divergent views on this obscure and baffling subject, but is apparently inclined to favor the parasitic theory. In the comprehensive chapters on uterine fibroids there is a singular omission to mention the extraordinary frequency of fibroids in the negro race, which is such a familiar clinical fact in this country. A full bibliography is appended to each chapter, and there are numerous excellent illustrations.

Gesammelte Beiträge aus dem Gebiete der Physiologie, Pathologie und Therapie der Verdauung. Von Dr. I. Boas und seinen Schülern, 1886-1906. Herausgegeben von Dr. I. Boas, Spezialarzt für Magen- und Darmkrankheiten in Berlin. Zwei Bände. Berlin: S. Karger, 1906.

In these two volumes are collected in permanent form the important contributions of Boas and his pupils, made during the past twenty years, to the physiology, pathology, and treatment of the gastrointestinal tract. It is much of the original work that is here included which has made possible the development of a new medical specialty within comparatively recent years. This comprehensive work, of which we can give here only a very inadequate notice, is a worthy monument of the editor's long continued activity as an investigator, teacher, and clinician, and affords remarkable evidence of what can be accomplished by the untiring zeal and energy of one man with none of the advantages of association with a great university or hospital. For all the painstaking scientific work here recorded has been done in connection with Dr. Boas's private clinic for digestive diseases, the first special clinic of its kind to be established. A wide range of subjects is covered, important among which are the chemistry of digestion, motor disturbances of the stomach, digestive ferments, improved methods in the diagnosis of carcinoma of the stomach and intestines, gastric neuroses, hæmorrhages from the stomach and bowels, colitis membranacea, hæmorrhoids, chronic appendicular inflammation, stenosis of the pylorus, gastric ulcer, cholelithiasis, diseases of the pancreas, and diet. There are, in all, 126 valuable papers, many of which are already well and favorably known to the student of diseases of the digestive organs.

Die Therapie der Haut- und Geschlechtskrankheiten für praktische Aerzte. Von Dr. REINHOLD LEDERMANN, Spezialarzt für Hautkrankheiten in Berlin. Dritte durchgesehene und erweiterte Auflage des Therapeutischen Vademekum der Haut- und Geschlechtskrankheiten. Berlin: Oscar Coblentz, 1907. Pp. 318.

This little volume will be found useful by general practitioners and specialists. It epitomizes the modern therapeutics of skin and venereal diseases. After a brief introductory chapter—too brief, perhaps—dealing with physical and mechanical methods, such as massage, electricity, light, radium, the x rays, etc., the internal treatment of skin diseases is considered. Then

comes the external treatment, which is given at considerable length with many formulæ, including a wonderful array of new drugs, synthetics, etc. The dermatologist has had during the past ten years a veritable glut in this respect, and Ledermann's book, which is practically a dermatological pharmacopœia and formula, very strikingly illustrates this.

In the second part of the book the principal skin diseases are taken in alphabetical order, and the treatment of each is outlined, while a third part deals with chancroid, syphilis, and gonorrhœa. In these clinical portions the ultra modern views on treatment are expounded briefly but adequately, and the possessor of the book will find much practical and valuable reference material in it. He should be careful, however, how he prescribes new and comparatively untried remedies, one of the important objections to which in this country is their cost. A remedy, for example, used instead of potassium iodide in syphilis costs \$1.25 an ounce, and it is so heavy that an ounce measures only 20 cubic centimetres. For ordinary patients this price would be quite out of reach, considering the fact that an ounce would not last long when the remedy was properly administered.

BOOKS, PAMPHLETS, ETC., RECEIVED.

Makers of Modern Medicine. By James J. Walsh, M. D., Ph. D., LL. D., Acting Dean and Professor of the History of Medicine and of Nervous Diseases, Fordham University Medical School, etc. New York: Fordham University Press, 1907.

Anatomical Terminology, with Special Reference to the B. N. A. By Lewellys F. Barker, M. D., Professor of Medicine, Johns Hopkins University, etc. With Vocabularies in Latin and English and Illustrations. Philadelphia: P. Blakiston's Son & Co., 1907. Pp. 103. (Price, \$1.)

Medical Diagnosis. A Manual of Clinical Methods for Practitioners and Students. Fifth Edition. Greatly Enlarged and Revised to Date. By J. J. Graham Brown, M. D., F. R. C. P. E., F. R. S. E., and W. T. Ritchie, M. D., F. R. C. P. E., F. R. S. E. New York: Imperial Publishing Company, 1907.

Das Wesen der bösartigen Geschwülste. Eine biologische Studie. Von Dr. Emil Frh. v. Dungern, a. o. Professor a. d. Universität, und Dr. Richard Werner, Privatdozent a. d. Universität. Leipzig: Akademische Verlagsgesellschaft m. b. H., 1907.

Veröffentlicheungen aus dem Gebiete des Militär-Sanitätswesens. Herausgegeben von der Medizinal-Abteilung des königlich preussischen Kriegsministeriums. Heft 36. Beiträge zur Kenntnis der Verbreitung der venerischen Krankheiten in dem europäischen Heeren, sowie in der militärpflichtigen Jugend Deutschlands. Berlin: August Hirschwald, 1907.

The Chemical Investigation of Gastric and Intestinal Diseases by the Aid of Test Meals. By Vaughan Harley, M. D., Edin., M. R. C. P., F. C. S., Professor of Pathological Chemistry, University College, London, and Francis W. Goodbody, M. D., Dublin, M. R. C. P., Assistant Professor of Pathological Chemistry, University College, London. London: Edward Arnold, 1906. (From Longmans, Green, & Co., New York).

Race Culture; or, Race Suicide? (A Plea for the Unborn). By Robert Reid Rentoul, Doctor of Medicine; Member of the Royal College of Surgeons (Eng.), etc. London: The Walter Scott Publishing Company, Ltd., 1906.

Burdett's Hospitals and Charities, 1907. The Year Book of Philanthropy and Hospital Annual. By Sir Henry Burdett, K. C. B. London: The Scientific Press, Limited, 1907.

Transactions of the American Gynecological Society Volume xxxi, for the year 1906.

Catholic Churchmen in Science. Sketches of the Lives of Catholic Ecclesiastics who were among the Great Founders in Science. By James J. Walsh, M. D., Ph. D., LL. D., Professor of Medical History, Fordham University Medical School, etc. Philadelphia: American Ecclesiastical Review, 1906.

Miscellany.

The Pathology and Treatment of Nephritis.—Webster discusses the modern conceptions of nephritis, the influence of cardiovascular changes, albuminuria and cylindruria, retention of chlorides, œdema, and uræmia, and then takes up the question of treatment, bidding his readers to individualize each case. Special emphasis is laid upon the question of diet. Too much fluid, milk, or any other fluid must be avoided. A starvation diet during a few days in acute nephritis will usually give the best results. In the later days of this disease the food may be increased, excess of proteid being avoided. In chronic nephritis the object is to maintain the body activity at as high a plane as is consistent with the condition of the kidney. A liberal proteid diet is allowable with fresh fruits and vegetables. The author disagrees with those who would exclude salt from the diet. The importance of carefully watching the function of the digestive tract and the liver is emphasized. Hydrotherapy and exercise in moderation are the keynotes to the hygienic and physical treatment of this condition. As to the symptomatic treatment the following are indications: 1. Maintenance of cardiovascular equilibrium. 2. Regulation of the œdema. 3. Regulation of the bowels and liver. If headache, dizziness, nausea, and vomiting warn of the approach of uræmia, diaphoretics and purgatives must be given. If the blood pressure is high venesection may be indicated, while in some cases subcutaneous or intravenous saline injections may be made. As to surgical treatment nephrotomy or decapsulation is believed to be rational, and will play an important part in the future.—*American Journal of Medical Sciences*, February, 1907.

Convulsions.—James McIlraith draws the following conclusions from his observations in 250 cases of convulsions in childhood: Convulsions are most frequent during the first year of life, and not very frequent after the third years, and the predisposing are more important than the exciting causes. The predisposing causes are an inherited neurotic taint and rickets. While healthy children born of healthy parents rarely suffer from convulsions, there is frequently in children suffering from convulsions a history of ill health or disease in the parents, especially in the mother during pregnancy, and this acts by lowering the vitality of the child and rendering it more liable to disease. The family history of children suffering from convulsions is bad. Frequently the brothers and sisters suffer, and the mortality in these families is high, but only a small proportion of cases can be ascribed to organic disease of the brain, while only a small proportion of cases of convulsions can be ascribed to injury at birth. The most common cause of convulsions in the first two months of life is reflex irritation from the alimentary tract. Dentition is rarely a cause of convulsions, and only when some predisposing cause exists, but gastrointestinal disorders are the chief exciting causes of convulsions. Convulsions are by no means as frequent as generally supposed at the onset of acute fevers, such as measles and pneumonia. They are more common at the onset of pneumonia than at the onset of measles. When they do occur there is usually some predisposing cause present. In whooping cough, when no predisposing cause exists and no complications occur, they are not frequent. Convulsions in early life may be the first sign of epilepsy, or may give rise to that condition in later life, and are more likely to become epileptic when there is no obvious cause for the attack.—*The Medical Chronicle*, January, 1907.

Destructive Floods in the United States During 1905.—The destructive floods that occurred in the United States during 1905 are described by Mr. Edward

Charles Murphy and other hydrographers of the United States Geological Survey in a recent publication of that bureau, which is listed as Water Supply and Irrigation Paper No. 162. The very destructive floods of that year were few. The most remarkable flood or series of floods were those in the Gila River Basin, in Arizona. From January 15th to April 30th a series of seven floods occurred—almost a continuous flood—remarkable for the total volume of flow. In November there was another flood in this basin, which was notable for its magnitude, being the largest on record on Salt River. The other large floods of the year occurred on comparatively small streams. Few lives were lost, and the damage was small, compared with that of some previous years. Among the smallest floods described in this paper are those on Poquonnock River, Connecticut, on Six-mile Creek and Cayuga Inlet, New York, on the Unadilla and Chenango Rivers, New York, on the Allegheny River, Pennsylvania-New York, on Devil's Creek, Iowa, on Purgatory River, Colorado, on Pecos River, New Mexico-Texas, on Hondo River, New Mexico, on Rio Grande, New Mexico-Texas, in the Colorado River Basin and in the Gila Basin. A discussion of the flood discharge and the frequency of floods in the United States, together with an index to the literature of American floods, adds to the value of this paper. Maps and views to the number of fifteen are included. Besides Mr. Murphy, the chief contributors to the paper are Mr. T. W. Norcross, Mr. R. E. Horton, Mr. C. C. Covert, and Mr. F. W. Hanna. It is published for free distribution, and application for it should be made to the Director of the United States Geological Survey, Washington, D. C.—*Journal of the Franklin Institute*, January, 1907.

The Results of a Chemical, Microscopical, and Bacteriological Examination of Samples of London Milks.—Professor R. Tanner Hewlett and George S. Barton state that in view of the importance of a pure milk supply they considered that it might be of interest to examine chemically, microscopically, and bacteriologically a number of specimens of milk coming into the metropolis, for which purpose they decided to select samples from the various counties the milk of which is consigned to London. They found that milk so consigned comes from about twenty-six counties extending from Derby in the North, to Hampshire and Devonshire in the South and Southwest, and from Hereford in the West, to Norfolk in the East. The samples were collected on arrival in the early morning at the various railway termini, viz., Euston, St. Pancras, Liverpool Street, Waterloo, Marylebone, etc., by the inspectors and samplers of several well known dairy companies. Two sterilized eight ounce bottles with new, good sound corks, were used for each specimen, the contents of one bottle being used for the chemical and those of the other for the bacteriological examination, thus obviating any possibility of contamination. The milk contained in a churn was thoroughly roused with a clean plunger; the bottles were immersed, re-corked, labelled, and marked with the time of collection, date, the particular county in which it had been produced and the company's name. They were then transmitted without delay to the laboratory, and the examination at once commenced. The chemical examination consisted in determining the specific gravity, the percentage of fat, the nonfatty solids and the total solids, the acidity, and a search for preservatives, viz., formalin, boric acid, and borates. Microscopically, acid fast organisms, streptococci, pus cells, and debris were looked for. Culturally; a search was made for the *Bacillus enteritidis sporogenes* (with subsequent inoculation of typical cultures into guinea pigs), for the *Bacillus coli* in definite quantities of the sample, and for the *Bacillus diphtheriae* and diphtheroid organisms in the sediment which was finally inoculated into guinea

pigs to test for tubercle and other pathogenic organisms. As regards the general results of the examination it may be said: 1. There is no correlation between poor milk and its content of total bacteria, *B. coli* or *B. enteritidis sporogenes*. 2. There is no correlation between the content of *B. coli* and of *B. enteritidis sporogenes*. 3. The total number of organisms was below 2,000,000 per c.c. in 22 out of the 26 samples (85 per cent.) and below 1,000,000 in 16 of the samples (61.5 per cent.). 4. *B. coli* was found in 46 per cent. of the samples, in a quantity of milk not exceeding 1 c.c. 5. *B. enteritidis sporogenes* was found in 60 per cent. in a quantity of milk not exceeding 20 c.c. 6. Preservatives in the form of formalin, or boric acid, or borates, were not detected in any sample. 7. The acidity on the whole is well below Newman's standard. 8. As regards tuberculosis, only one sample out of the 26 (about 4 per cent.) gave definite evidence of tubercle bacilli. The inoculated guinea pig died with typical tubercle, and acid fast bacilli were found in the milk, which contained an excess of streptococci and leucocytes and pus cells. The cow was subsequently identified on the farm, and the further use of its milk stopped.—*The Journal of Hygiene*, January, 1907.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending March 15, 1907:

Smallpox—United States.

Places	Date	Cases	Deaths
Florida—Anthony	Feb. 18-24	1	
Florida—Jacksonville	Feb. 24-March 2	1	
Florida—Tampa	March 2-9	1	
Georgia—Augusta	March 5-12	1	
Illinois—Belleville	Feb. 22-March 1	1	
Illinois—Chicago	March 2-9	1	
Illinois—Galesburg	Feb. 23-March 9	1	
Illinois—Springfield	Feb. 21-28	1	
Indiana—Elkhart	March 2-9	1	
Indiana—Lafayette	Feb. 25-March 11	3	
Indiana—Michigan City	Feb. 1-28	1	
Indiana—South Bend	Feb. 23-March 9	1	
Iowa—Burlington	Feb. 1-28	1	
Kansas—Kansas City	March 2-9	1	Imported
Louisiana—New Orleans	Feb. 23-March 9	40	1
Massachusetts—Chelsea	March 2-9	1	Imported
Michigan—Kalamazoo	Feb. 23-March 9	3	
Mississippi—Natchez	March 2-9	2	
Missouri—Jefferson City	Jan. 20-March 4	46	
Missouri—St. Joseph	Feb. 23-March 2	20	
Missouri—St. Louis	Feb. 23-March 9	4	
New York—New York	Feb. 23-March 2	4	
North Carolina—Charlotte	Feb. 23-March 2	1	
Ohio—Columbus	Feb. 1-28	1	
South Dakota—Sioux Falls	Feb. 23-March 9	5	
Texas—Galveston	March 1-8	1	
Texas—Hunt County	Jan. 1-March 8	25	
Washington—Seattle	Feb. 23-March 2	18	
Wisconsin—La Crosse	Feb. 23-March 2	1	
Wisconsin—Milwaukee	Feb. 23-March 2	8	

Smallpox—Insular

Philippine Islands—Manila	Jan. 12-19	4	mild
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Smallpox—Foreign

Algeria—Algiers	Feb. 16-23	2	
Belgium—Brussels	Feb. 9-16	2	
Ecuador—Guayaquil	Feb. 9-16	3	
Egypt—Cairo	Jan. 14-28	3	1
France—Paris	Feb. 9-16	12	
Great Britain—Bristol	Feb. 9-16-23	1	1
Great Britain—Cardiff	Feb. 16-23	1	
Great Britain—Dundee	Feb. 16-23	1	
Great Britain—Glasgow	Feb. 22-March 1	1	
Great Britain—Manchester	Feb. 16-23	1	
India—Bombay	Jan. 29-Feb. 12	3	
India—Calcutta	Jan. 19-26	25	
India—Madras	Feb. 2-9	1	
Mexico—Aguas Calientes	Feb. 16-March 2	8	
Mexico—Monterrey	Feb. 17-24	12	
Mexico—Nogales	Feb. 23-March 2	1	
Mexico—Veracruz	Feb. 9-23	3	
Russia—Moscow	Feb. 2-9	4	
Russia—Odessa	Feb. 9-16	17	

Russia—St. Petersburg	Feb. 29	2	
Spain—Madrid	Jan. 1-31		1
<i>Yellow Fever—Foreign.</i>			
Brazil—Rio de Janeiro	Jan. 27-Feb. 3	1	1
Ecuador—Guayaquil	Feb. 9-16		10
<i>Cholera—Insular.</i>			
Philippine Islands—Provinces			
Capiz and Negros Occidental	Jan. 12-19		present
<i>Cholera—Foreign.</i>			
India—Bombay	Jan. 29-Feb. 5		1
India—Calcutta	Jan. 19-26		361
India—Madras	Jan. 26-Feb. 8		4
India—Rangoon	Jan. 19-Feb. 2		17
<i>Poison—Foreign.</i>			
Australia—Sydney	Jan. 5-12	1	
Brazil—Rio de Janeiro	Jan. 20-Feb. 3	34	14
China—Amoy	Feb. 2-9	12	4
China—Hong Kong	Jan. 19-26	1	1
India—Bombay	Jan. 29-Feb. 12	166	
India—Calcutta	Jan. 19-26	24	
India—Rangoon	Jan. 19-Feb. 2	80	
Peru—Catacaos	Jan. 27	4	3
Peru—Chilclayo	Jan. 27	14	11
Peru—Lima	Jan. 27	6	3
Peru—Malabrigo	Jan. 27	20	
Peru—Pacasmayo and San			
Pedro	Jan. 27	12	4
Peru—Trujillo	Jan. 27	11	9
Peru—Vitu	Jan. 27		9

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the United States Public Health and Marine Hospital Service, for the seven days ending March 13, 1907:

- AMESSE, J. W., Passed Assistant Surgeon. Granted leave of absence for fourteen days, from May 4, 1907.
- ASHFORD, F. A., Assistant Surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to San Juan, P. R., reporting to the commanding officer of the revenue cutter *Algonquin*, for duty and assignment to quarters.
- BOGGESE, J. S., Passed Assistant Surgeon. Granted leave of absence for seven days, from March 17, 1907.
- CARLTON, C. G., Pharmacist. Reassigned to duty at Cairo, Illinois, effective October 4, 1906.
- GLOVER, M. W., Passed Assistant Surgeon. Granted leave of absence for six days, from February 23, 1907.
- GOLDSBOROUGH, B. W., Acting Assistant Surgeon. Granted extension of leave of absence for two days, from March 1, 1907.
- HALL, L. P., Pharmacist. Granted leave of absence for two days, from March 9, 1907.
- KALLOCH, P. C., Surgeon. Granted leave of absence for two days.
- LAGRANGE, J. V., Pharmacist. Reassigned to duty at Boston, Mass., effective October 4, 1906.
- MACDOWELL, WILLIAM F., Pharmacist. Reassigned to duty at Ellis Island, N. Y., effective October 4, 1906.
- NUTE, A. J., Acting Assistant Surgeon. Granted leave of absence for two days, on account of sickness, from March 3, 1907.
- ROEHRIG, A. M., Pharmacist. Reassigned to duty at Stapleton, N. Y., effective November 7, 1907.
- RYDER, L. W., Pharmacist. Reassigned to duty at the port of Washington.
- WILLIAMS, ARZA G., Pharmacist. Directed to proceed to New Orleans, La., reporting to the Medical Officer in Command for duty and assignment to quarters.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending March 16, 1907:

- CRAMPTON, LOUIS W., Lieutenant Colonel and Deputy Surgeon General. Leave of absence extended seven days.
- DAVIS, WILLIAM B., Lieutenant Colonel and Deputy Surgeon General. Relieved from station at Governor's Island, New York, N. Y., and ordered to take station in New York city, in connection with his duties as chief surgeon, Department of the East.
- EDGER, BENJAMIN J., JR., Captain and Assistant Surgeon. Ordered to proceed from Fort Reno, Okla., to Wash-

ington, D. C., on March 11th, as a witness for the Senate Committee on Military Affairs, in the investigation of the Brownsville affair.

KIERSTAD, H. S., Captain and Assistant Surgeon. Granted leave of absence for three months and fifteen days, to take effect upon the date of his arrival in the United States from Alaska.

WOODRUFF, CHARLES E., Major and Surgeon. Appointed chief surgeon and chief sanitary officer of the camp of United States troops and militia to be established at the Jamestown Ter-Centennial Exposition, and ordered to proceed to Norfolk, Va., and there take station, establishing an office at the Exposition grounds in connection with his said duties.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending March 16, 1907:

- HAYDEN, R., Assistant Surgeon. Ordered to the Naval Medical School Hospital, Washington, D. C.
- SMITH, F. W., Assistant Surgeon. Ordered to the Naval Hospital, New York, N. Y.
- URIE, J. F., Surgeon. Ordered to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.
- VALZ, E. V., Assistant Surgeon. Ordered to the Naval Medical School Hospital, Washington, D. C.

Births, Marriages, and Deaths.

Married.

ESTES—STOGSTILL.—In Golden, Colorado, on Wednesday, March 6th, Dr. Frank E. Estes, of Denver.

KINNE—MESSINGER.—In Williamsport, Pennsylvania, on Tuesday, February 26th, Dr. Howard S. Kinne and Miss Rachael Teas Messinger.

WIGGIN—ORR.—In Litchfield, Connecticut, on Wednesday, March 13th, Dr. Frederick Holme Wiggin and Miss Christiana Ferguson Orr.

Died.

ANDERSON.—In Easton, Maryland, on Monday, March 11th, Dr. James H. Anderson, aged eighty years.

CHURCH.—In Brooklyn, N. Y., on Sunday, March 10th, Dr. George Taylor Church, aged forty-nine years.

COFFROTH.—In Baltimore, on Thursday, March 7th, Dr. Hamilton Janney Coffroth.

CRAIN.—In Richfield Springs, N. Y., on Saturday, March 9th, Dr. William Baker Crain, aged seventy years.

HIXON.—In Kansas City, Missouri, on Wednesday, March 6th, Dr. Columbus Hixon, aged eighty years.

KEEGAN.—In Millersburg, Indiana, on Thursday, March 7th, Dr. Charles J. Keegan, aged seventy-five years.

KELLEY.—In Denver, Colorado, on Saturday, March 9th, Dr. D. C. Kelley, aged seventy-three years.

LAME.—In New York, on Thursday, March 14th, Dr. William Lame, aged seventy-three years.

MARGUERAT.—In Chicago, on Thursday, March 7th, Dr. Eugene Marguerat, aged seventy-three years.

MCDONALD.—In Waterbury, Connecticut, on Wednesday, March 13th, Dr. Edward W. McDonald.

McKINNIE.—In Riverside, California, on Thursday, February 28th, Dr. Patterson L. McKinnie, of Evanston, Illinois, aged sixty-two years.

MULLINIX.—In Urbana, Maryland, on Tuesday, March 5th, Dr. Elisha E. Mullinix, aged fifty-six years.

NORTH.—In Clifton Springs, N. Y., on Tuesday, March 12th, Dr. James Harper North, aged eighty-three years.

PERRY.—In Hyattsville, Maryland, on Friday, March 8th, Dr. Van Lear Perry, aged forty years.

RAY.—In Denver, Colorado, on Tuesday, March 5th, Dr. Joseph C. B. Ray, aged fifty-one years.

ROBB.—In St. Louis, Missouri, on Tuesday, March 5th, Dr. William H. Robb, aged sixty-six years.

SHENK.—In Lancaster, Pennsylvania, on Sunday, March 10th, Dr. D. H. Shenk, aged fifty-five years.

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HODGKIN'S DISEASE A TYPE OF SARCOMA.*

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That both pathologists and clinicians at the present time are widely at variance as to what constitutes Hodgkin's disease is a proposition that, I believe, will be readily admitted at the outset.

Martin, Professor of Medicine, McGill University, writing upon this subject (2) uses the designation "lymphosarcomatosis," thus showing that he inclines to the malignant theory of the disease. In his conclusions he states that the term "Hodgkin's disease" is a purely clinical one and is associated with very different pathological conditions, the two main varieties being the granulomatous and lymphomatous. Two years later Simmons (3) in a paper upon Hodgkin's Disease, giving a pathological analysis of nine cases made at the laboratory of the Massachusetts General Hospital and the Harvard Medical School, concludes that Hodgkin's disease should be regarded as an entity, presenting a definite histological picture. In one of the most recent papers on the subject, giving the results of the x ray treatment in Hodgkin's disease at Bruns clinic, Tübingen, the condition is described as "malignant lymphoma."

The pathologist's view of Hodgkin's disease has been perhaps best described in the now classical paper of Dorothy Reed, on *The Pathological Change of Hodgkin's Disease with Special Reference to its Relation to Tuberculosis*. (1) Although the paper contains a very careful review of the literature of the subject, its chief value lies in the fact that it represents the most careful and painstaking study of eight cases of Hodgkin's disease observed at the Johns Hopkins Hospital that has yet been written. The main points of pathological significance are described as enlargement of lymph glands, absence of infiltration of the capsule, grayish surface, broken by intersecting yellowish lines; metastases in the viscera presenting a similar appearance, though of irregular outline and apparently invading the organ in different directions. On section they present the same appearance as described in the glands. On microscopical examination there is found dilatation of the bloodvessels and lymph sinuses, marked increase in lymphocytes and proliferating endothelial

cells, numerous giant cells with one or more nuclei and prominent nucleoli appear in a great number; occasionally a very large giant cell with many small nuclei peripherally arranged is seen. An increased number of eosinophiles is generally observed. Reed states that the capsules of the glands usually show no change except possibly some thickening. This, however, is not borne out by other writers, especially by Gibbons in his recent work (4). Careful autopsy studies were made in five of his cases, while in Johns Hopkins Hospital the material was limited to three autopsies only.

The large giant cells are the most striking feature of the sections from Hodgkin's disease tumors. Reed states that they occur in great numbers in the large lymph sinuses of the glands, and occasionally are seen in the bloodvessels. They vary remarkably in size, from two to three times the size of a red blood corpuscle to twenty times its size. Sometimes as many as eight to ten nuclei are seen in a single cell. Large numbers of eosinophiles were observed in all but two of Reed's cases.

The clinical picture of Hodgkin's disease is as follows: It almost always begins in the glands of the neck, may occur at almost any period of life, but is more commonly seen at an early age, and is more frequent in the male than in the female sex. A tuberculous family history is rarely found. The glands begin to enlarge on one side first; very quickly enlargement is noticed on the other side also; a little later the axillary glands are affected and finally the inguinal glands also. These enlarged glands differ clinically from both ordinary sarcoma of the lymphatic glands and tuberculous adenitis. On palpation they show much greater mobility than is seen in sarcoma or tuberculous glands, giving the sense of a discrete, independent nodule. The skin is not affected; the glands move freely upon the deeper parts. There is entire absence of the "fusing together" in these independent masses, so commonly found in tuberculous adenitis. Neither is there any tendency to breaking down or caseation. Later on anæmia develops without any particular increase in leucocytes. The spleen is often markedly enlarged, and in the later stages, also the liver, and marked cachexia appears. In some cases the spleen extends nearly down to the brim of the pelvis (see illustration).

Although during the last twenty years numerous writers have attempted to maintain the tuberculous origin of Hodgkin's disease, the most elaborate paper holding this view, being that of Sternberg (5), this theory has been so thoroughly controverted by more recent writers, particularly by Reed, that

*Read at the Annual Meeting of the New York Academy of Medicine, Dec. 12, 1906.

it can claim no further consideration. Reed admits only two ætiological possibilities, one, that Hodgkin's disease is a malignant growth; the other, that it is an infectious process.³ She believes that clinical and histological evidence is in favor of the theory of its infectious rather than malignant origin. As in favor of the infectious theory she cites the following facts: First, that fever is frequently associated with Hodgkin's disease. My observation has



CASE I

been that it is also not infrequently found in malignant disease, particularly sarcoma in which generalization has taken place. Second, that the frequency with which the disease starts in the cervical region suggests the possibility of infection gaining entrance through the mucous membrane of the mouth. The same reasoning would apply to cases of sarcoma of the neck, which comprise such a large portion of the total number of sarcomas. My own statistics show 74 cases of sarcoma of the neck in a total of 615 cases. Then again, Reed states the growths differ from malignant tumors by the ab-

sence of capsular infiltration and implication of adjacent tissues, and states that sarcoma does not confine its growth to gradual extension from gland to gland. Exception must here be taken to the premises, inasmuch as Gibbons's cases have shown that capsular infiltration does take place and infiltration of neighboring tissues, even of bone tissue, may occur in Hodgkin's disease.

Still another objection to the malignant theory, and the one most frequently advanced, is that metastases occur only in preexisting lymphoid tissue. This would, indeed, be very strong evidence against the malignant theory, if it were true, but the cases of Gibbons together with the observations of Banti (6) the distinguished Florentine pathologist furnish conclusive proof that metastases in Hodgkin's disease may occur in locations where there is absolutely no lymphoid tissue present. The five cases in which Gibbons was able to carefully study the autopsy findings, all showed lymph gland involvement over the entire body, with metastases in the liver in four, in the spleen in four, in the kidney in two, in the lungs, pericardium, pancreas in one each. In two there was a large, adherent tumor mass of the neck which involved the surrounding structures, fascia, and muscles and in one part of the cervical vertebra and wall of the jugular vein was invaded.

Now, we may have a tumor starting in the glands of the neck, resembling the clinical picture of Hodgkin's disease which, later, invades the axillary glands, glands in the groin or retroperitoneal glands, finally causing death, and yet, repeated examinations by the most skilled pathologists will report the tumors round-celled sarcoma (see Cases II and III).

Again, we may have tumors originating in the inguinal glands, or cervical, later involving the abdominal glands, which, clinically, have the appearance of typical cases of sarcoma, and pathologists who examine the specimens may pronounce it Hodgkin's disease, as is well illustrated by the following case:

CASE I.—Sarcoma of the Inguinal Glands, Simulating Hodgkin's Disease.—H. M., thirty-seven years, was admitted to the General Memorial Hospital on August 24, 1906. The patient was referred to me by Dr. A. G. Gerster as a case of inoperable sarcoma. Family history negative. The patient stated that he had always been in good health. Three years ago, he first noticed a small swelling in the right groin. This grew slowly until it reached the size of a walnut, was never painful; general health remaining perfect. Five months prior to his admission the lumps in the groin began to increase in number and to grow rapidly in size. They finally interfered with his walking.

Physical examination at the time of his entrance to the hospital showed heart and lungs normal. His right inguinal region is occupied by a number of independent tumors, more or less closely fused and extended deeply into the iliac fossa. The skin over the growths was freely movable. The right thigh and leg were considerably swollen. Inasmuch as the tumor mass seemed so unusually movable, it was deemed wise to attempt removal. This was done by my associate, Dr. Downes, on September 4, 1906. An incision, nine inches long, was made from the anterior superior sp., passing over the middle of Poupart's ligament and down along the course of the femoral vessels, and a very large number of nodules, varying in size from a marble to a lemon, all more or less completely sur-

rounded by a capsule, were removed. The peritonæum was opened accidentally in one place and closed with catgut sutures. The wound healed satisfactorily, without suppuration. Microscopical examination of the growth, made by Dr. Clark, assistant pathologist of the hospital, and confirmed by Dr. Wood of the College of Physicians and Surgeons Laboratory pronounced it Hodgkin's disease. Portions of the tumor were also

Red blood cells	Hæmoglobin	White blood cells	Polymorphous	Lymphocytes
4,200,000	80	41,000	6	64
4,000,000	77	34,800	64	54
3,800,000	77	28,000	7	44
3,600,000	70	56,000	60	40
3,400,000	6	56,000	6	

The latest blood examination in this case, made March 6, 1907, shows a remarkable change:

Total blood	100.00
Polymorphous	68
Lymphocytes	32

The patient has failed very markedly, and the lower extremities are very cedematous.

The principal reason for reporting this case is, that it emphasizes more clearly than any case I have seen the striking similarity between Hodgkin's disease and sarcoma. This case, together with a number of others, somewhat similar, which have come under my observation, have strengthened the opinion I have long held, that Hodgkin's disease is really a variety of sarcoma, rather than an independent disease.

CASE II.—Extensive Recurrent Round-Cellled Sarcoma of the Cervical Region—the Later History Almost Identical with that of a Case of Hodgkin's Disease.—Miss M. A., forty-five years, first noticed a tumor just above the clavicle, about two years ago. This was removed. Shortly after this a recurrence was noted in the right cervical region, which grew with great rapidity, very quickly involving the axillary glands on the same side. In July, 1900, the axillary tumor was removed by Dr. C. B. Nancrede, of Ann Arbor, Mich. The tumor in the cervical region showed such extensive involvement of the deeper structures that it was considered entirely inoperable. Microscopical examination was made by Dr. King, of the Dartmouth Medical School, who pronounced it small round-celled sarcoma.

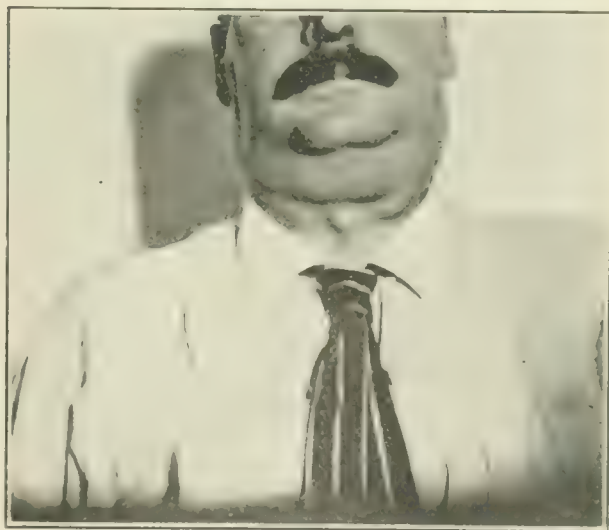


CASE II.

examined at Cornell Laboratory, and the same diagnosis was made. Blood examination on May 7 showed: Red cells, 4,200,000; white cells, 51,000; polymorphous, 35 per cent.; lymphocytes, 65 per cent.; hæmoglobin, 80 per cent.

After the wound was healed, the nucleoproteid serum from a case of Hodgkin's disease, prepared by Dr. S. P. Beebe from the Huntington Laboratory Fund for Cancer Research, was begun. Nine tubes of 15 c.c. each were given without apparent effect. October 16th the serum was given up and the patient was put upon the mixed toxines of erysipelas and bacillus prodigiosus. Up to the present time nineteen injections have been given in doses of 0.5 mm. to 13 mm. On October 16th the right thigh measured 15¼ inches, being two inches larger than the left. Physical examination at the time showed the right inguinal and iliac region occupied by a tumor which apparently infiltrated the adjacent structures, as its limits could not be well defined. In the right hypochondriac region, just to the right of the median line, there was a hard mass evidently attached to the spine and extending from the median line nearly over to the lumbar region and up almost to a level with the right costal arch. No enlargement of the spleen and liver could be detected. During the past month, under the toxine treatment, there has been some improvement in the abdominal condition, the tumor in the iliac fossa is somewhat smaller and the mass in the right hypochondrium is not nearly so pronounced. Measurements of the leg remain the same.

The blood examinations made in this case during November and December, 1906, showed the following:



CASE IV.

The patient was referred to me by Dr. Nancrede for the toxin treatment, in October, 1900. Physical examination at this time showed a large tumor in the right cervical region, extending from the clavicle to the mastoid process of the temporal bone. There were some enlarged nodules below the clavicle, and several small tumors in the region of the cicatrix in the axilla. The toxines were begun at the General Memorial Hospital, October 1, 1900, and continued, with intervals of rest, for six months. There was a very decided decrease in the size of the tumors, and increase in their

...for about three months, and then, in spite of further injections, the improvement ceased. The tumor masses, globular in outline, more or less discrete in character, gradually involved the other side of the neck, as well as both axillæ. The tumors gave the appearance of encapsulation. The photographs will give a good idea of the condition prior to 1902, when the x ray treatment was begun.



FIG. IV.—Showing enlarged spleen, in Hodgkin's disease.

The result of the x ray treatment in this case was the most remarkable I have ever seen. The tumors decreased in size with great rapidity and at the end of four months had almost completely disappeared. A few months later, however, the disease recurred in both groins and in the mesenteric or retroperitoneal glands. The x ray treatment had apparently lost its influence, and towards the end an enormous number of subcutaneous growths appeared simultaneously in all parts of the body; several hundred of them, varying in size from a pea to an English walnut, were present at the time of her death, in June, 1904.

CASE III.—Small Round-Celled Sarcoma of the Neck, Six Times Recurrent.—G. F. H., aged seventy years. About thirteen years ago a lump was first noticed in the left side of the neck. Nine years ago this was removed at the New York Hospital. The tumor recurred one year later in the scar, and grew much larger. The patient had had four subsequent operations within the last seven years. One tumor was removed from the right side of the neck, the others recurring in the region of the cicatrix of the original growth on the left side and behind the ear.

The pathological records of the New York Hospital show the following:

February 21, 1892. G. F. H., aged sixty years, has had a tumor on the left side of the neck, posterior to the scalenus anticus muscle, for three years and four months. Of slow growth at first, the tumor has increased in size rapidly during the last three months. No glands were involved. Operation February 20, 1892. The specimen is an oval tumor, 7 by 4½ inches; no capsule; on surface the voluntary muscle fibres are seen invaded by the tumor tissue at several points. Microscopically the tumor is a typical round-celled sarcoma with small amount of fibrous tissue stroma, apparently derived from tissues in which the growth originated.

On May 13, 1901, the patient was referred to me by

Dr. E. M. Foote, of the Vanderbilt Clinic, as a case of inoperable sarcoma of the neck, for treatment with the erysipelas toxins. Physical examination at the time showed a tumor the size of an orange occupying the left mastoid region. The tumor was very vascular and semifluctuating. There was a glandular involvement behind the jaw on the right side; also a growth the size of a small orange in the right femoral region. There was a hard, freely movable glandular tumor in the right axilla the size of an English walnut. The patient was put upon the erysipelas toxines, but derived little or no benefit from the same. He returned to his home in Brooklyn, and later came under the care of Dr. E. R. Fiske, who started the x ray treatment in December, 1901. The influence of the x ray in this case was very remarkable. Almost immediate improvement followed; the tumors began to soften and gradually disappeared entirely. The patient was shown at the x ray meeting of the Academy of Medicine in March, 1902, in perfect health, without the slightest suspicion of a tumor in the neck. The tumor in the right axilla had also disappeared. The patient soon after developed similar tumors in both groins which nearly disappeared under renewed x ray treatment. The patient remained well until the summer of 1903 when he began to complain of "rheumatism," as his physician wrote me, and died on September 23, 1903, under symptoms of cerebral thrombosis.

There is very little doubt, in this case, that the patient died of general metastases. Here we have a round-celled sarcoma starting in the neck, later involving the axillary glands, still later the inguinal glands, and finally destroying life by internal metastases, almost a typical picture of the course of a case of Hodgkin's disease and yielding to the in-



FIG. IV.—After one month's treatment with x ray and diphtheria toxins.

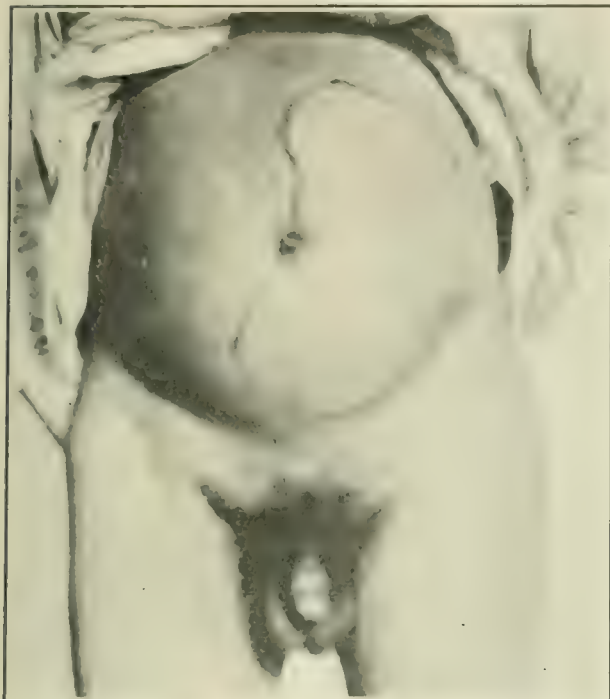
fluence of the x rays precisely as do many cases of Hodgkin's disease.

The following is one of the most typical cases of Hodgkin's disease that has come under my personal observation:

CASE IV.—W. V. B., forty-three years, married twenty-five years. Family history negative. Operation for mastoiditis in 1901; in 1899 he had some trouble with the molar tooth in the left lower jaw. In the spring of 1902 he first noticed a slightly swollen gland in the left submaxillary region, following a severe cold.

This slightly increased in size, almost simultaneously a similar swelling developed on the right side of the neck. Gradually the number of enlarged glands increased on both sides of the neck and submental region. A few weeks after that he noticed enlarged glands also in the axilla and still later in both groins; this was soon followed by enlargement of the abdomen. The patient was referred to me by Dr. Hollister and admitted to the General Memorial Hospital, September 25, 1902. Examination of blood prior to admission showed 65,000 leucocytes and 7,000,000 red blood cells.

Physical examination at the time of admission to the hospital showed the patient somewhat emaciated. There was a large, glandular tumor occupying both cervical and submental regions, extending down to the clavicle. The glands in the axilla were enlarged to the size of



CASE IV.—After two months' treatment.

an English walnut. Both groins were filled with large masses of glands varying in size from a walnut to a hen's egg. On examination of the abdomen, a hard, immovable tumor was found $8\frac{1}{2}$ x 11 inches, of apparently splenic origin, extending from the left side to within 2 inches of the right anterior superior sp. and within 1 inch of the symphysis pubis. The patient was put upon the x ray and toxine treatment. The first two weeks he was given small doses of arsenic, which were later discontinued. The x rays were given four times a week, 10 minutes' exposure in the face and 10 minutes in the abdomen. Blood count was made every week, the principal feature of the counts being that the red cells were nearly normal, very slight leucocytosis, but a marked decrease in polynuclear cells.

Blood count October 4, 1902: Hæmoglobin 60 to 70 per cent.; leucocytes, 11,000; different polynuclear, 7.7 per cent.; lymphocytes, 91 per cent.; (142 counts).

On October 13th: Hæmoglobin, 70 per cent.; different polynuclear, 6 per cent.; lymphocytes, 92.3 per cent.; eosinophiles, 8 per cent.; mast cells, 4 per cent.

On October 22d: Hæmoglobin, 60 to 70 per cent.; leucocytes, 9,000; red, 3,600,000; different polynuclear, 18 per cent.; lymphocytes, 81 per cent. (202 counts).

On October 29th: Lymphocytes, 81 per cent.; poly-

nuclear, 17.4 per cent.; eosinophiles, 4 per cent.; mast cells, 9 per cent.; hæmoglobin, 50 to 60 per cent.; red blood cells, 4,500,000; leucocytes, 6,000.

On January 7, 1903: Red cells, 3,807,000; leucocytes, 2,750; (lymphocytes), mononuclear, 48 per cent.; polynuclear, 52 per cent.; eosinophiles, none seen; hæmoglobin, 62 per cent.

While at first there was marked improvement under the treatment, the disease soon got the ascendancy again, and the patient died in May of 1903.

CASE V.—*Round-Cellled Sarcoma of the Supraclavicular Region*.—A boy, I. L., thirteen years. Family history good. Present history: The boy received an injury above the right clavicle three months before the tumor was noticed. The growth increased rapidly in size. He was operated upon on July 29, 1905, by Dr. Gerster of the Mount Sinai Hospital. The outer third of the clavicle was removed. The tumor was densely adherent to the periosteum, but the bone itself was not involved. On February 3, 1906, the patient was referred to me by Dr. Gerster, with a large, recurrent growth at the site of the original tumor. Physical examination at this time showed several more or less distinct masses in the right supraclavicular space, extending down to the upper pectoral region; axillary glands not involved. The patient was put upon the mixed toxines, the injections being made in the pectoral region three to four times a week. Slow, but steady improvement occurred; there was gradual diminution in size and increased mobility of the tumors. The toxines were kept up in large doses, the injections being made partly in the tumor and partly in the pectoral region during the entire spring and summer, 4 to 5 times a week. In June he was given x ray treatment for three weeks. In the early part of July the tumors had almost entirely disappeared and his general condition was good. He was sent home, but came back in September with a marked return of the trouble; the tumors had again reached almost their original size. He was again put upon the toxines, but with practically no effect in retarding the growth of the disease. The accompanying illustrations show the condition at this time. Loss of weight has been rapid. Blood examination showed:

Leucocytes	19,700
Polymorphonuclear cells	70 per cent.
Large mononuclear	2
Small mononuclear	9
Red cells	6,100,000
Hæmoglobin	50 per cent.

Blood count made November 27, 1906, showed the following:

Red blood cells	4,200,000
Hæmoglobin	80
White blood cells	12,400
Polynuclear	.60 per cent.
Lymphocytes	33
Eosinophiles	7

January 12, 1907:

Red blood cells	4,200,000
Hæmoglobin	.69 per cent.
White blood cells	18,000
Polynuclear	46
Large lymphocytes	7
Small lymphocytes	31
Eosinophiles	16
Blast	5

The last examination, as will be seen, showed an enormous increase in eosinophiles.

During the last two months he has developed similar tumors in the axillary regions and in both groins. As yet no internal metastases can be made out.

I have had under observation five other patients in whom the clinical picture was that of Hodgkin's disease, but no microscopical examination was made of the tumors.

In regard to the value of blood examinations in

To report on the colored blood examinations I am indebted to Dr. J. H. Pratt, I. W. S.

the diagnosis of Hodgkin's disease, opinions vary. Reed and most writers believe that it offers nothing characteristic, although oftentimes there is an increase in the number of eosinophiles. Cabot (4), in a series of thirty-two cases, found distinct lymphocytosis in eleven; Da Costa, in ten cases, found lymphocytosis in three; Longcope found lymphocytosis in only one of eight cases. Stengel of Philadelphia, considers it rare, while Pincus of Berlin, regards it as present in the majority of cases. Several of my cases show it in a marked degree.

I have had blood examinations made in a large number of ordinary types of sarcoma, giving results almost identical with those found in Hodgkin's disease. The majority of cases showed nothing particularly characteristic, with the exception of a moderately increased number of leucocytes. A certain number of cases showed distinct eosinophilia and a marked lymphocytosis.

Let us examine for a moment the chief points



CASE V.

upon which the pathologist bases the diagnosis in Hodgkin's disease: Marked stress is laid upon the encapsulation of the tumors and absence of infiltration; the fact that only preexisting glands or lymphoid tissue, as has been stated, are invaded; peculiar types of giant cells. Yet, all of these characteristics may be found in certain types of sarcoma.

Those who, like myself, hold the opinion that Hodgkin's disease is a variety of sarcoma, are not really so far away from the position held by Reed and others, who assert it to be of infectious origin, for I have long believed that sarcoma is itself due to some form of microorganism which has the nature of an infectious process. A careful clinical study of my own cases of sarcoma of the neck, axilla, and groin, has caused me to believe that the so called Hodgkin's disease is but a variety of sarcoma, often sufficiently distinct to present a fairly characteristic clinical picture, and at other times so closely resembling the more common varieties of sarcoma, both clinically and

microscopically, that it can not be differentiated. Most important of all is the fact that this variety goes on and destroys life in precisely the same way and in about the same length of time, as sarcoma. It forms metastases in the liver, spleen, and other organs, and fully deserves the name of a malignant tumor. Beebe and Ewing's experiments with sarcoma in dogs, at the laboratory of the Huntington Cancer Research Fund, have proved that these tumors, until recently believed to be infectious granulomas, are actually sarcomas. When we have discovered the cause of these tumors, it is possible, as I have stated many years ago, that we may find slightly varying forms of microorganisms of some general type, that give us the varying types of malignant tumors. Or, perhaps, according to the opinion of Ballance, of England, some one organism which under different conditions produces different types of tumors, just as the same insect in vegetable life under different conditions will produce entirely different types of galls upon trees.

The favorable action of the x rays upon Hodgkin's disease might be offered as an objection to regarding such tumors as sarcoma. It is true, that in a very much larger number of cases of Hodgkin's disease, the tumors disappear or show improvement under the x ray treatment, than in the ordinary type of sarcoma, but if the later history of these cases is traced the end results will be found to be practically the same. Pfeiffer (7) has recently reported the cases of Hodgkin's disease treated with the x ray at the Tübingen Clinic, and has likewise collected the end results in all the cases that have thus far been published. They apparently believe in the sarcomatous nature of these tumors at the Tübingen Clinic, inasmuch as these cases are reported under the name of "malignant lymphoma." Pfeiffer collected thirty-three cases in all, including the seven observed at Bruns's Clinic. Of these ten were observed but a short time; fourteen cases from one to nine months; nine cases were observed over nine months. His summary of the thirty-three cases shows that seven patients died, two without any noticeable change in the tumor; in five patients (or 15 per cent.) there was no apparent improvement; twenty-eight patients showed local or general improvement. There were but nine patients in which the period of observation extended over nine months; of these two showed recurrence. Only three of the entire thirty-three patients were known to be alive nine months and over, namely, one nine months, one eleven months and one eighteen months.

One of my own patients of Hodgkin's disease treated with the x ray, quoted by Pfeiffer, while much improved at the end of four months, began to get worse shortly afterward and died, with cachexia and jaundice, within eight months.

The strongest argument in favor of regarding not only Hodgkin's disease, but leucæmia as well, as a form of sarcomatosis, has just been brought out by Banti, *loc cit.* He believes that both the lymphatic and myelogenous types of leucæmia are really malignant neoplasms of the sarcomatous type. He states that on the sarcoma hypothesis all the hitherto unexplainable pathological and clinical facts are readily accounted for, and he concludes: Lymphatic leucæmia is a unique disease; it is always alike in

its nature and is a special form of sarcomatosis. Myelogenous leucæmia, he believes, to be a systemic myeloid sarcomatosis of the hematopoietic and lymphopoietic organs, the so called myelocytes being really neoplastic cells which have entered the circulation.

My own conclusion, based upon a study of upwards of 600 cases of sarcoma, seventy-four originating in the lymph glands of the neck, is that Hodgkin's disease is merely a special variety of sarcoma, maintaining, as a rule, a fairly definite clinical and pathological type, but yet, in many cases, shading off into other types that correspond most closely with the ordinary types of round celled sarcoma. The very evidence brought forward by Reed and others in favor of the infectious origin of Hodgkin's disease need not be disproved. Most of it holds true of sarcoma, and all of it but adds to the slowly accumulating mass of evidence in favor of the microparasitic or infectious nature of sarcoma as well as carcinoma.

The question of retaining the name Hodgkin's disease is not of great importance compared with the recognition of the true pathological condition, just as it matters little whether we call a certain disease of the thyroid gland exophthalmic goitre or Graves's disease. If the malignant nature of the disease becomes generally accepted, as I believe it undoubtedly will, it will be hard to find a better name for the disease than lymphosarcoma, which Billroth applied to it many years ago, prefixing multiple to it; or calling it lymphosarcomatosis to distinguish it from the type of sarcoma confined to a single lymph gland.

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5 PARK AVENUE.

THE CATAPHORIC TABLE; AN ASEPTIC OPERATING ROOM OUTFIT FOR MAJOR CATAPHORIC OPERATIONS. A NEW CONSTANT CURRENT MEDICAL METER.

By G. BETTON MASSEY, M. D.,
Philadelphia,

Attending Surgeon, American Oncological Hospital

One of the difficulties attending the adoption of the cataphoric sterilization method in the destruction of external and semiexter-

nal carcinous growths by surface cauterization is the lack of proper apparatus. The average office equipment of the experienced electrotherapist was inadequate because of the low range and inaccuracy of the meter and the absence of a suitable controller. This deficiency was first met by the author by devising a suitable graphite controller of large size which met perfectly the indications of a cataphoric operation. This controller was first described in the

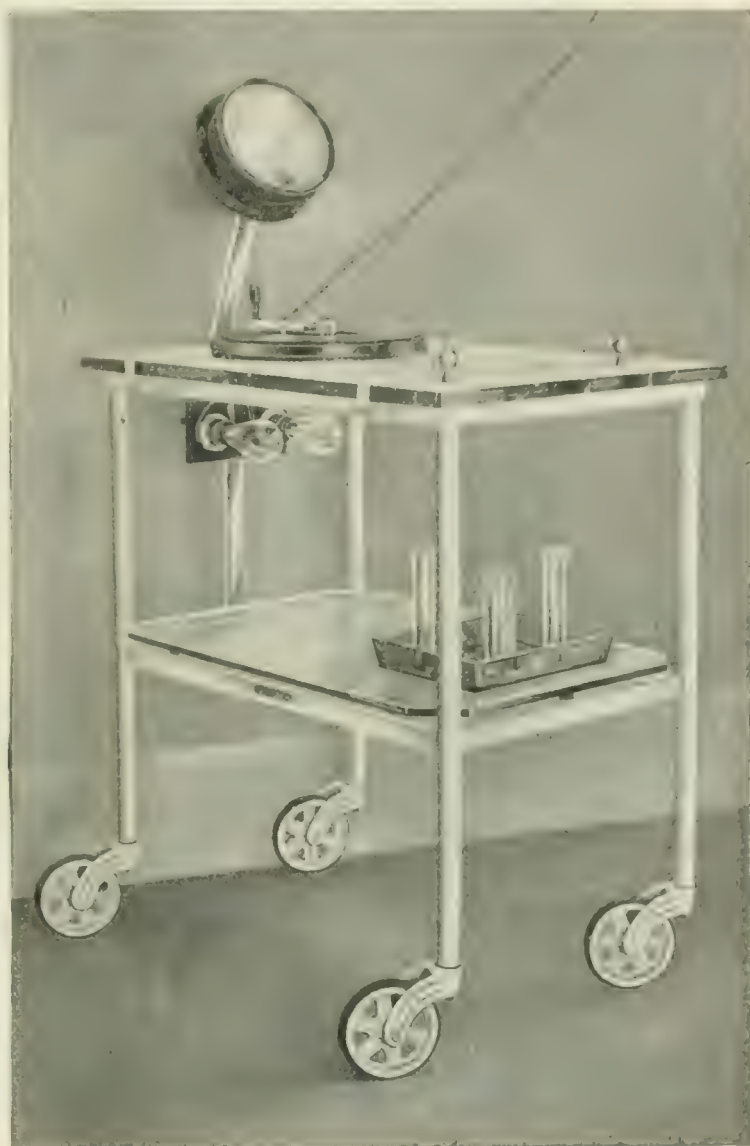


FIG. 1.—Cataphoric table, front view.

Journal of the American Medical Association several years ago, and has continued to give perfect satisfaction. It has been supplied mounted separately on wood, and in a cabinet devised by the writer, its use in the latter apparatus being urged because of its equal value in the control of all ordinary constant and induction currents in medical use.

The impropriety of using a cabinet apparatus, constructed largely of wood, in an operating room, nevertheless necessitated the continued employment of the separate controller and meter, which had to be connected up for each oper-

ation. The separate controller, moreover, itself had a wooden base.

Through the generosity of a friend of the Oncologic Hospital these various difficulties in the way of aseptic and simple apparatus for cataphoric work in the hospital operating room have been solved by the construction of the cataphoric table shown in the accompanying figures.

This table, of the same height as the operating

work of late, is of a special design that has been placed on the market by the Weston Electrical Instrument Co. at the earnest request of the writer, and it is believed to solve all the difficulties and remove all the mortifications to which physicians have been subjected on this score. That medical men should have in the past employed current meters less accurate than those in the humblest village power house has been a

serious arraignment of their good sense and of their conception of their duty to patients. By placing this meter (type 158) in its standard list at a moderate price, and without the necessity of a special order for its construction, as has been the case in the past with their medical meters, the Weston Company has made scientific constant current dosage possible to the physician, and has robbed the prevailing inaccuracy of its excuse.

To ensure a scale that could be read by the operator himself at some distance the meter has been made somewhat large for ready portability. It has two scales, selected by changing a plug below and in front to the socket marked "100" or "2,000," respectively. The minor or "100" scale is from zero to 100 milliamperes in divisions of one milliamperè. These divisions are

so large that half a milliamperè may be easily read. The major scale is from zero to 2,000 milliamperes in divisions of 20 milliamperes. In range of scales and free movement of the index over the amounts usually employed this instrument is believed to present the ideal combination for medical use.

Fig. 1 shows a front view of the table with a general view of the working parts. On the lower shelf is placed a glass tray with glass containers for the mercury, dilute sulphuric acid, and water for the amalgamation of the zinc needles.



FIG. 2. Cataphoric table, rear view, showing switches for placing series and shunt lamps in circuit when employing the table in minor applications.

guished by their shapes as to be clearly recognized by nurses and assistants, the positive pole having multiple attachments for the active electrodes. The wires leading to these are beneath the plate.

Under the top plate and well out of the way, the series and shunt lamps are also placed, permitting the large controller to be used for the small currents of minor applications, which require a control of the voltage as well as the milliamperage for least pain.

The meter finally adopted for this table, and I may say, also for all accurate constant current

Fig. 2 shows the supply mains and also the switches controlling the series and shunt lamps. In a major operation of zinc-mercury cataphoresis these switches should rest on the buttons marked "Out." In minor applications they should rest on those marked "In."

This table permits of a perfect control of the 110-volt direct street current in the operating room. When the house supply is the alternating current a motor transformer should be interposed, the leading out wires from the small dynamo of the transformer being attached to the table as shown.

The table was constructed under the writer's direction by Otto Flemming, of Philadelphia.

603 PROFESSIONAL BUILDING.

WHAT STAGE IN THE DEVELOPMENT OF CATARACT, PARTICULARLY SENILE CATARACT, IS THE MOST SUITABLE FOR ITS REMOVAL BY EXTRACTION?*

By JOHN ELMER WEEKS, M. D.,
New York.

In considering this question I infer that we are agreed that the effort of the surgeon should always be in the best interest of the patient. In many cases extraction of cataract may be delayed until the surgeon is satisfied that the most favorable time (the time of selection) for the operation has arrived. In many other cases the extraction is necessary for economic reasons at the earliest time possible compatible with good results.

I think that all ophthalmic surgeons agree that the most propitious time for the extraction of cataract is when the lens substance is readily detachable from the lens capsule. When the cataract has reached this stage it is really mature in an operative sense. The terms "mature cataract" and "complete opacification of the lens" are thought by many to be synonymous. This idea is erroneous so far as it applies to the most favorable time for the removal of cataract, as there are many exceptions.

In this connection it may be well to refer to and to briefly describe the types of senile cataract most frequently met with. These are

1. Equatorial (cortical) cataract: (a) imbibition cataract; (b) cataract, always smaller than the normal lens.
2. Cortical (chorioidal) cataract; anterior, or posterior, or both.
3. Nuclear cataract.

The equatorial cataract, the form most frequently met with, begins by the formation of opaque striæ near the equator of the lens. The shrinkage of the nuclear portion of the lens in this form plays an important part. The cortical lamellæ, as has been pointed out by Becker, do not shrink as rapidly as the nuclear lamellæ; as a consequence a process of cleavage between peripheral and nuclear lamellæ is set up. The fissures thus formed are filled with fluid, granular detritus, Morgagnian globules (myelin globules), and fat globules, the whole of which forms the liquor Morgagni. These spaces, filled as they are, produce white opaque striæ. This process is most marked in the equatorial region of

the lens, probably because the traction of the suspensory ligament prevents the lens fibres from following the nucleus as readily as do those at the anterior and posterior poles of the lens.

As the process advances the lens fibres among which the fissures form, take on a granular and fatty degeneration and become more or less disintegrated and broken. Morgagnian globules and albuminoid masses appear.

(a) In some cataracts, particularly in those forming rather early in life, an imbibition of intraocular fluids takes place, and the lens become considerably swollen, pushing the iris forward and causing a narrowing of the anterior chamber. The opacification of the lens progresses as the swelling increases, and the lens becomes almost opaque when the swelling has reached its maximum. The white soft cataract is the extreme example of this process. After having reached the maximum swelling, the lens gradually loses in volume, and the anterior chamber becomes deeper until the lens becomes smaller than the normal, transparent lens at the same period of life.

(b) In some cataracts which develop by the formation of fissures in the cortex a period of swelling, as pointed out by Priestly Smith, does not develop, the lens always remaining smaller than the normal lens of the same age.

Before maturity is reached these two forms of cataract present glistening or lustrous sectors, the so called asbestos stripes. This appearance is produced by the granular contents of fissures and laminae of lens fibres undergoing granular and fatty degeneration shining through transparent lens tissue and capsule, the liquor Morgagni not yet having found its way between capsule and cortical lamella of lens fibres. When the liquor Morgagni has found its way between capsule and cortical lamella, even in a very thin layer, the asbestos appearance is almost if not entirely lost, although when the layer of liquor Morgagni is very thin the structure of the lens may be visible to some extent.

Cataracts which develop in the manner described can be readily removed when the development of liquor Morgagni between the lens capsule and the cortical lamina of lens fibres, in however thin a layer, has taken place. In not a few cases this occurs before the anterior chamber is fully restored to its normal depth. If extraction is attempted before this period the lens cortex will adhere more or less firmly to the capsule and some soft lens substance will remain in the capsule. If this form of cataract is permitted to become hypermature the capsule may become thickened by hyperplasia of the epithelial cells, the intracapsular fluid escapes, calcareous and cholestrin deposits form, and the degenerated lens fibres become attached to the anterior capsule, and difficulty in extraction is experienced.

Another form of cleavage cataract met with not very infrequently is the purely cortical cataract, sometimes referred to as chorioidal cataract. This is frequently preceded or accompanied in its early stage by a very mild uveitis or anterior chorioiditis. The process of cleavage begins in the posterior lamellæ of the lens, very near the capsule of the lens, sometimes near the equator, often at the posterior pole. It interferes very greatly with vision, advances very slowly, and may become almost, if not quite,

* Read before the Section in Ophthalmology, New York Academy of Medicine, January 21, 1907.

stationary. Both eyes are usually involved, but it may be monocular. There may be vitreous opacities in some cases; in others the vitreous may be perfectly clear and the function of the retina may be unimpaired. The lens in these cases is as a rule smaller than the normal lens, but a stage in which the lens substance is readily separable from the capsule is reached, if ever, only after many years have elapsed. Reduction in the size of the lens by the process of sclerosis may continue until the lens becomes very thin (disciform).

The third form, which is second in frequency to the first form described, is that in which the opacification appears at the centre of the lens. The process is essentially one of sclerosis. In some cases numerous minute fissures are found between lamellæ in the nuclear portion of the lens, due to a process of cleavage, the process but slightly affecting the cortical part of the lens. In other cases of this type no cleavage can be seen. The substance of the lens becomes sclerosed, the nuclear portion taking on a deep amber color and becoming hazy. In these cases the lens is always smaller than the normal lens at a corresponding age; it tends to grow thinner (disciform) and smaller in its equatorial diameter. Such a lens when the opacification has advanced sufficiently far to interfere with vision to an annoying degree, is not very closely adherent to its capsule. When extraction is attempted the cortical lamellæ are more adherent to the nuclear portion than to the capsule, and are removed almost completely with the nuclear portion even when the cortex is transparent to a considerable extent.

There is one other type of cataract which we are called upon to extract from time to time, namely, the zonular cataract, when the cataractous portion becomes so dense and is so large that vision is reduced below the point which enables the patient to follow the ordinary vocations of life (particularly when the density of the cataract reaches this stage in adults) and the cases in which calcareous deposits render dissipation of the cataract by needling imprudent or impossible.

Extraction of cataract in the four types described, if done when most propitious for the welfare of the patient, would be performed in the *first type* as soon as liquor Morgagni appeared between the lens capsule and the lens substance; in the *second type*, at the convenience of the patient after vision is reduced below that necessary for the ordinary vocations of life; in the *third type*, when useful vision has been abolished, and the lens is appreciably shrunken; in the *fourth type*, at the convenience of the patient after vision is reduced below that necessary for ordinary uses.

The degree of vision necessary to the individual in order that he may not be incapacitated differs with the vocation. It may be put at twenty fortieths to twenty two-hundredths.

In the foregoing pages we have considered the most propitious time for the removal of cataract. In the process of development of all forms of cataract there is a stage between the loss of useful vision (by the term "useful vision" I mean vision which enables the patient to follow his vocation without decided difficulty) and the attainment of a condition in which the detachment of the lens fibres from the lens capsule is most easy, which may

extend over a few months or a few years. This stage is distressing to the patient and in not a few instances entails hardships on himself and his family.

During a long experience in the removal of the noncataractous lenses in the dead house, conducted for selfinstruction as well as for the instruction of students in the operative surgery of the eye, the writer has studied the behavior of the transparent lens. It was observed that in the lenses that were twenty-five or thirty years old, the nuclear portion was fairly firm, about two thirds of the mass of the lens coming away with the nucleus. It was further observed that much of the detached cortex could be made to follow the nuclear portion. The firm "nuclear" portion becomes larger as the age of the lens increases. On the strength of these observations, in spite of the dictum "hands off" in reference to operations on immature cataract, the writer began to remove the cataractous lens soon after it had reached a degree of opaqueness sufficient to interfere with useful vision, whatever the form of the cataract might be, in all cases in which such removal was particularly urgent excepting only those cases in which the lens was much swollen. If the lens is much swollen the narrow anterior chamber, in addition to the immature nature of the cataract, makes the extraction much more difficult, and it is much better to wait until the lens has shrunken to some degree before attempting the operation.

Before this plan was followed the operation of ripening advocated by Förster was tried in a number of cases. The lenses became rapidly opaque, but it was found that removal six weeks or two years later was complicated by adhesion of cortical substance to the capsule to probably the same extent as would have been the case had the extraction been performed at the time of the Förster operation. This experience was sufficient to cause the writer to abandon all ripening operations as not of sufficient value to compensate for the extra liability to accident and to inflammatory changes consequent on them.

In almost all cases of the extraction of immature cataract some soft lens substance remains even after very careful irrigation of the anterior chamber. All that can be removed without too severe manipulation should be removed, but if a little cortex remains it is not a serious matter. Cortical lens substance which may remain in the eye after the removal of immature cataract does not give rise to serious inflammatory trouble.

Substances capable of producing irritation, such as tubular crystals of cholesterol or minute deposits of lime, do not exist in the cortex of the immature cataractous lens, but do appear in greater or less quantities in the cortex and deeper parts of the hypermature cataract, and their escape from the lens capsule and retention in the anterior or posterior chamber is not infrequently accompanied or followed by irritation to the eye of greater or less severity. The cortex of the immature cataract absorbs slowly if it lies in a capsule which has been opened near its periphery and in which the opening is small. If the capsule has been opened freely, which I endeavor to do, absorption of the cortical substance advances fairly rapidly.

After the remaining cortical substance is absorbed

the capsule of the lens may be dealt with as may be indicated by its condition. It may not be necessary to do anything with it.

At a meeting of the American Medical Association held in Baltimore in 1895 the writer reported the results of twenty-five successive cases of immature and zonular cataract for the removal of which he had operated by extraction. There were no losses. The combined extraction was done in six cases; simple extraction in nineteen cases. One prolapse of iris occurred. Dissection was done in twenty cases. Ultimate vision was 20/20 or better in thirteen cases (52 per cent.). The lowest vision in any case was 20/70.

Since 1895 the writer has operated in many similar cases, proportionately more combined operations than simple operations being done. The visual results have not been less favorable than were reported in 1895.

I do not wish it understood that I operate for the removal of cataract by preference before the time of selection is reached. The difficulty of extracting immature cataract is greater than the difficulty of extracting mature cataract. When it is done, it should be done by expert operators. When so done the visual results are not much, if any, below those obtained after the removal of mature cataract.

46 EAST FIFTY-SEVENTH STREET.

PUBIOTOMY.

BY RICHARD C. NORRIS, M. D.,
Philadelphia.

The growing popularity of pubiotomy, based upon the contrast between its statistics and those of symphyseotomy, indicate that it is likely to find an important place among obstetric operations. Rubinrot (*Study of Symphyseotomy*, Paris, 1899) reviewed all the cases of symphyseotomy reported up to 1899 and gave the maternal mortality as ten per cent., the morbidity thirty per cent. Gigli, who in 1894 proposed pubiotomy as a substitute with many advantages, stated in a letter to E. B. Montgomery, of Quincy, Ill., in September, 1906, that in 300 cases of pubiotomy with a mortality of from two to three per cent. there had been no maternal mortality in aseptic cases. Of 133 aseptic cases collected by Montgomery (*Am. Jour. of Obstetrics*, December, 1906,) there was no maternal mortality and no ill effects upon the patients' subsequent gait or health. The operation has been received in Germany with favor and doubtless the reports of numerous cases will soon appear in our own country.

Having first concluded to do an elective Cæsarean section on the patient whose labor is the subject of this report I was induced by the favorable results of pubiotomy to substitute the latter operation which was done December 6, 1906, the first I believe to be performed in this city.

CASE.—Mrs. E., aet. twenty-six, a multipara, lost her first child during a difficult forceps extraction. In her second labor forceps had been tried unsuccessfully by her attendant, Dr. Lambert Ott, who called me in consultation. An examination (the hand in utero) determined that the child had perished and I delivered her by craniotomy that required crushing of the base of the skull.

Her pelvic measurements were as follows: Inter-

spinous 25 cm., intercostal 27 cm., external conjugate 16½ cm., conjugate vera 8 cm. After delivery her weight was 125 lb., height 5 ft. 10 in., length of feet and nine inches. Her third labor at term occurred at the Preston Retreat where she had been admitted several days prior thereto. After four hours of active labor pains, with the bag of waters broken, the head was freely movable above the pelvic brim, the occiput lying to the left. A longitudinal incision above and to the inner side of the left spine of the pubis was made through the sheath of the rectus, only large enough to admit the tip of the index finger, which located the upper border of the pubic bone just inside the pubic spine. The periosteum was nicked, and the point of the Doederlein needle inserted. The index and middle fingers of the left hand were then passed into the vagina to push the base of the bladder to one side and the head upward, and having located the tip of the Doederlein needle, guided its point as it was made to hug the posterior surface of the pubic bone, and escaping the margin of the obturator foramen, by a sharp turn of the handle the needle finally swept under the pubic arch ready to emerge through the soft tissues of the labium. The left labium was then strongly dragged toward the median line, and the needle thus was ready to puncture the skin at a point well removed from injury to the labial veins and from contamination with lochial discharge. The Gigli wire saw was drawn into place as the needle was removed. Before beginning sawing the fingers of the left hand were again placed in the vagina to secure a correct line along which to sever the bone. This line passes just within the pubic spine and avoids the margin of the obturator foramen.

Traction upon the handles of the saw held the latter firmly in this line until a few strokes of the saw were carefully made to insure accurate section of the bone along this line. When the bone had been completely severed there was free oozing from the upper opening, probably from the cut bone, but none from the lower puncture. The bleeding was at once permanently controlled by a small gauze pack placed in the wound and between the separated ends of the bone. The ends were separated a finger's breadth so soon as the section of the bone was complete. The cervix being completely dilated and the vagina relaxed, axis traction forceps brought the head into the pelvis at once. During the traction the ends of the severed bone separated three fingers' breadth, two assistants meanwhile making counter pressure upon the trochanters. A living child weighing 7 lbs. 14 oz. was quickly delivered. The gauze pack was then removed from the upper incision; there was no bleeding; the two small skin incisions were closed each with one silkworm gut stitch, the upper including the split fascia of the rectus.

A wide adhesive strip was applied around the pelvis, and the patient placed upon a Bradford canvas frame for her comfort and the convenience of her care during the puerperal period.

The convalescence of mother and child was normal in every respect, the temperature and pulse never rising above the normal. On the twenty-sixth day an examination failed, much to my surprise, to find a trace of callus. The incised bone was in perfect apposition and united, whether by bony or fibrous union I do not know. The patient left the bed on that day, walked without discomfort and returned to her home on the thirty-first day.

My observation of this case has made me rather enthusiastic over the utility and safety of pubiotomy, but grave accidents have occurred, however, in some reported cases and final judgment of pubiotomy must be reserved until these accidents find their way into print as happened with symphyseot-

omy. I cannot believe that a large series of cases could be so easy, uncomplicated, and rapidly successful as was this case.

Indications, Advantages, and Accidents.—The degree of pelvic deformity indicating pubiotomy is the same as that ordinarily given for the relative indication of Cesarean section, i. e., a conjugata vera to 7 c.m. The majority of operations thus far have been done for cases with contraction between 7 and 8.5 c.m. To replace embryotomy it has also been recommended and performed in cases of impacted face or brow presentation. It has been recommended to place the saw ready for section of the bone as a prophylactic measure when about to extract a difficult breech presentation or after version. Aubert (*Revue médicale de la Suisse romande*, 1906, No. 1) believes it will replace the induction of labor for the lesser degrees of pelvic contraction. A view of the more enthusiastic supporters have even justified its performance without subsequent retaining dressing in order to permit of permanent enlargement of the pelvis. A new operation is always carried to extremes and pubiotomy will doubtless show the same history in this respect as did symphysiotomy. The increase in the diameters is given by Van Cauwenbergh (*L'Obstétrique*, January, 1905) from experiments on seventeen cadavers as follows: A separation of the cut ends of the bone of 3 c.m. increased the conjugata vera 1 c.m.; the transverse 1.4 c.m.; both oblique diameters 1.3 c.m. A separation of 4 c.m. is likely to damage the sacroiliac joint. Waldstein (*Zentralblatt für Gynäkologie*, xxx, 7) declares the conjugata vera in the normal pelvis is increased 8 per cent. of its length; in the rhaclitic pelvis over 25 per cent. The space gained is about the same as is gained with symphysiotomy with equal separation of the bones.

The advantage of pubiotomy lies in the fact that the supports of the bladder and urethra and the clitoris and structures behind the symphysis are not only not cut but also are not so likely to be lacerated by the bilateral traction caused by the separation of the bones.

Lacerations of the vagina and unavoidable hæmatomata have been the most frequent accidents thus far reported. Under aseptic conditions these really are not serious and often may be avoided by a proper technique of operation and by a proper method of delivery. Bauereissen (*Münchener medizinische Wochenschrift* Nos. 51, 52, 1905) has demonstrated that the hæmorrhage originates especially from the corpus cavernosum, the bulbus vestibulæ, the vesical plexus, the veins of the urogenital diaphragm, and possibly the pubic branch of the inferior epigastric and obturator arteries. This complication of hæmorrhage or hæmatoma has led to the discussion of three methods of operating, the open, the partially subcutaneous, and wholly subcutaneous methods. With my present light on this question I shall again use the partially subcutaneous method hoping to avoid hæmorrhage as has so frequently happened, but at the occurrence of serious bleeding I would not hesitate to change at once to the open method, cutting down to the bone and controlling the bleeding by ligation. Hæmorrhage from the vulvar veins ought to be avoided, and was in my case, by drawing the vulva firmly to the median line, when the lower

puncture is made and holding it there until the bone is cut through.

The other accident, tearing of the vaginal or cervical attachments ought to be avoided by careful delivery after section of the bone. Spontaneous delivery, as has been urged by many operators, and especially in primigravidæ, ought not to be necessary if the soft parts have been prepared by thorough dilatation as can be done by the large size Pomeroy bag which I have found most efficient, allowing it to remain in place fully distended for two or three hours, if not spontaneously extruded by the strong pains it usually excites. The cases in which extensive lacerations of the vagina have been reported have usually been posterior positions, and this fact should make us cautious about forcible and rapid anterior rotation. Bauereissen (*loc. cit.*) has called attention to the fact that instrumental delivery increases the danger of tearing the vagina, and that the laceration of the deep transverse perineal muscles eventually leads to vaginal prolapse. The pelvic floor is drawn upward as the bones separate; the depth of the vagina is thus shortened and rotation interfered with. Forcible rotation should be most cautious and will be least dangerous when the soft parts have been overdilated and stretched by the preliminary use of the large Pomeroy bag. Manual rotation at the brim, of a posterior occiput, converting the latter into an anterior position before applying forceps is a valuable means of preventing the lacerations that have occurred at the site of the incised bone, when the rotation is accomplished with the forceps after the head has entered the pelvic cavity. During traction with the forceps it is a precaution to have assistants make counter pressure upon the trochanters to prevent too wide separation. Sellheim (*Beiträge zur Geburtshilfe* X, 3) advises against the employment of the Walcher posture, declaring it, after section of the pubes, to be not only superfluous but positively dangerous to the capsular ligaments. The increase in the conjugate is for the most part at the expense of the sacroiliac joint, hence the section should be made on that side through which the biparietal diameter of the head must pass.

Jessen (*Zentralblatt für Gynäkologie*) reports an interesting case in which pubiotomy was attempted and because of serious hæmorrhage and breaking of the saw before complete section of the bone, the wound had to be closed at once and symphysiotomy was substituted. During the forceps extraction both the cervix and vagina were lacerated at a point corresponding to the pubiotomy wound. The wound through the symphysis healed rapidly, but the sawed portion of the pubic bone failed to unite, no callus being produced and tenderness persisting for a long time. The breaking of the saw is an accident that has frequently occurred and warrants having in readiness more than one saw. The lacerations might have been avoided by preliminary dilatation with a Pomeroy bag and by more cautious traction with the forceps. The frequent occurrence of hæmatomata after the subcutaneous operation call for most careful asepsis. The tip of the needle should be held firmly in contact with the posterior surface of the pubic bone, under the periosteum if that is possible, during its passage. By this means the cutting of bloodvessels with the saw is avoided

Rupture of these same bloodvessels when the cut ends of the bones separate is an accident not always to be avoided. Using the finger as a guide in passing the needle helps to push the bladder aside and prevent its injury.

From this brief discussion of the operation it will be seen that there are many accidents that can attend pubiotomy, and that it is an operation to be undertaken by those who possess some surgical skill. In the hands of the average surgeon in private practice it appears to me as certainly safer than Cæsarian section, and the future may prove that even in the expert's hands and in a well equipped clinic its results will make it replace the elective Cæsarian operation for its relative indication.

TWENTIETH AND HAMILTON STREETS.

SOME UNPUBLISHED OBSERVATIONS ON ENDEMIC NEURITIS, WITH A REVIEW OF THE RESEARCHES AND OPINIONS OF SOME RECENT INVESTIGATORS.

By JUSTUS M. WHEATE, M. D.,

Boise, Idaho,

Late Captain and Assistant Surgeon, U. S. V.; Captain and Surgeon, Philippines Constabulary; Member of the Manila Medical Society, etc.

About two years ago I accepted an invitation from the secretary to prepare a paper to be read before the Philippine Islands Medical Association at its first annual meeting. Since I had been for some months engaged in investigation and study of the ætiology of beriberi, I chose for the subject of my paper Some Unpublished Observations on Endemic Neuritis in the Philippine Islands, which was duly announced in the published programme. Owing to circumstances over which I had little control I was prevented from attending the meeting and my "observations" were never made public.

During the year which followed I continued to devote such time to further experiment as my rather exacting duties permitted, and I did not abandon my efforts until in July of last year, at which time my return to the United States necessarily precluded further research. During the five years of my service in the Philippines I had exceptional opportunities to study this disease. I have encountered it in hospital where I have watched every clinical development from its incipency to recovery or death. I have treated it in the family of the humblest native; have seen it in endemic prevalence in certain provinces, in circumscribed and local epidemics, and the so called "sporadic" case. I have seen it suddenly appear in the vigorous, healthy young adult, living under unimpeachable domestic hygienic conditions, as well as in the filthy quarters of the laborer and *tiendero*. Again, in endemic areas, I have been surprised to observe it almost uncannily avoid, seemingly, the most inviting localities, only to appear under conditions and among inhabitants wholly at variance with the edicts of the textbooks.

Before arriving in the tropics I had fortified myself with such literature covering this and other tropical diseases as was obtainable, and hence had well grounded opinions and prejudices which had to be dethroned by my own experiences and by painful surprises in many instances. He who has seen and treated beriberi only in hospital practice can

have but an academic theory concerning its origin. Slowly but inevitably I had forced upon me cumulative data from such varied sources that only intelligent and properly directed effort seemed required to disclose a definite ætiological causative agent.

In a paper of this nature it would be superfluous to add to the literature concerning the history of the disease. Able writers, statistically inclined, have supplied sufficient and instructive data covering this field of research.

Suffice to say the condition, apparently, which we call beriberi was recognized and described in medical literature at the beginning of the Christian era. Spanish and Portuguese explorers encountered it in the East in the sixteenth century. During the colonization period of the Orient in the eighteenth and nineteenth centuries the English and Dutch writers contributed to the general knowledge. Rodgers described it at length in 1808, and guided by a characteristic symptom usually present in the disease, called it *hydrops asthmaticus*. It has been recognized in the Philippines since their early occupation by the Spaniards. The Spanish friar, Gaspar de San Augustin, records the first description of it in his *Conquistas de las Islas Filipinas* in 1616 (1). Another friar, Juan de la Concepcion, speaks of it in his *Historia de las Filipinas* (2).

Its geographical distribution in the islands is by no means general. It is most prevalent in the Visayan group and in the southern half of Luzon and the adjacent islands. It is occasionally more or less noticeable in the coastal areas of all the islands of the archipelago. I have never encountered a case among the Igorrotes in their mountain fastness, nor among the Calingas on the eastern slope of the Cordilleras. And compared to other localities, it is infrequent among the North Ilocanos and in the Cagayan Valley.

In studying the ætiology of beriberi, and in order to appreciate the trend of scientific opinion it will be necessary to review the theories propounded by different investigators, understand their premises, and follow in sequence their developments.

At the present time there may be said to be four essentially different theories as to the causation of this disease, each supported by adherents who seek to justify their conclusions by specific data. First to attain to popular favor was the *excessive carbohydrate diet, nitrogen starvation, or unbalanced ration theory* which finds its strongest advocate in Takaki (3), surgeon general of the Japanese navy. The results in practically eliminating beriberi from the navy following important change of regulations which revolutionized the sanitary and hygienic efficiency of the service had the effect to establish in the minds of many the intimate association between a rice diet and beriberi. It was such a spectacular coincidence that it gained a ready following, many of whom are loth to abandon it.

Next may be mentioned the *toxic food theory*; the belief that "diseased" rice or unwholesome fish, even a special variety of fish, is the cause of the disease. The latest claimant in this field is Gimlette (4), whose experiments in Sokor furnish interesting data for those looking only for evidence in support of this theory. This is preeminently the belief of the laity in the endemic zone.

A more alluring claimant for scientific recognition

is the *bacteriemia* or *exogenous toxine*¹ theory of Sir Patrick Manson, whose classic treatment of the subject (5) still finds enthusiastic supporters.

Lastly, the belief in a specific transmissible organism as the responsible agent is unquestionably directing the efforts of the present day investigators along the line of research destined eventually to settle this long disputed question. In contradistinction to the *extracorporeal* cause, this may be termed the *endogenous toxine* theory.

The first two of these theories may be disposed of briefly.

The nitrogen starvation dogma, needless to add, has been necessarily discarded by practically every recent experimenter. In my own work I have seen cases develop among the superior classes of society whose dietary was beyond criticism, and my experience is corroborated by many others whose work I have studied. Ten years before the rice diet became an issue, Patterson, in his excellent report of the Bahia epidemic (1871-72) says: "It attacks persons in the most favorable conditions of life as regards means, residence, and regularity of life; and yet it is not sufficiently confined to our locality, or even to our houses, as to enable one even to suspect any local cause. Its favorite victims are parturient women². Professor Manson's theory of toxæmia, or poisoning by absorption of the product of extracorporeal bacterial activity, is so generally before the public that it would be superfluous to add comment at this time.

The theory of endogenous toxæmia is not only sustained, I believe I may say verified, by the accumulating data as the result of careful work by scientific methods, but considering the disease in perspective, if I may so express it, comprehending its clinical history, its mode of onset, its short period of incubation so unlike the gradual development of degenerative neuritis of exogenous origin, its pathology upon which we are all pretty much agreed, inevitably leads to the conclusion that beriberi must be classed with the growing list of specific infectious diseases. Since Scheube's studies in determining this to be an infectious disease, the numerous contributions to the fund of corroborative evidence have left but little room for further doubt. The question appears to me to have passed beyond the sphere of the ætiologist and now rests with the bacteriologist.

From Malcomson (1835) to the latest investigator there is not wanting in the researches of each negative evidence in support of this belief. Thus, Takaki charges the disease to rice diet because the Japanese eat rice and have beriberi. Now, the Ceylonese eat rice and there has not been a case of beriberi in Ceylon in a hundred years. In Calcutta, Colonel Charles (6) tells us the Bengalis eat rice as their principal food and yet never have beriberi. On the other hand, Miuri says since the Japanese eat raw fish and incidentally have beriberi, raw fish must be the cause. No other race eats such a relatively large amount of raw fish as the Hawaiians, yet beriberi is conspicuous by its rare occurrence.

This view is materially strengthened in my own experience by reason of certain data obtained during the investigation of the disease in the most favorable conditions of life."

ing the year 1904, and by means of which I was enabled better to comprehend and appreciate various accumulated data from preceding years which by reason of my inexperience and lack of method passed uncomprehended at the time. To illustrate this point I will relate one of my earliest experiences which serves to demonstrate how a preconceived premise may be supported by *bona fide* evidence.

In 1901, while I was post surgeon at Sara, Isla de Panay, several cases of beriberi developed among *ladrone* prisoners confined in the post guard house. This guard house, it must be explained, was an old wooden building with somewhat decayed and broken floors close to the ground. The building stood on one side of the public plaza in the street line and in close proximity to similar houses occupied by Filipinos. It was of the middle class type but old and with very damp floors. The house was occupied by Filipinos prior to the arrival of the troops, but upon the establishment of the post this building was secured for a guard house.

It was so occupied for several months without incident, prisoners coming and going, together with the usual quota of American soldier prisoners. Then came a first case of beriberi in a native prisoner; a typical bare footed *tao*. Within two weeks there were five cases resulting in three deaths, all natives.

Acting upon the Manson theory, preparations were at once made to abandon this guard house. As none other was available, a temporary nipa covered bamboo shack was erected on the same premises a few yards distant. One compartment had a split bamboo floor which served as a bed, as is customary in houses of that type. Slaked lime was freely sprinkled about the ground floor of this new house, and as the structure was practically nothing more than a pen with a roof, the air and sunlight had free access, beside having been erected upon a site previously continuously sterilized by sunlight. The well prisoners were transferred to this guard house and as was expected, no further cases developed. What an eloquent tribute this to the "place disease" theory of Manson. And how perfectly parallel to the later experiences of Cunningham at Christmas Island, and used by Professor Manson to corroborate his views. But this only emphasizes man's proneness to conceive a premise and search for only such evidence as will sustain it. I wholly overlooked at that time the vital fact that not a prisoner *who wore shoes* became infected. These were represented by three of four Americans and two or three Filipinos of the "shoe *hombre*" class, while all of the victims were of the humbler type of *ladrone*, nondescript denizens of the forest, barefooted, and covered with sores or abrasions.

It is scarcely relevant to add that the natives were all rationed alike. This first experience which lead me into error in my deductions, was many times paralleled by similar ones of more or less value in the years following, but which finally served to impress me with belief in the direct transmission of the disease.

Referring again to the "diseased" rice diet, which is deserving of a word in passing, I have elsewhere stated that this theory is the favorite and

cherished grievance of the layman, particularly the officer commanding Filipino soldiers.

During the first years of American occupation, incident to war and pestilence, the Philippines failed to produce enough rice to supply home consumption, and the greater portion of the deficiency was imported from Saigon. Owing to careless and inefficient methods of handling and storing this rice, most of it in time became infested with a mycellium. Much of it stored in bulk in damp, dark warerooms became worthless, and quantities of it were at times condemned and destroyed. For a time during market shortage, this Saigon rice was supplied by the commissary department of the constabulary to all the troops. While chief surgeon of the second district, P. C., embracing the southern provinces of Luzon and the islands of Mindoro, Masbate, and Romblon, I was hastily summoned to the latter island to investigate an outbreak of beriberi in the garrison at provincial headquarters. A telegram from the officer in command to the district director predetermined the responsible agent (in his own mind) by wiring "outbreak of beriberi among soldiers due to bad rice." The "bad" rice was undeniably present; incidentally, beriberi.

Now, this very rice was at that time being supplied by the subsistence department to nearly all the stations in the district, and I was using it in the Lucena Hospital and in my own household, yet coincident beriberi had never made its appearance among us. These laymen omit to recall that beriberi was always present in about the same percentage during fat years and lean, when Saigon rice was unknown in the islands. Such instances as this can be multiplied indefinitely in the Philippines, and a personal familiarity with such incidents must strongly impress the unbiased reasoner with the unscientific claim of the "diseased" rice theorists.

What I consider as most important evidence of the direct infection theory occurred during the summer of 1904 in Tayabas Province, Island of Luzon. At the district headquarters of constabulary in Lucena, was stationed a civilian (American) in charge of the telephone and telegraph line construction for the government. He occupied as quarters a rather large, well built wooden house, well kept, and carefully policed inside and out. Quartered in the same building were usually from ten to fifteen Filipino laborers employed in line construction, together with a detachment of five or six constabulary detailed as guard when the working party was in the field. The soldiers and laborers lived in all respects under identical conditions. The laborers were employed by the month and when not on duty in the field, were, as stated, quartered in the Lucena building. From time to time, as occasion required, the force was augmented or decreased, but always recruited from the more intelligent class of laborers either in Lucena or the outlying province. A tour of duty may consist of from one day to three or four weeks, during which time foreman, soldier escort, and laborers fared alike in so far as habitation, rations, and environment are concerned.

As would be expected, in building new telegraph and telephone lines in the Philippine Islands, practically all of the route is through virgin forest and jungle; regions which perhaps have not been subjected to direct sun light since history began. Per-

mit me to anticipate by saying that here is the natural and ideal habita of the organism responsible for the clinical and pathological sequence we call beriberi (a very unscientific and unexpressive term, by the way, considering its etymology). Now, when upon these expeditions the laborer invariably went barefooted, while the soldier and foreman were shod. Not a single case of beriberi occurred among the soldiers during the season, while the labor gang had to be recruited time and again owing to the losses from beriberi. When these facts forced themselves upon me, I began systematically to make use of the opportunity to ascertain the cause. As a result I have seen men leave station in excellent health and after an absence of a few days return to station with beriberi. I have seen them return when the disease was in its incipency, and also when the patient had to be carried to the hospital in the well developed inflammatory stage. I have seen a man after two weeks in station and in perfect health go to the forest and return the fifth day with well developed peripheral pain, heart murmurs, and œdema of the lower extremities.

These instances are but a generalization of more accurate data too voluminous to relate here, but are sufficient, I trust, to establish undeniable connection between the barefooted victim and his environment, and the subsequent disease.

It is needless to say that working under such conditions the man would inevitably receive abrasions of the feet and hands which furnish ready entrance to the microorganism when present. The Filipino of the laboring or lower class, through transmitted habit of ancestry, has an aversion to wearing shoes when at labor. However fond he may be of shoes and dress during his leisure, he will if permitted, usually discard them as an incumbrance when at work. This applies to the Filipino soldier with equal force. Constabulary detachments under command of a noncommissioned officer and indeed under any officer who will permit it, usually go barefooted, on a "hike." His proneness to the habit leads him to discard his shoes whenever circumstances permit. This, in my opinion, explains the origin of the occasional case of beriberi encountered among the scouts; and particularly those cases occurring among the constabulary. This opinion is amply verified by comparison of the *Report of Sick and Wounded* for the years 1903, 1904, and 1905.

In the establishment of the civil regime, the organization of the various bureaus, the allotment of appropriations, etc., the newly organized constabulary was a very inefficiently equipped body, and soldiers went barefooted for months at a time. During this period the admissions to sick report were numerous, but while I have no accurate data at hand, I am perfectly secure in saying that during 1905 and 1906, when the organization had become a well uniformed and equipped body of troops, there were less than one fourth the admissions to sick report from beriberi than during 1903.

Certain localities for reasons undetermined appear to be especially favorable for the propagation of the germ life. For example, a certain district in the low land adjacent to the bay of Laguiminoc in Tayabas Province, furnished a large percentage of my Lucena hospital cases. This was a section

subjected to the effects of the southwest monsoon, and during that season, called for frequent expeditions for the repair of the lines, and it became noticeable that an expedition into that region almost certainly resulted in an infected man.

In studying the clinical aspect of the disease, the uniformity with which certain phenomena are always present added to the ætiological history obtained lead me to associate persistent effects with definite cause. For example, in all my cases, there were present during the early course, more or less pronounced heart lesion. There was nearly always to be discovered some skin lesion of the extremities; perhaps infinitesimal, perhaps oftener a recent sore.

My patients were nearly all young adult men—that of course being determined by the class of patients which mostly came under my treatment. I have seen but one female child, age twelve, and one American soldier with the disease. I have seen a number of Chinese and Chinese *mestizos*, all males. I have seen one, possibly two, female Filipinos, develop the disease following child birth (why not?). On the contrary I have never seen a case among the upper class of Filipinos, the class who habitually wear shoes, except the origin of infection was most explainable to my mind. In contemplating these obvious facts, I not only determined to learn what I could through my own endeavors, but I desired to avail myself of such information as more experienced observers could furnish.

Accordingly in December, 1904, and January, 1905, I addressed the following circular letter to all the principal U. S. consuls and consular agents in the endemic beriberi zone. In time I received many gratifying replies, some of which were of great interest and instruction and from which I shall have occasion to quote, bearing in mind, however, that owing to the lapse of time since these opinions were expressed, they may not represent the present views of the writers. Here follows the circular letter:

HEADQUARTERS SECOND DISTRICT PHILIPPINES CONSTABULARY.

MEDICAL DIVISION.

LUCENA, P. I., December 9, 1904.

The Honorable U. S. Consul:

I have the honor to address you upon a subject that probably does not appeal to you in a professional sense, and in that event will beg the favor that you hand the communication to an army medical officer of attainments or to a resident civil practitioner equally competent, who may do me the honor to consider my request.

In my particular field of work in the Philippines I have encountered a great deal of "beriberi," which has led me during the past year or two to devote some especial attention to the disorder; and it is for the purpose of aiding this work that I desire to obtain any scientific data or any general information which you may be able to furnish me.

As an introductory, I may say that I desire to learn the prevailing opinions as to: (a) The cause and manner of propagating the disease, (b) the relative frequency as compared to other prevailing diseases of the country, (c) the mortality, (d) and particularly if it is believed that severe cases ever eventuate in perfect recovery?

1. Is the disease endemic among your people, and is it ever epidemic?

2. What part does a rice diet play in the causation?

3. What ages seem to be most susceptible, and does any particular occupation appear to predispose to it?

4. Does the disease appear to be more prevalent among males than among females?

5. In your observations, is a valvular heart lesion always present in your cases, and does it ever entirely disappear?

6. Do you regard the heart lesion as primary or secondary in the course of the disease?

7. Has any systematic research been made by any member of the profession in your community in the endeavor to discover a specific cause of the disease?

8. What complications have you encountered as concomitant symptoms?

9. What is the prevailing treatment professionally, in your section, and what, if any, is practiced by the laity?

With apologies for asking so much of your indulgence, and thanking you in advance for such information as you may be able to get me, I shall beg to continue, most respectfully,

(Sig.) J. M. WHEATE,
Capt. Surg., P. C.

An interesting series of experiments were begun in 1900 by Dr. E. R. Rost, Captain I. M. S., in the General Hospital at Rangoon and his results were published in the *Indian Medical Gazette* (7) from time to time. In his earlier experiments he employed chickens for his control inoculations, and later, pigeons. For the details of these experiments the reader is referred to the publications. The conclusions that most concern us, however, are summed up in the following extract from the monographs sent me by Captain Rost:

"A disease in fowls may be produced by: (1) Feeding fowls on fermenting rice obtained from the jars in rice liquor shops; (2) feeding fowls on rice obtained from the lower bags in damp rice godowns,³ which is diseased by a thready clammy growth of organisms⁴ holding several grains together; (3) injecting fowls intraperitoneally with blood from cases of beriberi, with and without œdema; (4) injecting fowls intraperitoneally with rice liquor from shops in the bazaar." . . . "The above series of cases show an identical disease produced in different ways, and clearly shows the connection between beriberi and a disease in rice."

"In my former report I omitted to mention that the size of the organism was about the size of the tubercle bacillus, and so it can be easily distinguished from subtilus, with which one is likely to be contaminated, on account of its presence frequently on rice."

Dr. Rost further states that blood serum from a fowl recovered from beriberi agglutinates the bacillus in the blood from other beriberi cases, and also those found in rice liquor.

Quoting further from a later series of experiments, he says of the symptoms: "The birds rapidly became anæmic, weak, listless, and fell remarkably in weight, their feathers fell out, commencing on the neck, and extending to the trunk, the cock combs became blue."

"They all suffered from diarrhoea, some bad, slimy, bloody evacuations. They fed well on the fermenting rice and never starved until the final stage of paralysis occurred, which was within two days before death."⁵

. . . In his first series he says of the post mortem findings: "Wasting was found of all tissues alike,⁶ nothing of note was found in any of the organs. In the heart blood was found the angular organism which multiplied after incubation in pipetts," and in a later

¹ WATSON-JONES.

² *Aspergillus, Rhizopus nigricans, or Oidia.* (See account of Salgon rice.)

³ Italics are mine.

series: "The post mortem appearances showed *hyperemia and distension* of the gastro-intestinal tract, in some cases marked petechiae in the small intestine." . . . "I have noticed this disease as far back as 1898 in pigeons at the time of an epidemic of beriberi in the Meiktila jail. I have noticed it in Rangoon amongst other fowls, and I am told that epidemics amongst fowls occur, the symptoms of which appear to be exactly as I have described. I do not, however, think that the disease in fowls is the cause of the disease in man. I am quite sure in my own mind that the disease develops from drinking rice water liquor or by feeding on diseased rice, and local statistics and observations on the habits of the coolie classes chiefly affected by this disease entirely bear out this opinion." . . . "The manufacture of this drink is always from rice which has been damaged by water in taking paddy¹ in boats to the mills in Rangoon; such rice is not accepted at the mills, and is sold off by the owners at a cheap rate to Chinamen; the Chinamen's only use for this damaged paddy can be for the manufacture of rice water liquor and the feeding of cattle." "All the year round there are never less than fifty cases of beriberi under treatment in the General Hospital, Rangoon, and although these cases are scattered throughout the hospital, there has not been an authentic case of infection in the hospital." . . . "Some in-patients have developed beriberi in hospital, but these had been in the habit of absconding to the bazar, or had not been long admitted." . . . "I think this is sufficient to show the noninfectious nature of the disease. These are points all in favor of the rice liquor origin of beriberi, though I admit this is not invariably the cause. There are many instances in which even the rice theory cannot adequately explain the origin of the disease. If this disease grows in damp rice, might it not also grow between the starch granules of other cereals? and it would be difficult to exclude any kind of cereal from the causation of the disease in any place."

I have quoted at length from Captain Rost's reports in order to show what appear as contradictory and inconsistent deductions. In the first place his studies have been confined apparently to the aspect of the disease as it appears in a series of cases in Rangoon. His investigations seem to have been directed largely in studying the ætiology and pathology of a disease common to fowls. He has carefully cultivated a strain of pathogenic organisms which he found incidentally to be present in rice undergoing fermentation, and in the blood of persons addicted to the use of such rice. Is it not possible that in a community in which a uniformity of habit and custom prevails that any epidemic disease prevalent will present concomitant yet irrelevant symptoms?

F. Noc, in a recent report of an epidemic of beriberi in Choquin, found such a very large percentage of the cases presenting the ova of *Uncinaria americana* that he is fascinated by the discovery and hastens to inform us that *Uncinaria americana* is a prominent factor in the causation of the disease.

Then, too, with commendable skill, Rost has preserved his bacteriological chain, producing and reproducing a disease in fowls, injecting blood from beriberi patients into fowls, and that from injected fowls into other fowls; injecting rice water liquor into fowls, always in the endeavor to develop the bacterium under observation. Yet in the fact of all this presumptive evidence, he concludes that the disease in fowls will not cause the disease in man, thus

reversing the well established Koch's law, and then decides that the disease is certainly not infectious, but is caused by drinking rice water liquor, then agreeing at the last that rice liquor is not necessarily the only cause.

By the analogy in Noc's cases, may it not be possible that the Rangoon coolies, being drinkers, all of a very impure alcoholic drink, suffered from a sort of composite alcoholism-maidismus-beriberi? There is such a want of uniformity in the pathology of the disease found in the injected fowls, and such a divergence from the findings in true beriberi, at least as I have seen it, that I have no hesitation in expressing a doubt of the diagnostic deductions.

These chickens show the clinical history and pathology of a generally prevailing disease among the domestic fowls of the Philippines during the rainy season. We are all familiar with the disease in the Islands, and even the layman attributes it to feeding on waste palay.² This disease is undoubtedly a form of maidismus.

Rost admits a few cases having arisen in hospital, but charges each to patients who have "absconded" to the bazar for rice liquor.

Theoretically, no case should arise in hospital. If the sanitary regulations of the wards were carried out upon a *surgical asepsis* basis, a case could not originate. There should be no more fear of infection from the association of beriberi patients with other patients in the ward than from infection from tetanus or glanders under like conditions; not nearly so much as from erysipelas.

In further support of this, Cunningham, in his Christmas Island experience, states that: "Another instance which may be quoted is that although many surgical cases put in beriberi wards owing to insufficient accommodations, contracted beriberi, the Chinese dressers, usually two in number, who worked in the majority of cases for months at the hospital and who slept in the beriberi wards, in no instance contracted beriberi; but they always had their own beds and no patients slept on them." The inference is plain. After a careful and unbiased survey of the researches of the various recent investigators, each in his particular field, among different races of people influenced undoubtedly by environment, a materially different fauna and flora, I found myself wondering if it could not be possible after all that beriberi may be a sort of generic disease (pardon the solecism) conformable to racial idiosyncrasy, dependable for its exciting cause upon the modified fauna or flora indigenous to the country?

This may not be wholly empirical speculation. The extensive labors of conscientious investigators in different fields are productive of such divergent or contradictory results, while working along parallel lines that one is compelled to speculate as to the cause.

Many of those who replied to my communication were men of years of tropical service and had vast clinical experience with beriberi in particular. Many endemic areas on the southeast coast of Asia as well as in various parts of the Indian Archipelago furnish abundant clinical material for the investigator.

Perhaps nowhere else in the world are such num-

¹ Paddy is unthreshed rice.

² Unthreshed rice.

bers of these cases to be encountered as among the coolie miners on Christmas Island near Singapore. While I am strongly inclined to believe the clinical picture of the disease as seen in different countries and among different races differs in some features from its prototype elsewhere, because of an ill defined dominating extraneous influence, yet the specific exciting cause is always present, and the lesion resulting from the activity of this agent, while perhaps in some case not the most apparent, is nevertheless always present in all cases in whatever race or country.

Thus Rost and Holst in Rangoon after three years of effort, established a theory not, it must be confessed, without some credible support. Wright (8) and Dudgeon in Kuala Lumpur make a different finding. Durham and Cunningham, with exceptional clinical facilities at Christmas Island, entertain a different view. Noc in China, the Japanese much further north, while Herzog in Manila, add to the confusion, to which may be added the arsenical complication in Rost's cases.

(To be continued.)

EOSINOPHILIA AND TRICHINIASIS. A STUDY OF CASES.

BY REUBEN OTTENBERG, A. M., M. D.,
New York.

During the three months between November 1, 1905, and February 1, 1906, there occurred in the service of Dr. I. Adler at the German Hospital, a group of cases affording an excellent opportunity for the observation of eosinophilia and its relation to trichiniasis. Eight of these cases will be briefly presented and discussed. The first two of the series occurred in husband and wife who were brought to the hospital together, the course of the disease in both cases being remarkably similar.

CASE I.—(Catalogue No. 3127/05.) H. B., male, thirty-four years old, German, married, broker, admitted November 3, 1905. Patient had malaria three years ago; otherwise his previous history had no reference to his present illness; he ate ham and sausage frequently. Six days ago he became ill suddenly with a severe chill, high fever, headache, and pains in all his bones; vomited seven or eight times during the first two days. Bowels were regular; no abdominal pains. He continued to have frequent chills, sweats, and high fever—103° F. on the third day and 103.5° F. on the fourth, according to the family physician. There was much prostration. On the second day a puffy swelling of the face and eyelids appeared, and soon afterward there was a scattered papular eruption on the right side of the face, which, however, did not itch. There was no oedema of the legs. He had a slight, dry, painless cough since the onset; slight hoarseness; no dyspnoea.

Physical Examination.—The important points were herpes zoster on right cheek, lower eyelid and side of nose; reddish brown, discrete, maculo papular spots on the abdomen, chest, back, and to a less extent, on all the extremities; harsh breathing with a few crepitant râles at the bases of both lungs; slight enlargement of the spleen; great tenderness of muscles of the calf and thigh; trapezius and muscles of the arm and forearm tender and doughy; acute pain in the muscles on motion.

BLOOD EXAMINATION			
	Nov. 4th.	Nov. 6th.	Nov. 20th
Hæmoglobin	85 %	....	....
Red blood cells	3,252,000	....	....
Leucocytes	5,200	....	8,500

Polynuclears	63	44 %	77.5 %
Lymphocytes	13	22 %	13.0 %
Large mononuclears	0.0	6	0.5 %
Eosinophiles	20	28	9.0 %
Basophiles	0.0	0.0 %	0.0 %

The Widal reaction was negative on repeated examination, both for typhoid and paratyphoid bacilli. Examination of the urine was also negative; no increase in indol or skatol; diazo reaction negative. Repeated examinations were made of the fæces, but neither parasites nor ova were found.

The temperature remained high (about 103° F.) with marked remissions, for four days; after a week's stay in the hospital it gradually came down to normal, so that the total duration of fever was twelve days. There were repeated profuse sweats with the remissions in temperature, and on the third day the patient had a chill.

A small piece of muscle was excised from one of the painful areas in the gastrocnemius and examined in the fresh condition, but no trichinæ were seen. Unfortunately no sections were made. Experience with the later cases showed conclusively that the method of sectioning and staining is the correct one, and that if this is not done the presence of the parasite is very likely to be overlooked.

CASE II.—(Catalogue No. 3128/05.) M. B., wife of preceding patient, thirty-four years old, German, admitted November 3, 1905. With the exception of malaria three years ago, the patient's previous history was of no significance. This patient also ate ham and sausage frequently and had done so several times within the past two weeks. Eight days ago she noticed puffiness about her eyes and swelling of the face and legs; this diminished greatly. Six days before admission to the hospital she abruptly became ill with pains in the back and limbs, headache, insomnia, frequent chills, high fever, and great prostration. At the time of admission most of her symptoms had diminished in severity, her chief complaint being weakness.

The physical examination showed all the organs to be normal except the spleen, which was somewhat enlarged.

BLOOD EXAMINATION.			
	Nov. 4th.	Nov. 7th.	Nov. 21st.
Hæmoglobin	45.0 %	....	....
Red blood cells	3,252,000	....	....
Leucocytes	5,900	12,800	....
Polynuclears .....	....	31.5 %	49.5 %
Lymphocytes .....	....	24.5 %	31.5 %
Mononuclears .....	....	10.0 %	0.5 %
Eosinophiles .....	....	33.5 %	14.0 %
Basophiles .....	....	0.0 %	2.0 %
Transitionals .....	....	0.5 %	2.5 %

Widal reactions for typhoid and paratyphoid bacilli and search for malaria plasmodia were all negative. The urine was normal and the diazo reaction negative throughout the course of the disease. The stools were examined for parasites several times with negative result.

The temperature was high (104.4° to 104.8°), with daily remissions of about 2° for three days, after which in the following four days it gradually came down to normal. The patient had a chill the first day and had many profuse sweats. She did not complain of muscular pains at any time and was discharged cured December 21st. There was no muscle excision.

CASE III.—(Catalogue No. 3314/05.)—F. J., age twenty-three years, German, single, upholsterer, admitted November 21, 1905. Two and a half years ago he was in a hospital for some sort of fever, and while there passed an intestinal worm. Often ate ham. For the past two weeks he had not been feeling as healthy and vigorous as usual, and had occasional headache and much lassitude. Three days before admission he began to feel really ill with pains all over the body and frontal headache. He had also fever, but no chills, and felt much prostrated.

Physical Examination: Patient looked sick. There

was a marked exophthalmos and a suggestion of puffiness about the eyes, no enlargement of the thyroid; pulse not rapid. Lungs clear. Spleen was just barely palpable, and on percussion extended from the ninth rib at the posterior axillary line to the free border of the ribs. The reflexes were normal.

	Nov. 27	Nov. 28	Dec. 4	Dec. 11
Temp., 37° C.	38.5	38.5	38.5	38.5
Red blood cells	8,950	11,100	11,100	11,100
Leucocytes	52.0	11.1	11.1	11.1
Mononuclears	19.0	18.6	18.6	18.6
Eosinophiles	7.3	1.1	2.0	2.0
Basophiles	17.6	1.8	27.0	27.0
Transitionals	0.6	0.6	0.6	0.6
Platelets	7.0	1.8	1.0	2.5

The Widal reaction was negative. Malaria plasmodia were searched for without success. The urine was normal; diazo reaction negative; no increase in indol or skatol. The stools were repeatedly examined for parasites and ova, but with entirely negative result.

For a week the temperature was high, reaching about 104° F. each day, with decided daily remissions of from 4° to 6°. There were many profuse sweats. In the second week the temperature gradually declined, and in the beginning of the third week reached normal. On the third day of the attack an eruption, consisting of a few reddish maculopapular spots, appeared on the trunk.

The patient was discharged cured on December 8th. He returned for examination, and a blood count was made December 11th. At this time a piece of muscle excised from the gastrocnemius showed no trichinae, but a peculiar interstitial myositis, consisting of small scattered areas of intense infiltration of round cells between the muscle fibres, was noted.

CASE IV.—(Catalogue No. 3413/05).—E. W., female, twenty-four years of age, Hungarian, single, servant, admitted December 3, 1905. The previous history was irrelevant. The patient had eaten smoked ham within three weeks and fried pork and sausage within two weeks. One week before admission to the hospital she was abruptly taken ill with severe pains in the trunk and all the extremities, fever, weakness, and headache. The upper half of her face became swollen, and remained so until a day before she entered the hospital. She had moderate diarrhoea and a sensation of discomfort in the abdomen. On admission the pains in the extremities were so severe that the patient could scarcely move.

Physical Examination: Patient looked apathetic and ill. Examination of the internal organs was negative. Spleen was not palpable. Patellar reflexes were absent. The trapezius and muscles of the back, thighs, and calves were extremely tender, so that the patient remained absolutely quiet. These muscles felt indurated.

	Dec. 3d.	Dec. 4th.	Dec. 5th.	Dec. 7th.	Dec. 8th.	Dec. 10th.	Dec. 16th.
Red blood cells	3,700,000	11,150	11,700	9,800	6,250	8,800	
Leucocytes	6,000	11,150	11,700	9,800	6,250	8,800	
Mononuclears	80.0	68.0	66.0	73.0	69.0	77.5	68.5
Eosinophiles	73.0	20.5	7.5	7.5	17.0	10.5	20.0
Basophiles	20.0	0.0	5.0	1.5	0.5	0.5	3.0
Transitionals	0.0	11.5	26.0	18.0	13.0	10.0	7.5
Platelets	1.0	0.0	5.0	0.0	0.0	0.0	1.0
Transitionals	0.0	0.0	0.0	0.0	0.5	1.5	1.0

Widal reactions for typhoid and paratyphoid bacilli were negative throughout the course of the disease. There were no malarial plasmodia. The urine showed a positive diazo reaction during the first week; there was a faint trace of albumin and there were also occasional casts. After repeated examinations of the stools one undoubted egg of the *Trichocephalus dispar* was found.

For a week the temperature remained high, reaching between 104° and 105° F. every day, but with a sharp

daily drop of 2° to 4°. In the course of the illness it then came down to 101° F., and the patient continued to have a temperature of 101° F. daily for three weeks more. During the period of high fever there were frequent profuse sweats, and the prostration was very great. In this case the muscular pains and tenderness were most severe and only subsided after about two weeks. Convalescence was prolonged to January 15, 1906.

A small piece of muscle was excised from the right gastrocnemius on December 29th, after nearly all the symptoms had disappeared. No trichinae were found, but there was a peculiar infiltration which will be more fully described in the sequel.

CASE V.—(Catalogue No. 3452/05).—M. S., female, age thirty-four years, Austrian, single, servant, admitted December 6, 1905. The family and previous history may be omitted. Two weeks before being admitted to the hospital she became ill with pains in the extremities, back, and head. She had fever and great prostration, sweats, chilly and hot sensations, and insomnia. Her face, hands, and feet became much swollen and remained so until two or three days before coming to the hospital. There were anorexia and constipation. Urination normal. No cough or dyspnea. She had two slight attacks of epistaxis.

At the time of admission, her symptoms, except the prostration, had diminished greatly, and she had only slight pains in the back and legs. The patellar reflexes were present, and there was tenderness on pressure over the calf muscles. The remainder of the physical examination was negative as far as the present illness was concerned. There were signs of an old apex lesion in the left lung.

	Dec. 6	Dec. 12th
Hemoglobin	75.0	75.0
Red blood cells	4,944,000	8,700
Leucocytes	17,400	8,700
Mononuclears	48.0	0.0
Eosinophiles	2.7	26.0
Basophiles	1.0	0.5
Transitionals	28.5	7.0
Platelets	1.0	0.0
Transitionals	0.0	0.0

The urine showed a faint trace of albumin and occasionally a few hyaline and finely granular casts. The diazo reaction was positive once, on the day after admission.

No parasites could be found in the stools after repeated examinations. The temperature was 100.4° F. on admission, 100° F. the two days following, and thereafter between 100° F. and 99° F. The acute febrile period of the infection was evidently just ending when the patient came to the hospital. Her symptoms gradually disappeared, and on December 30th she was discharged from the ward.

	Dec. 3d.	Dec. 4th.	Dec. 5th.	Dec. 7th.	Dec. 8th.	Dec. 10th.	Dec. 16th.
Red blood cells	3,700,000	11,150	11,700	9,800	6,250	8,800	
Leucocytes	6,000	11,150	11,700	9,800	6,250	8,800	
Mononuclears	80.0	68.0	66.0	73.0	69.0	77.5	68.5
Eosinophiles	73.0	20.5	7.5	7.5	17.0	10.5	20.0
Basophiles	20.0	0.0	5.0	1.5	0.5	0.5	3.0
Transitionals	0.0	11.5	26.0	18.0	13.0	10.0	7.5
Platelets	1.0	0.0	5.0	0.0	0.0	0.0	1.0
Transitionals	0.0	0.0	0.0	0.0	0.5	1.5	1.0

A small piece of muscle was excised on December 22nd from the right gastrocnemius, which on sectioning showed newly encysted trichinae.

CASE VI.—(Catalogue No. 3483/05).—E. D., male, age thirty-three years, German, single, waiter, admitted December 9, 1905. Previous history and habits were irrelevant except that patient often ate ham and sausage. Eleven days before admission to the hospital he overate and the following day became sick with very severe headache, prostration, and great swelling around

the eyes. There was aching in the legs and arms. His tongue was thickly coated, and he had a foul taste in the mouth. There was no vomiting or abdominal pain; bowels were regular. The headache had persisted, though it grew less intense. The swelling around the eyes subsided five days before admission. For a week before entering the hospital he felt feverish, and five days before had a slight but spontaneous nose-bleed.

The examination of the internal organs at the time of admission showed practically normal conditions. The spleen was not enlarged, and the lungs were clear. There was muscular tenderness in thighs and calves. Patellar reflexes were present.

BLOOD EXAMINATION			
	Dec. 10th.	Dec. 17th.	Dec. 26th.
Hæmaglobin	80.0 %	.....	.....
Red blood cells	4,360,000	.....	.....
Leucocytes	8,850	10,700	12,900
Polynuclears	56.0 %	54.0 %	70.6 %
Lymphocytes	17.5	22.5	23.2
Mononuclears	3.5	3.0	4.0
Eosinophiles	21.5 %	17.0 %	0.7 %
Basophiles	0.5 %	1.5 %	0.5 %
Transitionals	1.0 %	2.0 %	1.0 %

The urine was practically normal; diazo reaction negative throughout the disease. No evidences of intestinal parasites were observed in repeated examinations of the fæces.

The temperature on day of admission, December 9th, reached 104° F. The daily maximum gradually declined during the first week to about 100.5° F., and remained near this point during the second week. In the third week (December 24th) the temperature began to rise, and on December 26th reached 103° F. At the same time all the symptoms and signs of a left sided pleurisy with effusion appeared. This ran a course of six days and then subsided. The patient was discharged cured January 6, 1906. It was during the height of this complication that the marked diminution in the percentage of eosinophile leucocytes occurred. (This is in accordance with the general experience that in acute infections and inflammations the eosinophiles are diminished.)

Encysted trichinæ were found in a piece of muscle excised from the right gastrocnemius on December 10th. The sections also showed a more or less characteristic degeneration of muscle fibres and leucocyte infiltration.

CASE VII.—(Catalogue No. 3573/06.)—H. H., age fourteen years, schoolboy, born in America of German parents, admitted December 18, 1905. Previous history was unimportant. The patient had eaten ham frequently during the two weeks before his illness. Nine days before being admitted to the hospital he became ill with very severe pains in the arms and legs, the pain being especially severe in the biceps humeri and the calf muscles; the eyeballs were also painful on motion. After lasting four or five days the pains disappeared. On the second day of the attack he began to feel much prostrated, and on the third day had a high fever, 104° F., according to the family physician. The temperature since then gradually declined. For the first three days there was considerable œdema around the eyes. On the second day he had a slight spontaneous nosebleed, and since then occasionally hacked up from his throat mucus streaked with bright red blood. He frequently felt nauseated, but had not vomited; bowels were constipated.

The physical examination was practically negative, except for a few tender areas in the calves and thighs. Patellar reflexes normal. The throat and lungs showed no evidence of disease, and the spleen was not enlarged. The stools and urine were normal; diazo reaction was negative. The sputum contained several little patches of blood on a few occasions, but was not otherwise remarkable; there were no tubercle bacilli.

BLOOD EXAMINATION.

	Dec. 18th.
Hæmaglobin	85.0 %
Red blood cells	4,760,000
Leucocytes	19,900
Polynuclears	41.0 %
Lymphocytes	22.5
Mononuclears	3.0
Eosinophiles	30.0 %
Basophiles	0.0
Transitionals	0.5 %

Widal reaction was negative.

The patient was kept under observation one week. During this time the temperature remained approximately normal, and the few symptoms still present at the time of entrance into hospital subsided. Encysted trichinæ and the characteristic myositis were seen in muscle fibres excised from the calf.

CASE VIII.—(Catalogue No. 62/1906.)—F. K., fifty-two years old, German, widower, butcher, admitted January 20, 1906. As it had no bearing on the matter the previous history may be omitted. The patient frequently ate uncooked ham. Three weeks before coming to the hospital he began to suffer with a sharp lumbar pain and with great stiffness in the lumbar region; this continued up to the time of admission, and for two days he also had severe intermittent pains in the right calf and in the left thigh and calf. His legs felt numb and stiff, but he had been able to walk. For three days his eyes had been congested and his eyelids inflamed. He had been very hoarse, and had a slight dry cough. Digestion was good; bowels constipated. No fever or chills.

Physical Examination: The eyelids were red, conjunctivæ injected. There was tenderness on pressure over the muscles of the lumbar region, thighs and calves, and these muscles offered an indefinite, doughy resistance on palpation. There was slight œdema over the tibia and ankles. Reflexes were normal. The spleen was not enlarged, and the physical examination was otherwise negative. The urine showed only a faint trace of albumin and a few hyaline casts. The diazo reaction was negative. The stools were carefully examined, but no parasites were found.

BLOOD EXAMINATION.

	Jan. 10th.	Jan. 31st.
Leucocytes	14,250	10,500
Polynuclears	35.5 %	55.0 %
Lymphocytes	30.0 %	20.0 %
Mononuclears	1.0 %	1.0
Eosinophiles	32.0	23.5 %
Basophiles	1.0	0.5 %
Transitionals	0.5 %	0.0 %

During his stay in the hospital the patient had no fever, and complained only of pain and stiffness in the lower extremities. He was discharged cured February 8, 1906.

A small piece of muscle excised from the thigh failed on section to show trichinæ, but did show areas of infiltration and muscle fibre degeneration.

A consideration of these cases brings up several interesting questions of which the first in importance is the question of diagnosis. Although the presence of trichinæ was only demonstrated in the muscle of three of the cases, the eight cases were all regarded at the time as instances of trichiniasis, and certainly the evidence from a purely clinical standpoint is very striking.

High percentages of eosinophile leucocytes in the circulating blood are not common. In the wards in which the cases cited were under observation there had been no case with marked eosinophilia for many months. The combination of eosinophilia, however, with the other characteristic symptoms, viz., œdema of the face, which occurred in six of the eight cases, muscular pains, present in all, though only very pronounced in two, and fever, present in seven cases, makes a clinical picture which could hardly be presented by any disease other than trichiniasis.

A more or less marked increase in the eosinophile cells may occur in the following conditions (Karl Meyer): (1) Many intestinal parasites; (2) many skin diseases; (3) bronchial asthma; (4) echinococcus cysts; (5) convalescence from acute articular rheumatism (only occasionally; highest percentage reported 13.8 per cent. eosinophiles, Türk); (6) convalescence from malaria (only occasionally moderate eosinophilia); (7) scarlet fever (second and third weeks); (8) gonorrhoea (slight eosinophilia); (9) ovarian disease (rarely); (10) myelogenous leucæmia; (11) tumors of bone marrow; (12) tuberculin injections (Zappert).

The only one of these causes of increased eosinophile cells which might, undetected, have been at work in the cases cited, is intestinal parasitism. To quote McCrea:¹ "With the possible exception of the intestinal parasites a differential diagnosis as against trichiniasis presents no difficulty." In all of the cases the stools were repeatedly searched for parasites or their ova and in only one (Case IV) was an ovum (*Trichocephalus dispar*) ever detected.

Assuming that the maximum normal proportion of eosinophile cells is about 6 per cent. of the leucocytes, the increase in the present cases is well marked, the highest count in each case generally reaching about 30 per cent. It is interesting to note that the lowest counts were in Cases I, IV, and VI, which were the three severest infections, and conversely, in general the highest percentage occurred in the mild Cases V (37 per cent.), VII (30 per cent.), and VIII (32 per cent.). Regularly there was a decrease during the convalescence. The highest leucocyte counts also were in the mildest three; in general, the total number of leucocytes was only moderately increased.

Before turning to the individual symptoms it might be well to consider the general deductions to be made from the histories given. With one exception (Case IV) the infection in all of the present cases was relatively mild; no case was fatal. Of the eight cases, six presented a general appearance strongly suggestive of typhoid fever. One patient (Case VIII) had no fever, and the case looked at first glance like an ordinary attack of muscular rheumatism. Only one patient (Case V) entered with the diagnosis of trichiniasis, the diagnosis in every case except this being first suggested by the blood examination.

The clinical resemblance of mild cases of trichiniasis to typhoid fever has often been discussed, and is really very striking. Thus, Gould,² considering this point and summarizing twenty-one cases of trichiniasis, notes besides the fever, malaise, and gastrointestinal disturbance, the following symptoms common in typhoid, as occurring in the cases of trichiniasis, viz., palpable spleen in six cases, rose spots in five, headache in seven, epistaxis in three, and the diazo reaction in urine in five cases. Practically, in many cases the diagnosis rests on the blood examination, and since Brown's discovery in 1898, the opinion has been gradually gaining ground that a marked increase in the eosinophile cells of the blood is the most important diagnostic symptom.

Of all the clinical symptoms there was perhaps none more constant than œdema of the face, which

occurred in six of the eight cases, and in the other two there was at the time of admission congestion of the conjunctivæ and eyelids, although no more than often occurs in other fevers. In all the cases this œdema occurred in the early stage of the disease, and was of relatively short duration so that at the time of admission to the hospital it was already disappearing. In one case (II) the œdema was not only the first symptom to appear, but existed for two days before any other symptom occurred.

The muscular symptoms were present in every case, but only in two (IV and VIII) were they very pronounced. The pectorals and deltoid muscles did not seem to be involved as often as in other recorded cases. The muscles of the eye were distinctly involved in Case VII. The hoarseness, which was a marked symptom in Cases VII and VIII, was, we believe, due to trichinæ in the laryngeal muscles.

Some of the other symptoms are of particular interest because of their occurrence in typhoid fever. The spleen was palpable in three of the cases, but in two of these there was a history of malaria three years previously. An eruption of reddish macules on the trunk was noted in two of the cases (I and III). A few of these spots continued to appear on successive days, and in every way the eruption closely resembled that of typhoid. Nosebleed was a symptom in three of the cases (V, VI, and VII). The initial bronchitis of Case I is likewise of interest because of the frequency of this symptom in typhoid. A positive diazo reaction was obtained in the urine of two of the cases (IV and V).

The fever did not follow any definite type. The daily remissions were more decided than those in the early weeks of typhoid. The duration of the fever varied from one to three weeks.

It was impossible in any case either to make out a distinct incubation period or to divide the symptoms into a gastrointestinal and muscular period. In only two cases (I and IV) did pronounced gastrointestinal symptoms appear.

The fact that most of the patients ate pork frequently was only brought out in each case after the diagnosis of trichiniasis had been thought of. None of the patients could remember any particular meal which was the probable source of infection. On this account, and because the patients came from widely scattered parts of the city, no attempt was made to trace the original infected meat. All the patients were Germans, with the exception of one, the child of German parents, and another, of Hungarian birth.

The question naturally arises: Why was the diagnosis confirmed by the finding of trichinæ in the muscle in only three of the eight cases?

The first two cases must be disregarded, since in Case II no muscle was excised at all, and in Case I the examination was unfortunately incomplete, as it consisted only of the microscopical inspection of a small piece of muscle in the fresh condition. In the remaining six cases a careful examination was made, and in half of them the parasite was found. The reason why it was not found in the other cases was probably that the wrong piece of muscle was chosen. Autopsy descriptions show that the encysted larvæ do not occur close together in the affected muscles, but that they are rather widely scattered. Thus a small incision made in a muscle known to have been affected in order to remove fibres for diagnosis may

¹ Medical Record, or Journal of the Medical Sciences, July, 1902.

² Journal of Medicine, 3, p. 217.

be regarded as a "random shot," unless the exact spot involved can be located. In the three cases in which the pathological diagnosis failed the muscle incisions were postponed out of consideration for the patient, and at the late stage when the operation was performed most of the tenderness had disappeared, making it difficult to determine the precise areas which had been affected.

There is another point of considerable interest which leads to the belief that a more extensive excision of muscle must have demonstrated trichinæ in these cases. In those preparations in which trichinæ were found the organism was surrounded by a relatively wide zone of muscular tissue infiltrated by round cells. (The attempt to stain so as to bring out eosinophile cells in the tissues was not successful. See Brown, *Journal of Experimental Medicine*, 1898.) This infiltration was characteristic and different from that occurring in any other form of myositis in that it was not diffused or interstitial, but was seen in limited, definite spots scattered throughout the muscle; some of these spots surrounded the embryonic trichinæ, while in other spots no trichinæ were to be seen. In those preparations in which the parasite was not found, exactly similar areas of infiltration were observed, and it appears highly probable that if the piece of muscle had been cut so as to include the centre of one of these spheres of infiltration, the parasite would have been found in these cases, too.

Although the present group of cases occurring in close succession seems to indicate that at that time the disease was more prevalent than usual, there is little doubt that the frequency of human trichiniasis, especially of sporadic cases,³ has been generally underestimated. It is certainly a fairly common infection, but probably in very many of the cases the symptoms are so mild as to be overlooked.

Most of the autopsy statistics quoted to show the frequency of trichinæ in human beings are worthless, as no systematic search or microscopical examinations were made. The most reliable figures are those of H. U. Williams,⁴ of Buffalo. He examined carefully, macroscopically and microscopically, 505 cadavers selected at random, none of which died of trichiniasis, and he found old encysted trichinæ in the muscles of twenty-seven cases, or 5.34 per cent. About one hour was spent in examining each cadaver, and in some of the cases the infection was so slight that only after very careful search at autopsy could one or two trichinæ be found. In only two of the twenty-seven cases were the cysts recognized by the unaided eye.

Clinically, too, since the characteristic blood picture has been available in diagnosis, the number of cases reported has been steadily increasing. There is no doubt that where no blood examination is made, many, if not all, particularly of the mild cases of trichiniasis, are mistaken for other affections, notably typhoid fever, intestinal intoxications, muscular rheumatism, and influenza. Indeed, of the eight cases here recorded, six patients were admitted to the hospital as probable cases of typhoid fever, one as a case of muscular rheumatism (VIII) and only one (Case V) was sent in with a suspicion of trichiniasis.

THE POSSIBLE SIGNIFICANCE OF THE NEW PYLORIC AND DUODENAL LESION OBSERVED IN GUINEA PIGS INOCULATED SUBCUTANEOUSLY WITH DIPHTHERIA TOXINE.

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Rosenau and Anderson (1) in their work of standardizing the various diphtheria antitoxines manufactured within the United States, have observed a very constant lesion of the stomach and duodenum; heretofore unnoted, in young guinea pigs that have been inoculated subcutaneously with diphtheria toxine in doses sufficient to cause the death of the animal in twenty-four to seventy-two hours. This lesion consists of sharply defined areas of congestion, hæmorrhage or ulceration involving the pyloric end of the stomach and sometimes the duodenum to the extent of one half inch. Seven lithographic plates with eleven figures showing the gross and minute morbid anatomy, accompany their report.

These authors point out the possible significance of newly observed lesion in the general study of the induction of artificial gastric ulcer, simulating the so called peptic ulcer; and note that Turck (2) succeeded in inducing such ulcers in the stomach and duodenum of dogs by feeding *Bacillus coli communis*; that Turck (3) also endeavored to induce gastric ulcer in dogs by injecting diphtheria toxine directly into the wall of the stomach, but succeeded only in producing punctate hæmorrhages in the duodenum or local necroses near the pylorus; and later, after injecting diphtheria toxine into the mesenteric vessels induced only necroses in the duodenum.

A comparison of the plates and descriptions of Turck with those of Rosenau and Anderson, shows the distinct character of the respective lesions; then, too, the latter authors note an equally constant, concomitant engorgement and bright red color of the adrenals, while Turck makes no mention of any abnormal changes in those organs, but does note certain parenchymatous changes of the kidney, as cloudy swelling and granular degeneration of the tubular epithelium, and swelling and cloudiness of the glomeruli. There is still another equally constant, concomitant lesion reported by Rosenau and Anderson to which I desire to direct particular attention, namely, "local œdema, necrosis, and hæmorrhagic reaction at the site of inoculation."

There is a lesion of the duodenum in man that has long been observed at autopsy, and which I believe should be brought forward here in connection with these highly significant observations of Rosenau and Anderson; I refer to the duodenal ulcer of man following rapidly fatal superficial burns of the skin.

In the guinea pig, does not the intense, acute inflammation of the subcutaneous connective tissue with its resultant hyperplasia, œdema, and sometimes necrosis of the skin, involving from 64 to 100 c.cm. of dermal tissue surrounding the site of inoculation, constitute a skin lesion analogous to skin burns of the first or second degree? There is probably impairment if not total arrest of the skin functions, absorption, excretion, respiration, heat radiation, sensation, and protection in the area involved. Just which one, or combination of arrested functions is culpable in inducing duodenal ulcer, and later weath, has not been determined.

³Bovalrd, Sporadic Trichiniasis. *New York Medical Journal*, March 3, 1906.

⁴Williams, *Journal of Medical Research*, July, 1901.

Charles Russell Bardeen's valuable review of the pathology of superficial burns in man gives practically all that had been done in experimental research in the interference with skin functions; the following table given by Schjerning is extracted from Bardeen's review:

	Hyperemia of head.	Hyperemia of lungs.	Nephritis.	Prothrombin.	Hyperemia of joints.	Phlebitis.	Ulcer of digestive tract.	Mononucleosis.
Deaths within 48 hours.	60.0	33.7	20.0	7.5	40.0	11.1	0.0	4.5
Deaths after 48 hours.	30.0	22.7	30.9	39.7	6.6	27.3	19.5	14.7
All cases, accord- ing to the tabu- lated cases.	40.0	36.5	28.2	27.0	22.2	18.8	12.4	10.5

While this table shows intestinal hyperæmia in 40 per cent. of those cases of man dying within forty-eight hours of superficial burns, with no induction of duodenal ulcer, and duodenal ulcer in 19.5 per cent. of those dying after forty-eight hours, it is reasonable to infer death intervened in a large percentage before ulceration could occur.

With reference to the cause of ulceration in the duodenum it is noted that Welti found thrombi in the walls of the stomach and intestines at autopsy as the result of rapidly fatal superficial burns; Silbermann confirmed Welti's findings in the living, experimentally burned animals, and ascribed as the direct cause of the thrombosis the increase of the third corpuscular element; Salvioli noted a decrease of the platelets and explained it on the hypothesis of their consumption in the formation of thrombi; Markusfeld and Steinhaus placed the ear of a rabbit in water raised to the temperature of 56° to 66° C. and noted death only when the tourniquet was loosened and free communication was restored between the ear and the general circulation. It is pertinent to note here the burned surface of the rabbit's ear was not as large relatively as was the skin lesion at the site of inoculation in the guinea pig in the observations of Rosenau and Anderson.

It would be of interest to note if the new pyloric and duodenal lesion observed by them can be induced in the guinea pig by experimental interference with functions of the skin.

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MODERN MEDICINE IN CHINA.*

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When one leaves the progressive little kingdom of Japan and crosses the Yellow Sea to that land of mists and myths, Far Cathay, it is to leave the nineteenth and twentieth centuries to step ashore in the dark ages. In no one department of knowledge is

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this more true than in medicine. The Chinese have no science or generally practised principles of that art. We have here a country of at least two thousand years growth, with history and mechanical arts progressing from that period, but during the same time there has not been one step in the divine art of healing. However, it is not my intention to give you history which may be found in any good library; I am sure it is your desire to hear of my personal experiences as a physician during the eleven years since the cutting of the cord by our revered Alma Mater.

In the beginning it is but just to state that nearly all the modern medicine practiced today in China is by medical missionaries sent out as representatives of various religious bodies in America and Europe. There are a few hundreds of native graduates of schools opened by these medical missionaries. None of these native physicians undertake surgery beyond minor operations unless they are serving in missionary hospitals. Thus you see the labor of upholding the principles for which we stand devolves upon one or two hundred white men and women.

One word of ancient medicine and the native herb doctor. You have all heard of his formidable prescriptions of tiger's bones, bear's gall, deer's horn, lizards, etc. The more filthy they are the better the medicine. All are given because they are "good for" the disease. In my dealings with patients they disclose the quack's classification of diseases and remedies by inquiring whether the ailment is cold or fever. The native doctor needs no study, no examination or other qualification. He has often failed in other business and has taken up drugs as a last resort. Many of the governmental literary graduates dabble in medicine for pecuniary profit. Should the doctor have had ancestors who followed the same calling he will gain the greater confidence of his countrymen. Alas, this confidence is not due to any belief in heredity, but because the son will probably be in possession of many prescription books of his progenitors. His fees vary from one hundred cash, or five cents, to a chicken or a horse. I have seen herb doctor and parent haggle over a fee while precious moments of life were ebbing from the child. Putting on a solemn and "never made a mistake" air he feels three pulses in each wrist. He thus examines the six regions of the body and no questions or other examinations are necessary. Many apothecaries employ a doctor to sit in the shop and see patients who buy their nauseous compounds before going out.

I have gone to such length to describe these doctors and their ways in order that you may in part imagine the difficulties which we encounter in examining ignorant and superstitious people accustomed to the native quack. Take for instance a woman's hand and wrist presented from behind a curtain for diagnosis of and relief from impacted shoulder at the vaginal outlet.

In our practice of medicine and surgery we must always remain pupils of those who have time for original research. The medical man connected with mission work is overwhelmed with the mass of suffering humanity. Serious cases come thick and fast allowing no time for detailed study of the individual or his disease. To alleviate gross suffering so

as to permit of but a fair degree of health is in many cases the limit to which treatment is carried. Patients cannot be followed up except where they return to the hospital. The territory of one physician extends to a circle of often two hundred miles diameter, within which there are no brother physicians to share burdens and join in consultation. There are no means of comparison nor educational centers to visit.

Many of the larger hospitals have schools for instruction in Western medicine. The government is now opening some medical colleges with Japanese instructors. There is no opportunity for practical anatomy or post mortem investigation because of superstitious reverence for the dead. Dissections of animals and dissections in the operating room at present supply anatomical knowledge.

Some hospitals are locally supported, but the majority look to American and European benevolence. The missionary physician charges a nominal fee where the patient is not too poor.

Sanitary problems are complicated by omnipresent insects and filth. Green vegetables fertilized with human excrement carry intestinal parasites and bubonic plague. China is innocent of sewerage or water supply systems. Hogs and dogs act as public scavengers, while old women follow the hogs and dogs to pick up their droppings. Filthy surface water finds its way into the public wells. Heavy spring rains providentially remove accumulations of months of filthy deposits. In our southern country mosquito nets are a necessity.

The food supply is one of our greatest questions. The common laboring classes do well to receive one meal of rice a day. When such people come for directions to take their medicine they remind one of the Irishman who when told to take his medicine after meals replied "I can't do that, sor, I haven't got the meals." To prepare a patient with bad chronic cystitis for operation for stone, or a phthisical individual for his fight for life, we order eggs and meats but find that they are only able to obtain sweet potatoes and salt fish drippings.

The Canton Hospital, the largest in China, receives annually 27,000 dispensary visits and there are over two thousand operations performed in that time. Since leaving that hospital I have one under my exclusive charge where we have forty beds and receive 6,000 dispensary visits and perform over three hundred operations yearly. I believe our hospital practice will compare with that in America. Asepsis with careful preparatory and after treatment keep down the mortality. The majority of surgical cases are chronic weakened individuals, and the mortality is less than one per cent. From the immediate relief it affords surgery is the most telling factor in our practice. Many operations are miracles in the eyes of those people. They are prone to applaud the opening of a simple abscess and to pass without notice a nice dissection in the carotid triangle in extirpating diseased lymphatics.

Lack of medical skill and ignorant tampering cause diseases to appear in more extended and chronic forms than here in America. The felon of the distal phalanx becomes a general abscess of the hand; a comminuted fracture is seen after the bones have reunited in deformity; ulcers often cover one half of the leg; spleens enlarge until the entire ab-

domen presents a hard surface; ringworm runs off into surrounding space with the exception of the points where the ring crosses hand or foot; fifty to seventy pound abdominal tumors are of common occurrence, and fatty tumors weigh down their victims with years of burden. Acute exanthemata, common in America, are seldom seen with the exception of measles and confluent smallpox. In their places we have cholera, plague, beriberi, leprosy, and tetanus neonatorum.

We cannot specialize. A list of operations for one day may show cataract, perineal lithotomy, internal hæmorrhoids, an enormous ovarian cyst, and a club foot.

A large share of our attention is engaged with eye diseases. Trachoma with its resulting disorders holds the first place. In our operations for entropion I have developed what is to me a new procedure. It consists of a long loop suture catching the upper edge of the tarsal cartilage thus anchoring the palpebral margin high up. I also use the excised strip of skin to fill in the gap covering the tarsal cartilage. Simple cataract extraction is the operation of choice in all uncomplicated cases.

Next in frequency to operations on the eye come those for urinary calculi. We rarely see stones in the pelvis of the kidney. The average weight of calculi is about one ounce, though two or three ounce stones are of common occurrence. Median perineal section with the incision extended laterally around the anus is our operation of choice. I have removed several three ounce stones through the perinæum. Most of the specimens are composed of sodium urates. Occasionally one of calcium urates is seen. About ten per cent. of lithotomies are performed on children of from three to six years of age, while one per cent. are upon females. In the case of a boy of eight years I removed a long stone of one ounce in weight which was firmly attached to the bladder wall posteriorly. The free end was pointed and plugged the urethral opening upon contraction of the bladder. Straining had caused an extrusion of the prostate and rectum outside of the anus.

Tuberculosis is general. Results of treatment similar to those in this country can be had where there is proper food and outdoor life. We have many cases of tuberculous caries. I had one case where the entire head of the femur was found loose underneath the skin over the hip joint. For one case of caries of the seventh cervical I had to make a complete adjustable iron brace to support shoulders and head from the hips. Iron rods, etc., were purchased in native shops.

The alveolar process of the lower jaw is often destroyed as a result of long continued tooth abscesses. In one case I found a sequestrum of the whole alveolar process together with the anterior portion of the ramus and coronoid process entirely separate lying under the mucous membrane on the outer side of the right jaw. The teeth were all imbedded in a new jaw which seemed sound and serviceable. We are called upon to replace a great many dislocations of the lower mandible from excessive gaping.

Speaking of teeth reminds me that the native tooth extractor uses his fingers, which have been educated from childhood to act as forceps. A trial demon-

stration of my skill as a dentist was sought by an old woman on one occasion. She was so surprised and pleased when a tooth was painlessly removed that she immediately requested me to pull ten more.

In concluding this rambling paper I will briefly refer to some cases which may be out of the common run.

Field laborers present chronic painful enlargement of the posterior portion of the os calcis. The disease while slow has acute exacerbations of pain so severe as to prevent walking. At first I attributed these swellings to chronic inflammation and calcification of the bursa beneath the tendo Achillis. Other cases showed a distinct enlargement of the whole posterior portion of the bone. There are no pathological data from microscopical examination. Maxwell, of Formosa, in *Tropical Medicine*, has written of his experiences with this malady. All systemic remedies together with counter irritations and hot air baths fail. He has suggested the only treatment which is to raise a button of bone forcing a quarter inch trephine through into the spongy portion. This in most cases relieves the pain immediately.

A boy of six years was presented with the history of having fallen out of bed two days before. The only abnormal conditions present were constipation and a tumor about twelve inches in length extending from the left iliac through the hypogastric region up to the vicinity of the gallbladder. The tumor had a fecal consistency and was painless. The diagnosis was intussusception of the small intestine up the ascending colon to the right hepatic region. The fact that there was no inflammation permitted an attempt at reduction by taxis. This was accomplished and the ileocaecal valve returned to its normal position. Now careful palpation disclosed the presence of a ball of ascaris lumbricoides obstructing the valve, and portions of the worms were made out extending along the ileum. After about one half hour of manipulation to disentangle the worms, a gurgle and an almost immediate request to defecate resulted in the appearance of several ascaris and a large quantity of fecal matter. No other treatment was necessary. The interesting point of this case was the possibility of distinguishing the presence of the worms by external palpation. I should be interested to hear from any one having a similar case.

Within a few miles of our hospital there is a locality from whence come many cases of Hodgkins disease. We have excised and treated them in many ways, but the only useful treatment is the early removal of adenoids from the nasopharynx and relieving all chronic conditions in the nose. This seems to stop the symptoms in many cases where I am certain the disease would have developed if not so treated.

I have never seen but one case of appendicitis in a Chinese.

The native household treatment of certain disorders is often pathetic. Hung around the child's neck we find a portion of a goat's horn to cure infantile or "goat's" paralysis. The tender skin of an infant shows many scars of the actual cautery applied to relieve colic. I saw one case where the child had been in convulsions followed by coma. The treatment was to force it to cry. To do this the grandmother bit to the bone on either side of the tendo Achillis on each foot.

At a case of post partum hemorrhage the following sight met my eyes: A woman squatted over a tub. Her head was covered with red grease and ashes from several lighted candles and sticks of incense stuck in her knotted hair. Behind her and grasping her hair was the brother of her husband with a large knife in his hand. He was making passes with the knife and savagely yelling "Get out, get out." In the background stood an old neighbor with a drawn sword and

a musket. They were trying to frighten away the evil spirit causing the flow of blood. After a deal of persuasion they permitted the woman to get on the bed, when a dose of ergot together with a little manipulation contracted the uterus and all was serene.

118 FIFTEENTH STREET, NORTH A. T.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LX.—Is opium a useful drug? or is it better to use opium in preference to any of its constituents or derivatives? (Closed March 15, 1907.)

LXI.—How do you treat Pott's fracture? (Answers due not later than April 15, 1907.)

LXII.—What pharmacopœial preparations should be kept on hand by the general practitioner? (Answers due not later than May 15, 1907.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED) that the answers be short; if practicable, no one answer to contain more than six hundred words.

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of \$25 for the best essay submitted in answer to question LIX has been awarded to Dr. Henry C. Becker, of New York, whose article appears below.

PRIZE QUESTION NO. LIX.

THE TREATMENT OF PHLEGMOSIA DOLOROSA.

By HENRY C. BECKER, M. D.,
New York.

The patient is to have absolute quiet and rest in bed. The necessity of this should be impressed upon both patient and nurse, explaining to the latter the dangers incident to dislodgment of portions of the thrombus. Care and gentleness should be observed in bathing of patient, in use of bed pan, etc.

In simple thrombosis without cellulitis and fever and where the limb on the affected side is white and swollen, wrap up limb in a thick layer of cotton and bandage as lightly as possible; support limb on a pillow in a slightly elevated position in order to facilitate the return circulation; if patient complains of a sensation of coldness in limb place a hot water bottle in bed alongside of same; at the site of thrombosis and painful area spread thickly on limb a 15 per cent. ointment of colloidal silver (unguentum Credé) or unguentum hydrargyri, U. S. P.; if pain is complained of much apply ointment with which 20 per cent. of ichthyol has been previously incorporated, but do not rub in ointment, and do not massage.

As simple thrombosis occurs most frequently in patients whose physical condition has been below

par a nutritious and sustaining diet is to be recommended, in addition tonics of iron, quinine, and strychnine are to be administered.

After absorption of the thrombus keep patient in bed for ten or fourteen days longer, and then apply gentle massage to limb below site of previous thrombosis, stroking upward toward body of patients. If a chronic cedema remains in leg and thigh, massage and in addition apply a fairly tight roller bandage, or order an elastic stocking to be worn. The patient should rest her limb as much as possible by keeping it in a horizontal position while she is seated, supporting foot on a chair or foot rest.

The treatment of thrombosis plus cellulitis and sepsis is different in several details. If the affected limb is red, swollen, and hot, apply a wet dressing of liquor aluminii acetatis or a 50 per cent. solution of alcohol and water, and keep dressing constantly moist; if the skin becomes brawny and indurated, or other evidences of pus are present incise freely and drain, and apply wet dressings. Diet should be either light or fluid depending upon the amount of fever and nervous symptoms, alcohol sponges and cold applications should be applied to forehead for fever, bromides should be prescribed for nervous symptoms, morphine for severe pain in limb, salines and enemas for bowels. After subsidence of the symptoms of inflammation and sepsis the same treatment should be followed as in the simple variety.

112 WEST ONE HUNDRED AND FOURTH STREET.

Dr. W. T. Marrs, of Peoria Heights, Ill., writes:

In the treatment of this affection the pathology of it should be kept in mind, although the brevity of this article necessitates only a passing mention of same. The untoward conditions resulting from thrombosis and embolism should not be lost sight of. In a word, the immediate cause of this disease is a plugging up of the femoral vein, resulting in inflammation of veins and lymphatics with infiltration into adjacent tissues.

The remote cause of phlegmosia is perhaps some dyscrasia or below par condition of the blood that invites septic infection. It is usually found in the puerperal state and as a complication thereof. Whether the trouble has its incipency as a direct infection or through metastatic action has not been conclusively determined.

At any rate the genital tract should have a careful scrutiny. If there be pieces of retained placenta and other debris, or any foci from which toxins might be absorbed, it is always well to begin treatment by irrigating the uterus and vagina. This should be continued daily until the tract shows evidences of a return to a normal condition. For this purpose a saline solution should first be used to cleanse the vagina, after which the uterus may be irrigated with a boracic acid solution, four to six drachms to the quart of hot water. Some prefer a carbolio acid solution, which may be used two drachms to the quart.

If fever at the onset is marked fluid extract of aconite may be given hourly until the temperature declines. It is well to combine small doses of digitalis with the aconite. They are old remedies, but are still our best vasomotor sedatives. Give to pro-

duce effect, but watch very carefully. They should be given until there is vascular sedation, evidenced by the pulse and temperature.

No time should be lost in administering calomel in one grain doses at frequent intervals until six or eight grains are taken, to be followed by a saline. The calomel acts as an antiseptic and stimulates every secretion; the salts deplete the sheaths of the vasomotor structures and favor a general osmosis. These two drugs together produce elimination of effete products better than anything the writer has employed.

When mercury seems no longer indicated the bowels should be kept open alone with some one of the saline drugs. Water should be taken freely to favor elimination by way of the kidneys; if the water is distilled so much the better. Opium may be required for pain, but need seldom be given, only in small doses. Codeine is not so likely to upset the stomach as morphine.

The patient should have perfect rest and be disturbed as little as possible. She may, however, assume the upright posture in passing the urine and feces, there being no contraindication for so doing. The affected limb should be slightly elevated and dressed in the manner to be presently described.

The patient should be well nourished and sustained. Good elimination with reasonable sedation will usually keep the fever within bounds. Tonics do little good in the acute stage, quinine being about the only exception. If there is not a clear indication even for this drug it may do harm by checking secretions. Above all, the circulatory system should not be unnecessarily whipped up with strychnine with the idea of "sustaining the heart." After the acute stage is passed potassium iodide, iron, arsenic, and codliver oil may be of the greatest service.

The hygiene and general management of the case does not differ essentially from that of many other acute conditions. In severe cases the infant should be weaned.

Local treatment should not be overdone. Liniments and poultices galore have been used. Nurses and attendants should be emphatically instructed not to rub and manipulate the limb, as by so doing clots or thrombi may be dislodged with disastrous consequences. As a routine measure about the best procedure is to envelope the limb with absorbent cotton and to cover this with oil silk, over all of which may be placed a flannel bandage. The limb should be then placed at absolute rest and not dressed oftener than once a day. If any medicinal remedy is to be applied perhaps an emollient application will be the least harmful. As the acute stage subsides only a flannel bandage need be applied to the limb. The patient should not use the affected parts in vigorous exercise until recovery is well established, the reasons being obvious.

In the subacute stage where there is a swollen and doughy feeling of the parts a rubber or elastic bandage should be worn during the day. A bandage is better than the elastic stocking. Iodine, liniments, and stimulating local agents may now be of value, as well as the interrupted current. Tonics may do good. The iodides and salines may be specially indicated.

Therapeutical Notes.

Furunculous Acne of the Neck.—The irritation of the collar sometimes gives rise to a papular eruption, which soon becomes a furuncle, and may also develop into a carbuncle. Subouraud (*La Clinique*, August 10, 1906) says that the agent to employ in all these cases is sulphur. And the best formula is the sulphur wash of Vidal:

R	Precipitated sulphur,	10.0 grammes;
	Alcohol (90 per cent.),	10.0 grammes;
	Distilled water, (.....)	50.0 grammes.
	Rose water, (.....)	50.0 grammes.

After shaking the bottle, this is to be applied with a piece of absorbent cotton, each night, and in the morning the spot is washed with soap. This is the fundamental treatment of all cases of acne and will cure fifty per cent. of the cases. Individual cases may require special treatment. If there is deep supuration, the hair of the neck should be epilated with tweezers. If the furuncle enlarges, and becomes much indurated, the galvanocautery is useful. If there is ulceration, and a fistulous granulating surface, it should be touched with a pencil of silver nitrate, and of zinc. But whatever the form of furunculous acne of the neck, the treatment should commence with the application of the sulphur lotion. If this proves to be insufficient, other treatment may then be added. Among the most efficient may be named the x ray treatment. It has also been observed that certain springs containing sulphur are useful. Of course, all local sources of irritation should be avoided, such as tight, or rough edged collars.

Santonin, or Santoninic Acid, for the Lightning Pains of Locomotor Ataxia.—E. Negro, professor of neuropathology of the University of Turin, in 1901, called attention to the remarkable power exercised by santonin in relieving the crises of tabes dorsalis. This observation has since been repeated by Bricage in France in a number of cases. Recently (*La Quinzaine thérapeutique*, August 10, 1906) Negro published an article reporting continued success in these cases from this agent, after failure of antipyrine and acetphenitidine. He gives 0.05 gramme of pure santoninic acid every three hours, or gives a dose of 0.1 gramme, and follows it with 0.05 gramme at the end of five hours. Combewalle and Chabert have also found marked relief to follow the administration of this drug in the pains of locomotor ataxia, but on the contrary, in simple neuralgia, they obtained no relief. After a number of trials they finally adopted the method of Negro, of giving a single large dose in preference to small doses frequently repeated. Bricage found that a dose of 15 to 30 centigrammes of santonin rapidly calms the lightning pains, and this effect lasts a considerable time. The feeble toxicity of santonin permits it to be used several days in succession without danger. The occurrence of xanthopsia is the signal announcing intoxication, and its appearance should be followed by suspension of the drug. Santonin is also useful in the laryngeal crisis of tabes. The experience of Negro now covers forty-three cases. Thirty of them were instances of shooting pains of the extremities or the trunk; eleven were gastric crises, and two had severe and

frequent laryngeal attacks. He believes that the original plan of giving three doses a day of five centigrammes each is the one that is best suited to most cases, and it is one which gives no bad results. This treatment may be continued for several weeks at a time, and may be employed in the interval as a preventive treatment. By the daily administration of 15 centigrammes in three doses, he has obtained very favorable results in seventy per cent. of the cases of lightning pains; and also in fifty per cent. of gastric crises. In both of two cases of laryngeal crises successful results were obtained. As regards administration, it may be given in pills or tablets made with sugar.

Liquid Depilatory.—Liquid depilatories are not to be depended on. As the author of *Pharmaceutical Formulas* has remarked, it is only well behaved hairs that yield to this class of preparations. We do not know what efficacy, if any, is possessed by the watery solutions which are advertised to the public, or their composition, though as to the latter we suppose that they consist of solutions of a sulphide or sulphhydrate of one of the alkalies or alkali earths. For application to the downy surface of a woman's skin iodine collodion has been used, the collodion being painted on the part and removed when dry, bringing the adhering hairs with it. The following formulas have been proposed:

R	Tincture of iodine (1 in 12),	3 parts;
	Oil of turpentine,	6 parts;
	Castor oil,	8 parts;
	Alcohol (90%),	19 parts;
	Collodion,	100 parts.

Modifications of this formula are shown in the following:

		I.	
R	Tincture of iodine.....	32	parts;
	Oil of turpentine.....	6	parts;
	Castor oil,	8	parts;
	Absolute alcohol,	40	parts;
	Collodion,	100	parts.
		II.	
R	Tincture of iodine (1 in 10).....	3ss	
	Venice turpentine,	3i	
	Castor oil,	3iss	
	Alcohol,	3iss	
	Collodion,	3vi	

This is painted on the part and as the film comes off the hairs are supposed to come with the film. There is, however, nothing so satisfactory as a paste formed by adding water to a specially prepared powder. For such a powder, which is known as "shaving powder," the following is a good formula:

R	Barium sulphide,	25 parts;
	Powdered soap,	5 parts;
	Powdered talc,	35 parts;
	Cornstarch,	35 parts;
	Perfume,	q s.

One teaspoonful of the powder is made into a paste with three teaspoonfuls of water and applied to the parts with an ordinary shaving brush in a moderately thick and even layer. After four to five minutes the parts should be moistened with a sponge, when, after another five minutes, the hair can be removed by washing off the mass. It is important to use barium sulphide in as fresh a condition as possible; it must not have become oxidized by exposure to air.—*American Druggist and Pharmaceutical Record*, January 28, 1907.

Rheumatic Joints:

R. Acidi salicylici, 5iss;
 Olei terpenæ, 5i;
 Alcolis, 5i;
 Alapis hircinatis, 5i.

M. Sig.: Apply locally to joints once or twice daily.

Pouchet, in *Le Progrès médical*.

Prostatitis.—The *Indian Medical Record* gives the following prescription for prostatitis:

R. Tinct. opii camphoratæ, 5iss;
 Liquoris potassii, 5ii;
 Tinct. lupulini, 5iv;
 Tinct. hyoscyami, 5ii;
 Syrupi zingiberis, 5iii.

M. Sig.: Teaspoonful in half glass of water after meals.

Styes.—Styes occur at all ages, but they are more common in children and young adults, and often appear in crops. As a rule, the patient is out of health, and suffers from constipation, acne spots, or errors of refraction, such as hypermetropia or hypermetropic astigmatism. Until suppuration actually occurs, hot boric acid fomentations should be used, and the patient should be purged. When suppuration has occurred, the eyelash, which is usually in the centre of the yellow area where the pus is pointing, should be pulled out, and then, if necessary, the swelling should be incised, and again hot boric acid fomentations applied. Syrupus ferri phosphatis, in drachm doses, should be given twice or three times daily after food. Calcium sulphide, in doses varying from $\frac{1}{8}$ to $\frac{1}{2}$ a grain for an adult, given twice daily, has been recommended in cases of recurrent styes. When the more acute inflammatory symptoms have disappeared, the following ointment may be prescribed:

R. Unguenti hydrargyri oxidi flavi, pt. j;
 Petrolati, pt. ij.
 Ft. ung.

A small piece of the ointment to be applied to the margins of the eyelids with a fine camel hair brush night and morning. All errors of refraction must be corrected by the use of appropriate glasses. A generous diet, plenty of open air exercise, and, if possible, a change of air are also indicated.—*The Practitioner*, March, 1907.

Acidified Milk in Infant Feeding.—Morse and Bowditch, in the *Archives of Pediatrics*, December, 1906, state that buttermilk, buttermilk mixtures, and milk mixtures acidified with lactic acid bacteria are safe foods for infants, whether well or ill. Infants can thrive and gain on them for considerable periods of time. The use of a routine buttermilk mixture, as has been the custom in the past, is not as rational as that of an acidified milk mixture modified to suit the individual case or of buttermilk modified by the addition of cream and milk sugar. The preparation of such acidified mixtures, while not difficult, is not very practicable for private work. These mixtures and buttermilk are almost always taken well. The results obtained from acidified milk mixtures in cases of malnutrition and chronic disorders of digestion are not materially different from those obtained from the use of other preparations of milk of the same percentages. They are, however, worthy of trial in cases of intractable dis-

turbances of digestion, because some cases do much better on them than on other forms of modified milk. Practically the same, and in some instances better, results are obtained in these conditions with pasteurized buttermilk as with acidified milk mixtures. This fact suggests strongly that the good results which are obtained with buttermilk mixtures are due to their low fat content in combination with a large amount of proteoid in an easily digestible form, and not to the acidity or to the action of the bacteria. Pasteurized buttermilk gives very good results when given as the first form of milk food after the initial periods of water and starchy diets in acute intestinal indigestion and infectious diarrhoea. It is possible that unpasteurized buttermilk will give even better results because of the action of the lactic acid bacteria on the intestinal flora. Fat free milk acidified with pure cultures of lactic acid bacteria ought, however, to be safer and more reliable than commercial buttermilk.

Arsenic and Iodine Mixture for Children.

R. Arrhenal, 0.05 gramme;
 Calcium iodide, 0.5 gramme;
 Syrup of tulu, 100.0 grammes.

M. S. Use a teaspoonful four times daily.

Ointment for Burns.—The following has been recommended by French physicians:

R. Geranium oil, }
 Verbena oil, } of each, 15 gtt.;
 Rose oil, }
 Origanum oil, }
 Sodium betanaphtholate, 0.3 gramme;
 White petrolatum, sterilized, 100.0 grammes.

M. ft. unguentum.

The ointment should be kept in wide mouthed glass stoppered bottles or in collapsible tubes.

Catarrh Ointment.

R. Sodium perborate, in fine powder, 4.0 grammes;
 White petrolatum, 20.0 grammes;
 Sandalwood oil, 10 gtt.

M. ft. unguentum.

Eczema Ointment.

R. Beta naphthol, 3i;
 Sulphur, 3ij;
 Balsam Peru, }
 Petrolatum } of each, 5i.

M. ft. unguentum.

Menthol Emulsion.

R. Menthol, 1.0 to 15.0 grammes;
 Expressed oil of almond, 30.0 grammes;
 Tincture of myrrh, 25.0 grammes;
 Orthoform, 12.0 grammes;
 Distilled water, enough to make, 100.0 grammes.

M. ft. emulsion.

The amount of menthol is to be slowly increased.

Mouth Wash for Thrush in Infants.

R. Potassium chlorate, 4.0 grammes;
 Distilled water, 200.0 grammes;
 Tincture of myrrh, 3.0 grammes.

M. S. Use as a mouth wash.

Mouth Wash for Syphilitic Ulcers.

R. Hydrarg. chloride, corrosiv., 0.2 gramme;
 Alcohol, 2.0 grammes;
 Tincture of myrrh, 100.0 grammes;
 Decoction of cinchona, 150.0 grammes;
 Honey of rose, 45.0 grammes.

M. S. Use two or three times a day as a mouth wash.

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COMPULSORY PASTEURIZATION OF MILK.

Ever since the agitation was started for the compulsory pasteurization of the entire milk supply of New York we have fought against the scheme. If anybody has a lingering doubt that we are sustained by the medical profession of the city, we will call his attention to the facts that on March 12th the Section in Public Health of the New York Academy of Medicine passed a resolution and recommended its adoption by the academy at large, and that on March 21st the academy did adopt it. The resolution reads substantially as follows:

1. That the Section in Public Health of the New York Academy of Medicine does not believe in the necessity of the compulsory pasteurization of all of the milk supply of New York city, but recommends for the present to all those whose milk supply cannot be proved to be thoroughly inspected and wholesome, and mainly the milk destined for the feeding of infants unless it is "certified," to boil their milk when delivered in the morning for three minutes. 2. That the health of the city of New York demands a persistence in the policy of supervision of farms, dairies, and creameries, supervision of the milk during transit and on delivery in the city, and supervision at the points of distribution in the city to the consumer, whether the milk that is distributed has been pasteurized or not. 3. That local and State health authorities and the Bureau of Animal Industry of the United States Department of Agriculture should cooperate with milk producers to prevent the occurrence of communicable disease in cattle and their care takers.

It was further resolved that a copy of the resolution should be sent to the members of the Commit-

tee on Public Health of the Board of Aldermen, to the committee of the New York State legislature having under consideration the Reece bill, and to the medical and the lay press. This action of the Section in Public Health, fully endorsed by the academy as a whole, must do away with all uncertainty as to the sentiments of the medical profession of New York with regard to the foolish movement for wholesale compulsory pasteurization. We hope the last has been heard of that crazy agitation.

ÆSTHETIC ALIMENTATION.

It has long been well appreciated by physiologists that man's food and drink must be attractive if it is to afford the full measure of nutriment, and treatises on the æsthetics of the table have not been lacking. One of the most entertaining of these is a book entitled *Dining and its Amenities*, recently published by the Rebman Company. Though the author's name is not given, there is abundant internal evidence that the book was written by a member of the medical profession. He is undoubtedly a man of great learning, both in medicine and in other spheres of knowledge, and a man of much humor. What he has written is altogether charming, though he has fallen into the errors of straining after unusual words and of adopting a perfectly senseless system of punctuation.

The book is not a treatise on dietetics, though there is to be found in it much that has a direct bearing on the eating and drinking of everyday life. It is rather a disquisition on banqueting, with special reference to the æsthetics of formal dinners. The author descants on the table, on its spotless cover, on the floral adornments, on the illumination of the room, on the silver and porcelain and glass accessories, on the viands, and on the wines. All these things are by no means trifles. Many a praiseworthy project has been assured or wrecked at a dinner party, accordingly as the dinner was well or ill managed. There are times in the life of almost every medical man when a dinner, well planned and well conducted, may be the means of furthering some very desirable object. Fortunately, physicians are not backward in the art of arranging good dinners. A shining example of excellence in this respect was the late Dr. Fordyce Barker; another was the late Dr. Fessenden N. Otis. We could mention the names of men still living, but by so doing we might embarrass them.

Lucullus did not live in vain, and, though gluttony is to be abhorred, the preparation of a feast that will hold men and women together for some hours is not likely to fail of securing their continuous attention to some worthy object or of strongly inclining them to favor its attainment. While legs

together under the mahogany are not inconsistent with dissension among the persons to whom they belong, the juxtaposition is in a high degree favorable to concord. Many a toast has reconciled bitter opponents, and so it will be to the end of time. The author of the book that we have cited is therefore to be credited with having made an important move in the direction of general amity and cooperation.

THE EXCITING CAUSES OF MALARIAL ATTACKS.

We are reminded by Le Ray, in his recent work, *On l'écologie végétation dans l'évolution du paludisme* (Paris, 1905), that the greater proportion of individuals infected by the malarial parasite do not present any symptoms whatever. In fact, the normal condition of health, of itself, serves to protect from these microorganisms, by rendering them inert.

The plausible, but entirely theoretical explanation given by Le Ray of this state of inertia, or latent infection, is that it is produced by protective reflex phenomena, consisting of continuous undulatory contractions of certain bundles of unstriped muscular fibres. According to this hypothesis penetration of the hæmatozoon of malaria into the system cannot be regarded as the unique or even the principal factor in the malarial attack. The morbid manifestations which characterize the disease clinically are under direct and almost exclusive dependence upon attending circumstances that interfere with the execution of the reflex action just referred to, which normally should protect the body from the infecting agent. These circumstances consist: 1. In meteorological variations, which are known to produce modifications in the state of contraction of the smooth muscular fibres. 2. In the absorption of toxic gases coming from masses of vegetable matter in a state of decomposition. The effect of these gases is to paralyze the nerve cells presiding over reflex muscular contraction. 3. In subjective phenomena of fatigue or nervous depression, which prevents the expenditure of sufficient energy to keep up the reflex muscular contractions.

Le Ray suggests that the same theory may be applied to a great number of seasonal infections or even to many hereditary diseases. This brief reference, based upon a review of the monograph (in the *Revue médicale de l'Est*, December 15, 1906) is merely to call attention to the valuable work which is now being done upon the attendant contributory and predisposing conditions which occupy such an important position in the ætiology of infectious as well as of noninfectious diseases.

THE HEARING OF TELEPHONE OPERATIVES.

Dr. N. R. Blegvad has investigated the influence of professional telephone work upon the human body, especially upon the organ of hearing. His very interesting essay appeared in the *Nordiskt medicinskt Arkiv* for February, 1907. The author reviews the literature on this subject and reminds us that Dr. Clarence J. Blake, of Boston, was the first to write about it, in 1878, in the *Zeitschrift für Ohrenheilkunde*. M. Gellé, of France, followed very closely (*Annales des maladies de l'oreille, du larynx*, etc., 1889, No. 12). Since then many articles relating to this question have been published by Lannois, Treitel, Urbantschitsch, von Kahn, Politzer, Röpke, Tommasi, and others. The most thorough work was by Braunstein (*Archiv für Ohrenheilkunde*, 1903), who examined 270 employees of the Munich telephone offices. The researches had been made by otologists exclusively until, in 1905, the neurologists became interested, and the author mentions such names as Wernicke, Kurella, Bernhardt, Herrmann, Passow, Böhme, Eulenburg, Råbiger, and others.

Dr. Blegvad is assistant otologist at the ear and throat department of the City Hospital of Copenhagen, and the telephone company of the Danish capital gave him permission to examine its female employees, even making this examination obligatory. He was therefore in a position to see 450 women (the total number was 801) who were employed in or very near to the city. His investigation included a short history of the employee, an objective examination of the auditory meatus, tympanic membrane, nose, and fauces, and a test of the function of hearing.

These women have to work daily from six to eight hours, forenoon and afternoon alternating, while the night service is attended by a separate set of girls, who work twelve hours, but do not attend to the day service. The receiver is the head receiver, to which is attached the breast transmitter; the switchboard is provided with plate indicators or incandescent lights, indicating the calling party; and the called party is connected with a jack. The same instruments, by the way, are used in the New York central offices. Each girl has to attend to from eighty to a hundred and twenty subscribers; the average connections are about 125 in an hour, but increase sometimes to 175 or 200.

From the 450 girls, thirty-two were excluded on account of cerumen found in the meatus, leaving 418. Of these, 8.1 per cent. were between seventeen and twenty years of age, 69.4 per cent. between twenty-one and thirty, 14.8 per cent. between thirty-one and forty, 6 per cent. between forty-one and fifty, and 1.7 per cent. between fifty-one and sixty.

The term of service was given as follows: One for twenty-three years, three for twenty-two, four for twenty-one, eighteen for sixteen to twenty, sixteen for twelve to fifteen, thirty-seven for nine and a half to eleven, twenty-three for seven and a half to nine, sixty-one for five and a half to seven, one hundred and twenty-three for three and a half to five, fifty for one and a half to three, and eighty-two for one quarter to one year.

The ear preferably used was for 69.5 per cent. the left, for 6.5 per cent. the right, 13.5 per cent. used the ears alternately, 8.9 per cent. preferred the left, while 1.6 per cent. preferred the right ear although using the other ear at times.

The result of the investigation may be given as follows: 1. Of the 418 girls examined, forty-seven showed pronounced pathological changes of the membrana tympani, leaving 371 with a normal membrane. Of these, 26.4 per cent. showed a retraction of the membrane of the ear used for the receiver. 2. The work does not produce a diminution of the faculty of hearing in healthy organs, neither is this sense increased, but the ear becomes accustomed to its duty and can thus accommodate itself to the conversation. The lower sound limit is higher than in the normal ear, excluding therefore the deepest sounds, while nothing can be stated about the higher sound limit. 3. It could not be demonstrated that the work had a bad influence upon diseases of the ear. But it was found that sudden noises, including that of thunder, could induce a recurrence of a chronic malady or produce a new disease. 4. On the other hand, it was found that the work gave rise in nervous girls to headaches and such subjective aural symptoms as pain, tinnitus, pressure, hyperæsthesia acustica, etc.

DANGER IN THE PHRASE "AS DIRECTED."

Pharmacists frequently complain that physicians are less careful than they should be in their chirography when writing prescriptions, a complaint only too well founded. When to this carelessness in the matter of handwriting is added another form of carelessness in the failure to put on the prescription full directions as to its use, we have indeed a dangerous combination. The presence of explicit directions on the prescription frequently furnishes to the careful dispenser a much needed clue as to what is really wanted by the prescriber. The presence of this information on the prescription is therefore an added safeguard. The absence of explicit directions on a prescription calling for laxol seems to have been primarily the cause of an almost fatal error on the part of a dispenser in New York recently. In this instance the physician ordered laxol, to be taken as directed. The dispenser read lysol

for laxol, and dispensed this powerful though poisonous antiseptic, taking the precaution, however, to label it poison. Unfortunately, the parents of the patient were not able to read English, and so disregarded the poison label and administered the poisonous dose to the child, which narrowly escaped death. From the statements which have been made public there seems but little doubt that the dispenser would not have sent out lysol had the prescriber stated clearly in the directions that a teaspoonful was to be administered internally. It is true that the prescriber in this case has the excuse that the patient could not read English, but it is well for prescribers to bear in mind that the directions are for the information of the dispenser as well as of the patient.

ATROPINE IN THE TREATMENT OF ASTHMA.

An extraordinarily prompt action of atropine in asthma is recorded by G. Zuelzer (*Therapie der Gegenwart*, September, 1906; *Berliner klinische Wochenschrift*, January 28, 1907). Almost immediately after the subcutaneous injection of a milligramme of the drug the area of pulmonary resonance is reduced by from three to five finger breadths, and the subjective sensations promptly subside. In a great majority of cases this remedy has shown itself of great value. Its action is explained by its paralyzing effect on the pneumogastric nerve. Though, in experiments on animals, irritation of the vagus has been found to give rise to muscular spasm of the bronchi and to pulmonary distention, such results do not follow if atropine has previously been injected.

THE TONSIL AS A PORT OF ENTRY OF THE TUBERCLE BACILLUS.

The part played by the tonsil in introducing the tubercle bacillus into the system has lately been much discussed. A noteworthy contribution to the discussion has recently been furnished by Dr. Bandilier (*Beiträge zur Klinik der Tuberkulose*, vi, 1; *Berliner klinische Wochenschrift*, January 28th), who, jointly with Paul Grawitz, of Greifswald, has studied microscopically a great number of excised tuberculous tonsils. He concludes that tonsillar tuberculous disease develops on the basis of a chronic inflammation and is to be diagnosticated only microscopically; as a disease it is strikingly mild. In cases of pulmonary tuberculous disease it is a frequent accompaniment, generally as a secondary result of infection from sputum. However, primary tuberculous disease of the tonsils occurs from the inspiration and the ingestion of tubercle bacilli, and is not so very rare as is generally assumed.

Obituary.

FRANKLIN E. SYLVESTER, M. D.,
OF NEW YORK.

Dr. Sylvester died at his late residence, 204 East Fifty-third Street, New York, on March 15th, after a lingering illness, of pulmonary tuberculous disease, at the age of forty-two. He was born in South Dansville, N. Y., on November 3, 1864. He was graduated from the University of the City of New York in 1888. He was a member of the Medical Society of the County of New York, of the New Mexico Medical Society, and of the Hornellsville Medical Society. He was at one time an instructor in surgery in the Postgraduate Medical School, and held several other appointments.

GEORGE G. WHELOCK, M. D.,
OF NEW YORK.

As the result of a long illness, Dr. Wheelock died on Friday, March 22nd, at his home, in Park Avenue. He had reached the age of sixty-eight. He was a native of Boston and received his academic education at Harvard, but he took his medical degree from the College of Physicians and Surgeons, New York, served on the house staff of the New York Hospital, and took up his permanent residence in New York. He was in active practice for only a few years, but he always maintained his interest in professional affairs. In addition, he contributed largely to the efficiency of many social, artistic, and educational organizations. He was a handsome man and one of exceptionally attractive personal qualities.

ERNST VON BERGMANN, M. D.,
OF BERLIN.

Professor von Bergmann died at Wiesbaden on March 25th of cancer of the stomach. For the last decade he had been the leading surgeon of Germany. A descendant of an old German family residing for centuries in the Baltic provinces of Russia, he was born at Ruyen, Livonia, December 16, 1836. He studied medicine from 1856 to 1860 in the University of Dorpat, and became assistant at the surgical clinic and four years later Privatdozent. During the wars of 1866 and 1870-1871 he acted as surgeon in the Prussian armies and became in 1871 professor of surgery in his alma mater. In 1877 he accompanied the Russian army in the war against Turkey, and was in 1878 elected to the chair of surgery at the University of Würzburg. In 1882 he accepted the same position in the University of Berlin, where he also was appointed surgeon general to the German army in 1888, receiving the title of Councillor of State (Excellency).

Von Bergmann contributed many essays to the medical journals of Europe. He was editor of the *Arbeiten aus der chirurgischen Klinik der königlichen Universität Berlin*; with König and Richter, of the *Zentralblatt für Chirurgie*; with Gussenbauer and Körte, of the *Archiv für klinische Chirurgie*; and with Erb and von Winckel, of the *Sammlung klinischer Vorträge*. In 1867 there appeared in St. Petersburg his first book, *Die Lepra in Livland*.

Among his many books may be mentioned: *Die Behandlung der Schussverletzungen des Kniegelenks im Kriege*, Stuttgart, 1878; *Die chirurgische Behandlung bei Hirnkrankheiten*, third edition, Berlin, 1899; and *Handbuch der speziellen Chirurgie* (with von Bruns and von Mikulicz-Radiecki), Stuttgart, 1899-1901. After the death of Billroth, von Bergmann and von Bruns continued the *Deutsche Chirurgie*.

News Items.

NEW YORK CITY AND STATE.

Personal.—A professional copartnership has been formed between Dr. Samuel Lloyd and Dr. George M. Edebohl. The firm's office will be that now occupied by Dr. Lloyd, at 12 West Fiftieth Street.

The Society of Physicians of the Village of Canandaigua.—The programme for a meeting of this society, held with Dr. J. H. Jewett, on Thursday, March 14th, included a paper on Alcoholism, by Dr. M. R. Carson, of Canandaigua.

An Examination for Internes at the Sydenham Hospital.—An examination for internes will be held at the hospital, 339-349 East One Hundred and Sixteenth Street, on Tuesday, April 23rd, at 11 a. m. Applicants are requested to forward their credentials on or before April 15th to Dr. Henry Herman, 937 Madison Avenue, New York.

The Utica Medical Club.—At a meeting of this club, held on Thursday evening, March 14th, Dr. Andrew Sloan read a paper entitled *The Medical Treatment of Appendicitis*. Officers for the ensuing year were elected as follows: Dr. Andrew Sloan, president; Dr. W. S. Nelson, vice-president; Dr. W. A. Beattie, secretary-treasurer; Dr. M. Davies Schuyler and Dr. E. Van Deusen Gazzam, trustees.

A Tablet in Memory of the Late Dr. George Ryerson Fowler.—The Society of Ex-Internes of the Seney Hospital in Brooklyn will unveil on Easter Sunday a bronze tablet to the memory of the late Dr. George Ryerson Fowler. The tablet, which will be placed in the main hall of the hospital, has this inscription: "In memory of Dr. George Ryerson Fowler, surgeon in the Methodist Episcopal Hospital, 1887-1906. This tablet is erected by the Society of Ex-Internes in grateful recognition of him as teacher, counsellor, friend."

The Medical Society of the County of Ulster.—A meeting of this society will be held at Kingston, on Tuesday evening, April 2nd. The following programme has been prepared for this meeting: Short business session, 8 p. m.; Scientific session, 8.30 p. m.; Bronchoscopy (with demonstration of the instruments used and their practical application), by Dr. Emil Mayer, New York; Danger Signals in Diseases of the Eye and Ear, by Dr. James R. Nelson, Kingston; Eye, Ear, Nose, and Throat. Conditions in General Practice, by Dr. Aden C. Gates, Kingston.

Gifts to the Children's Hospital of Buffalo.—Within less than a year the Children's Hospital, of Buffalo, has received three valuable gifts. Miss Martha T. Williams presented the site now occupied by the hospital, in Bryant Street. Mrs. Charles W. Pardee, president of the Board of Managers, has given funds sufficient to erect a thoroughly modern, fireproof hospital building, on the present site, suited for the accommodation of 100 patients. The last large gift to be announced is a contribution of \$10,000, toward the endowment fund, by Mr. William A. Rogers. Work on the new building will begin very soon.

The Medical Society of the County of New York.—The following programme was arranged for a meeting of this society, held on Monday evening, March 25, 1907: Clinical Report: Multilocular Glandular Cystoma of the Ovary Complicating Pregnancy, by Dr. B. S. Talmey; Papers: Gonorrhœa in Women: (a) Infection of Urethra, Vagina, and Glands of Bartholin, by Dr. William S. Stone; (b) Infection of the Uterus and of the Annexa, by Dr. Brooks H. Wells; (c) Gonorrhœa During Pregnancy, by Dr. J. Clifton Edgar; (d) Pathology, by Dr. H. C. Coe; (e) Abortive Treatment, by Dr. F. Bierhoff; (f) General Treatment, by Dr. H. J. Boldt. Discussion by Dr. Bache McE.

Emmet, Dr. James N. West, Dr. William S. Blandbridge, and Dr. George H. Mallett.

The New York State Hospital for Incipient Tuberculosis. We are requested to publish the following letter from the Medical Profession of New York State: At the New York State Hospital for Incipient Tuberculosis there are thirty-five vacant beds. This is due to the fact that suitable cases for treatment, and for which the hospital was built, cannot be secured. Out of 940 applications for admission to the hospital last year, 220 patients were, following examination, received for treatment, the remaining 720 being too far advanced to be accepted. Of the 220 received 65 per cent. only were actually incipient cases. The balance, on admission, were found to be suffering from more advanced disease and were reclassified at the hospital. This condition, considering the well known curability of the disease in question in its early stages, should not exist in New York State to-day, where annually 14,000 people die of tuberculosis. There are approximately 50,000 consumptives in the State. Thousands of these must be in the incipient stage, losing all chance of recovery. One of the chief purposes of the New York State Hospital is educational; it was designed to encourage early diagnosis and to supply the only ideal form of prevention while saving life. It would seem that incipient tuberculosis is an unknown, unrecognized disease, except by a few experts. In the last annual report of this hospital it is shown that 85 per cent. of incipient cases were discharged apparently recovered. This class constituted 65 per cent. of all cases under treatment. Of the moderately advanced cases 23 per cent. were discharged apparently recovered, and of the advanced cases no per cent. was so discharged. The possibility of obtaining good results is plainly seen, therefore, to depend in the main upon the amount of tuberculosis present when the case is placed under treatment. The definition of an incipient case, as adopted by the National Society for the Study and Prevention of Tuberculosis, is as follows: *Slight initial lesion in the form of infiltration limited to the apex of a small part of one lobe. No tuberculous complications. Slight or no constitutional symptoms (particularly including gastric or intestinal disturbance or rapid loss of weight). Slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours, especially after rest. Expectoration usually small in amount or absent. Tubercle bacilli may be present or absent.* This is the class of cases we desire to receive to the full working capacity of the institution. The Board of Trustees of the New York State Hospital for Incipient Tuberculosis have authorized the publication of this letter, feeling it their duty to acquaint the medical profession with the surprising conditions existing in the State at this time regarding tuberculosis and its prevention and treatment. Signed, M. P. Burnham, M. D., superintendent; Elmer E. Larkin, M. D., Martin E. McClary, Rev. J. Bancroft, Devins, D. D., Edward R. Rice, John H. Pryor, M. D., board of trustees.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending March 23, 1907:

	—March 23—		—March 16—	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	101	17	55	4
Scarlet fever.....	3	0	106	0
Varicella.....	99	0	106	0
Measles.....	444	13	429	13
Scarlet fever.....	375	19	395	25
Whooping cough.....	61	12	45	9
Diphtheria.....	318	54	259	37
Tuberculosis pulmonalis.....	410	169	435	209
Cerebrospinal meningitis.....	21	18	21	16
Totals.....	1,802	282	1,742	313

Society Meetings for the Coming Week:

MONDAY, April 1st.—New York University Medical Society; Practitioners' Club, Newark, N. J.; Utica, N. Y., Medical Library Association; Brooklyn Anatomical and Surgical Society.

TUESDAY, April 2nd.—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Buffalo, N. Y., Academy of Medicine (Section in Surgery); Hornellsville, N. Y., Medical and Surgical Association (annual); Long Island, N. Y., Medical Society; Medical Association of Troy and Vicinity; Hudson, N. J., County Medical Society (Jersey City);

Syracuse, N. Y., Academy of Medicine; Ogdensburg, N. Y., Medical Association.

WEDNESDAY, April 3rd.—Harlem Medical Association, New York; New York Genitourinary Society; Psychiatric Society of New York (private); Society of Alumni of Bellevue Hospital; Elmira, N. Y., Academy of Medicine.

FRIDAY, April 5th.—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynecological Society, Brooklyn.

PHILADELPHIA AND THE MIDDLE STATES

Saint Mary's Hospital.—The Sisters of Saint Francis, in charge of Saint Mary's Hospital, held donation day on Monday, March 25th. The sisters hope to receive enough money to materially reduce the Hospital debt, which is now \$25,000.

Training School for Nurses of the Medicochirurgical Hospital.—The annual commencement exercises of the Training School for Nurses of the Medicochirurgical Hospital in Philadelphia were held on Tuesday evening, March 26th. Twenty young women received the diploma of the school.

Wills Hospital.—A committee composed of Dr. S. Lewis Ziegler, Dr. McCluney Radcliffe, Dr. Samuel D. Risley, Dr. Frank Fisher, and Dr. Conrad Behrens has been in Harrisburg in the interest of a bill which has been introduced into the Pennsylvania State Legislature for the appropriation of \$200,000 for the maintenance and improvement of Wills Hospital in Philadelphia.

The New Jersey Orthopaedic Hospital and Dispensary, established at Orange three years ago, has for its sole object the care of cases suffering from crippling and deforming diseases. The annual report for 1906 shows the rapid advancement of this worthy charity. It is desired, that the profession of New Jersey shall cooperate in this charitable work. Dr. Robert E. Soule, of New York, is surgeon in chief of the institution.

The Banquet of the Class of 1882 of the Medical Department of the University of Pennsylvania was held at the Bellevue-Stratford Hotel, Philadelphia, on Saturday evening, March 16th. Sixty members of the class were present at the festivities. Dr. Horace Jayne presided and made a felicitous speech. Dr. James Tyson, who is one of the three surviving members of the faculty in 1882, was the guest of honor. Historical sketches were read by Dr. Judson Daland and Dr. William J. Taylor.

Charitable Bequests.—By the will of Frederick Bauer the German Hospital and the German Lutheran Orphanage receive \$1,000 each. By the will of Samuel Elkin the Jewish Hospital, the Jewish Foster Home, the Jefferson Medical College Hospital, the Episcopal Hospital, the Presbyterian Hospital, the Rosine Home, Saint Agnes's Hospital, and the Home for Jewish Children each receive sums of money varying from \$3,000 to \$5,000. The Home for Crippled Children receives \$10,000.

Northern Medical Association of Philadelphia.—At the regular semimonthly meeting of this association, held on Friday evening, March 22nd, Dr. Heinrich Wolf read a paper on Artificial Hyperemia in the Treatment of Disease, with Special Reference to Bier's Method. The association will vote on reducing the number of meetings so that instead of two meetings a month only one will be held. It is proposed to hold this meeting on the second Friday of each month, except July and August.

Clinic in Oral Surgery.—The Department of Dentistry of the University of Pennsylvania has started a daily clinic in oral surgery for the gratuitous treatment of patients suffering from surgical diseases of the mouth and jaws. The clinic is under the charge of Dr. M. H. Cryer and is held between the hours of 1 and 2 p. m. This clinic was formerly held twice a week by Dr. Cryer, and evidently it has grown so that the increased allotment of time is necessary for the accommodation of the patients.

Section in Ophthalmology, College of Physicians.—The regular monthly meeting of this section was held on Tuesday evening, March 19th. The following papers were read: Dr. John B. Turner, Acute Superior and Inferior Poliomyelitis; Dr. Howard F. Hansell, Two Fatal Cases of Orbital Cellulitis; Dr. Frederick Krauss, A Case of Embolism of a Cilioretinal Artery, and A Case of Persistent

Hyaloid Artery; Dr. G. E. de Schweinitz, Concerning Keratitis Disciformis; Dr. G. E. de Schweinitz and Dr. C. M. Hosmer, Traumatic Iridocyclitis and Localized Edema of the Macula.

Section in Otology and Laryngology, College of Physicians. At the regular monthly meeting of this section, held on Wednesday evening, March 20th, Dr. Ralph Butler demonstrated Some Preparations of the Normal Anatomy and Histology of the Ear; Dr. B. Alexander Randall made some remarks on Regeneration of the Mastoid After Excision, as Shown at Operation Four Years Later, and on a Case of Labyrinthine Caries in Chronic Tympanic Suppuration; Dr. W. G. B. Harland read a paper entitled The Larynx in Locomotor Ataxia; and Dr. Joseph S. Gibb reported some Complications and Sequelæ of Operations on Pharyngeal and Fauical Tonsils.

The Annual Meeting of the Free Hospital for Poor Consumptives was held in Philadelphia, on Monday, March 11th. The following officers were elected for the ensuing year: President, Dr. Lawrence F. Flick; vice-president, Mr. Louis Gerstley; second vice-president, Mr. M. S. Kemmerer; secretary, Mr. Charles W. Welsh; treasurer, Mr. Edward A. Miller; managers, Mr. James M. Wilcox, Mr. Talcott Williams, Mr. Frank Graham Thomson, Dr. Charles J. Hatfield, Dr. John K. Mitchell, Dr. D. J. McCarthy, Dr. Joseph Walsh, and Dr. William B. Stanton. The record of the society's sanatorium at White Haven, Pa., is excellent. The management is making requests for \$100,000, to complete the buildings on the land at White Haven.

Scientific Society Meetings in Philadelphia for the Week Ending April 6, 1907.—*Monday, April 1st*, Philadelphia Academy of Surgery; Biological and Microscopical Section, Academy of Natural Sciences; West Philadelphia Medical Association; Northwestern Medical Society. *Tuesday, April 2nd*, Academy of Natural Sciences; Philadelphia Medical Examiners' Association. *Wednesday, April 3rd*, College of Physicians; Association of Clinical Assistants of Wills Hospital. *Thursday, April 4th*, Obstetrical Society; Medical Society of the Southern Dispensary; Section Meeting, Franklin Institute; Northwest Branch, Philadelphia County Medical Society. *Friday, April 5th*, American Philosophical Society; Kensington Branch, Philadelphia County Medical Society.

Philadelphia Branch of the American Pharmaceutical Association.—The regular stated meeting of this branch of the American Pharmaceutical Association will be held in the lower hall of the College of Physicians, northeast corner Thirteenth and Locust streets, on the evening of Tuesday, April 2, 1907, at 8 o'clock. The discussion on Popularizing United States Pharmacopœia and National Formulary Preparations will be contributed to by Dr. M. H. Fussell; Simplicity in Medication and the Evident Duty of the Pharmacist, Professor I. V. S. Stanislaus; The Need for Discouraging the Use of Patent as Well as Proprietary Medicines, Dr. M. Clayton Thrush; The Value of United States Pharmacopœia and National Formulary Preparations as Compared with Proprietarys, Professor Joseph P. Remington; The Exhibition of United States Pharmacopœia and National Formulary Preparations at the Coming Meeting of the American Medical Association.

Philadelphia Personals.—Dr. W. W. Keen gave his last lecture at the Jefferson Medical College on March 15th, before an audience composed of students, staff, officials, and nurses. Dr. Keen will leave in a short time for Europe, where he intends to remain two years.

Dr. W. M. L. Coplin, professor of pathology in the Jefferson Medical College and Director of the Department of Public Health and Charities of Philadelphia, was entertained at a complimentary dinner in honor of the tenth anniversary of his acceptance of the chair of pathology in Jefferson Medical College, on March 15th. Dr. Coplin was presented with a handsome silver service by his associates.

Dr. Mary E. Pennington has resigned as second assistant bacteriologist to the Bureau of Health of Philadelphia. Dr. Evelyn Witmer has been appointed to succeed her.

Dr. William J. Bailey, of Connellsville, Pa., and Dr. W. H. Dobson, of Canton, China, are registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

The Philadelphia Dispensary.—The annual report of the Philadelphia Dispensary for 1906 has just been issued. The year 1906 completed the one hundred and twenty-first year of the existence of the corporation, which is engaged in ministering to the sick among the poorer classes. During

the year 28,034 cases were treated at the dispensary and by the district physicians. Of these cases 424 were treated in their homes by the district physicians. In 1856 only 10,747 cases were treated. Four hundred and ninety obstetrical cases were attended. The following officers were elected for 1907: Attending physicians and surgeons, Dr. Horace S. Lewars and Dr. Milton K. Meyers; obstetric physician, Dr. Joseph Price; assistant, Dr. James W. Kennedy; consulting physicians and surgeons, Dr. R. A. F. Penrose, Dr. H. C. Wood, and Dr. Thomas K. Morton; resident physician, Dr. E. S. Vanderslice; apothecary, Dr. Henry M. Garden; assistant physician, Dr. Mary Wenzel; matron, Mrs. Catharine Phillippe; obstetrical nurse, Miss Mollie H. McIntire.

Presbyterian Hospital in Philadelphia.—The thirty-sixth annual report of the Presbyterian Hospital has just been received. During the year, 229 cases of typhoid fever were treated, of which 30 were fatal, or 13.1 per cent. Eighty-three cases of pneumonia were treated, of which 46 ended in death, a rate of 55.4 per cent. Two hundred and seventy-one abdominal operations were performed, including operations on the kidney, radical cure of hernia and operations for appendicitis. Of these cases 19 patients died, or 7.01 per cent. In the Maternity Department, which was opened May 18, 1906, 40 patients have been treated and 37 babies born. None of the mothers died; 5 of the babies died. Of these, 4 were born before the period of viability and 1 died at the end of eleven days, from congenital syphilitic lesions. Fifteen operations were performed at the time of delivery. There was 1 case of eclampsia, 1 case of foetal toxæmia, 1 case of central placenta prævia, 1 case of antepartum hæmorrhage, 1 case of retained placenta, 1 case of chorea and nephritis, and 1 case of nephritis. During the year, Mr. John B. Gest, a member of the board of trustees, and Lady Kortright, an eminent benefactress, died. During the past eighteen years Lady Kortright has contributed \$335,000 to the hospital. This money has been variously used—in the endowment of a free bed, in the erection of the men's surgical ward, in the purchase of land and the erection on it, at Devon, Pa., of the Richardson Home for Convalescents, and in the endowment of the home, and also for the general uses of the hospital. In addition to this sum Lady Kortright left a large sum of money in her will for the uses of the institution. During the year 1906, 2,499 patients were admitted to the hospital, 122 to the Richardson Home, and 11 to the Eliza Cathcart Home, making a total of 2,844, including those patients remaining in the hospital at the beginning of the year. The average daily number of patients maintained in the hospital was 162, and the cost of maintenance \$1.72 per diem. During the year 1906 an endowment of \$6,225 was received for the Maternity House. Eliza Otto endowed five beds. Two beds were endowed by Dr. John S. Wentz and his wife, Mary D. Wentz, thus endowing the Edward Leisenring Wentz Room. One bed was endowed by the will of Matilda M. Bartley, to be known as the Myra Bartley Bed.

The Health of Philadelphia.—During the week ending March 15, 1907, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Typhoid fever.....	167	38
Scarlet fever.....	38	2
Chickenpox.....	28	0
Diphtheria.....	78	9
Cerebrospinal meningitis.....	10	1
Measles.....	47	0
Whooping cough.....	26	4
Tuberculosis of the lungs.....	79	78
Pneumonia.....	151	111
Erysipelas.....	11	1
Pharyngeal fever.....	1	3
Croup.....	13	19
Mumps.....	3	0
Scarlet fever.....	2	0
Measles.....	1	0
Whooping cough.....	2	0

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 9; diarrhoea and enteritis, under two years of age, 17. The total deaths numbered 688, in an estimated population of 1,500,595, corresponding to an annual death rate of 23.80 in a thousand population. The total infant mortality was 134; under one year of age, 114; between one and two years of age, 20. There were 42 still births, 27 males and 15 females. The temperatures were about normal, varying from 65 degrees as a maximum on the 14th, to 25 degrees as a minimum on the 10th. The total precipitation was 1.08 inches.

BOSTON AND NEW ENGLAND

The Doctors' Club of Greenfield, Mass.—A meeting of the club, held on Tuesday, March 19th, was devoted to discussion of the subject of "Anthrax." Dr. George P. Fawcett read a paper on the subject.

Personal.—Dr. John Collins Warren, who has been instructor and professor of surgery in the Harvard Medical School since 1871, will become past president of the close of the present year.

Dr. Frederic T. Lewis, of the Harvard Medical School, has been appointed editor of the *Journal of the American Medical Association*.

BALTIMORE AND THE SOUTH.

The Richmond (Va.) Academy of Medicine and Surgery.

The programme prepared for a meeting of this academy, held on Tuesday, March 26th, included a paper entitled "Diseases of Metabolism," by Dr. Arnold Lorand, of Carlsbad, Austria.

The Orangeburg County, South Carolina, Medical Association.—A meeting of this association was held at Orangeburg, on Monday, March 18th. The association was organized in 1906 and has been steadily increasing in membership, which now includes nearly all practitioners in the county. The officers of the association are: President, Dr. W. L. Pou, of St. Matthews; vice-president, Dr. A. S. Hydrick; secretary, Dr. L. C. Shecut; and treasurer, Dr. W. R. Lowman, of Orangeburg.

The Memphis and Shelby County, Tennessee, Medical Society.—At the annual meeting of this society, held on Tuesday, March 19th, officers were elected as follows: President, Dr. Alexander Erskine; vice-president, Dr. George R. Livermore; secretary, Dr. J. W. Price (re-elected). Delegates to the State association for the next two years were elected, as follows: Dr. Louis Leroy and Dr. M. Goltman, of Memphis, and Dr. E. K. Leake, of Collierville. Those selected for alternates were Dr. N. F. Raines and Dr. John L. Jelks, of Memphis, and Dr. W. H. Baldwin, of New South Memphis.

The Mortality of Baltimore.—Consumption, pneumonia, Bright's disease and organic heart diseases were responsible for an increased death rate in Baltimore for the week ending March 23rd. A total of 244 persons died from different ailments, compared with 231 for the corresponding week of 1906, 234 in 1905, and 236 in 1904. Consumption caused 43, pneumonia 41, organic heart diseases 24, and Bright's disease 23 of the deaths reported. Other diseases proved fatal at the following rate: Typhoid fever, 1; measles, 2; whooping cough, 1; diphtheria, 2; influenza, 4; cancer, 9; apoplexy, 8; bronchitis, 3; congenital debility, 18; old age, 3. There were two suicides, two homicides, and 16 fatal accidents during the week. The annual death rate in 1,000 of the entire population was 22.09. For the white population alone the rate was 19.60, while for the colored population alone it was 35.24. The nativity of the decedents was: United States, whites, 146; foreign, 35; colored, 57; unknown, 6. Thirteen deaths occurred at Bayview Asylum, 28 in hospitals, and 14 in other institutions. Thirty-nine coroners' inquests were held. The following number of cases of infectious diseases were reported, as compared with the corresponding week of last year:

	1906.	1907.
Smallpox	2	2
Diphtheria	21	15
Pseudomembranous croup	1	1
Scarlet fever	8	4
Typhoid fever	9	14
Measles	8	130
Mumps	1	4
Whooping cough	2	2
Chick-pox	1	10
Consumption	9	27

CHICAGO AND THE WEST

A Convention of Secretaries of the Medical Societies in Ohio has been called by Dr. B. R. McClellan, president of the Ohio State Medical Association, to meet at Columbus on April 25, 1907, for the purpose of considering the opportunities and obligations peculiar to the office of secretary.

The Hempstead Academy of Medicine of Scioto County, Ohio.—At the last meeting of this academy, held recently at Portsmouth, a resolution was unanimously passed that after July 1, 1907, the minimum fee for complete examination for life insurance, including uranalysis, for old line companies, shall be \$5.

Statement of Mortality of Chicago for the Week Ending March 16, 1907.

As compared with the preceding week, and with the corresponding week of 1906, the mortality computed on United States Census Bureau's figures of midyear populations—2,107,620 for 1907; 2,049,185 for 1906:

	1907.	1906.	1905.
Total deaths in week	244	231	236
Annual death rate in 1,000	16.92	16.08	16.25
Sexes			
Males	101	98	100
Females	143	133	136
Age			
Under 1 year of age	149	124	130
Between 1 and 4 years of age	6	6	6
Between 5 and 14 years of age	14	14	14
Between 15 and 64 years of age	188	219	191
Over 64 years of age	107	116	116
Important diseases			
Apoplexy	24	6	1
Bright's diseases	40	17	1
Bronchitis	23	18	22
Congenital debility	18	8	1
Cancer	34	26	30
Cardiac diseases	10	14	14
Diphtheria	6	9	9
Heart diseases	52	53	57
Hemiplegia	3	10	6
Infectious diseases	26	29	23
Measles	1	1	1
Nervous diseases	19	24	27
Pertussis	18	12	10
Scarlet fever	18	27	0
Smallpox	0	0	2
Stomach	11	7	1
Typhoid fever	9	14	1
Various other (incl. sun-stroke)	36	22	2
Whooping cough	2	6	2
All other causes	133	141	142

GENERAL

Medical Inquiry Office in Berlin.—In the Kaiserin Friedrich-Haus in Berlin (Luisenplatz 2-4) there will be established a medical inquiry office. The main object of this is to assist foreign physicians who come to Berlin to study. This office is intended to give information regarding all lectures, free lectures, and lectures to be paid for, in Berlin, further information concerning medical establishments, hospitals, collections, etc., at what times and under which conditions they may be visited, finally regarding lectures at the clinics or lectures of medical societies, and opportunities for watching operations in clinics and hospitals. All information is given *free of charge*. The office will give to the numerous physicians who visit the Kaiserin Friedrich-Haus, in order to inspect the medical establishments and exhibitions of Berlin, a welcome opportunity to be informed without any trouble, on all questions concerning the medical Berlin.

Medical Notes from the Canadian Northwest.—The Regina, Saskatchewan, Medical Society met on the 7th of January, when the arrangement regarding lodge practice among the members was renewed for another year.

The Calgary, Alberta, Medical Society met on the 12th of February and a special meeting was held on the 19th. The question of lodge practice and reciprocity with other provinces was discussed.

The Northern Alberta Medical Association has elected the following officers for six months: President, Dr. Leman; first vice-president, Dr. A. Blas; second vice-president, Dr. A. Archibald; secretary-treasurer, Dr. W. W. Smith.

There were 120 patients admitted to the Brandon, Manitoba, General Hospital in 1906.

A new hospital for 100 beds is being built in Calgary, Alberta, to be known as the Holy Cross Hospital.

The population of Manitoba, Saskatchewan, and Alberta is over 800,000. In the two asylums for the insane in the three provinces there are a few less than 800 inmates.

A hospital for infectious diseases is to be built in Regina. The Calgary Board of Trade has asked the Dominion government to establish a sanatorium for consumptives near that city.

The number of cases of typhoid fever in Winnipeg in 1905 was 1,841; in 1906, 1,426. In the later year 109 fever patients died. In the former, there were 138 deaths.

Personal.—Dr. Henry Watson, United States Immigration Medical Officer at Winnipeg, has recovered from a very severe illness; Dr. D. Low, of Regina, is visiting in the West Indies; Dr. W. Stevenson, of Virden, Manitoba, is visiting the hospitals in Chicago; Dr. William Black, of Winnipeg, is visiting the hospitals in New York; Dr. J. Hardie, of Morden, Manitoba, has gone to Edinburgh for postgraduate work.

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

MAY 18, 1907

1. Common Bacterial Infections of the Digestive Tract and the Intoxications Arising Therefrom, By CHRISTIAN A. HERTER.
2. The Relation of Diseases of the Nasal Accessory Sinuses to Disease of the Eyes, By FRANK E. BRAWLEY.
3. To What Extent Can the Gynecologist Prevent and Cure Insanity in Women? By W. O. HENRY.
4. The Nomenclature of Endometritis, By ERNEST F. TUCKER, HENRY O. MARCY, and JOHN G. CLARK.
5. Conjugate Deviation of the Eyes and Head and Disorders of the Associated Ocular Movements (*To be continued*), By T. H. WEISENBURG.
6. The Relation of Eye Strain to Chronic Headaches, By S. W. S. TOMS.
7. Results of the Examination of Students' Eyes in the Department of Physical Education, University of Pennsylvania, By WILLIAM CAMPBELL POSEY and R. TAIT MCKENZIE.
8. The Danger of Dust as a Cause of Tuberculosis in Domestic Households, Clubs, Hotels, Schools, and Certain Other Establishments, By GEORGE HOMAN.
9. The Value of Sulphates in Carbolic Acid Poisoning, By TORALD SOLLMANN and EDGAR D. BROWN.
10. Simple Ulcer of the Bladder, By GEORGE WALKER.
11. Etiology and Pathology of Traumatic Rupture of the Abdominal Viscera, By EMANUEL J. SENN.

1. The Common Bacterial Infections of the Digestive Tract and the Intoxications Arising Therefrom.—Herter states that the difficulties which beset our efforts to control and modify excessive intestinal putrefaction are obvious. Although the cases arrange themselves in groups, everyone presents certain points of difference. Our experience is so incomplete that as yet our efforts are more or less experimental. Notwithstanding this, one may lay down rules for partial guidance that are based on certain principles, but a careful regard for individual traits is imperative. He distinguishes three types: 1. The indolic type of chronic excessive intestinal putrefaction. This is marked by striking indicanuria and probably is due to members of the *B. coli* group. 2. The saccharobutyric type of chronic excessive intestinal putrefaction, which seems to be initiated chiefly by the anaerobic forms. In its simplest examples there is very little indol in the gut. 3. A combined type, or cases combining the characteristics of Groups 1 and 2. The following principles must be regarded in treating all the three types of putrefaction: (1) Avoidance of continued reinfection that follows the ingestion of putrefactive bacteria with the food; (2) the promotion of prompt digestion and rapid absorption from the small intestine; (3) the reduction of the number of putrefactive anaerobes in the ileum and colon. In considering the prognosis in these patients, the duration of the condition is as important as its intensity. Better results are obtained in those cases induced by gross errors of life, the correction of which is followed by improvement or complete recovery. In a highly neurotic person the outlook is less hopeful. A protracted rest for two or three years, with careful attention to the principles of treatment laid down, offers the best hope of health.

2. The Relation of Diseases of the Nasal Accessory Sinuses to Disease of the Eyes.—Brawley remarks that the treatment of iridocyclitis is operative. The middle turbinal should be cocaineized and a notch made at the point of its anterior insertion into the lateral nasal wall, a Myles punch being used. The free end of a wire loop on a Krause snare is now introduced into the notch, where it is held firmly while the canula of the snare is pushed along the under surface of the middle turbinal as far as is considered necessary. Closing the

snare gives a clean cut, smooth edged wound which rapidly heals. In case the turbinal is not large, much useful tissue may be saved by merely punching out a portion along its line of insertion, thus uncovering the hiatus. As a rule, probing and irrigation are unnecessary, and when carried out always leave room for doubt as to the part they play in producing the mucopus occasionally found.

3. To What Extent Can the Gynecologist Prevent and Cure Insanity in Women?—Henry insists that the gynecologist can prevent the occurrence of insanity in many women with very unstable nervous organization if he will, by treatment or operation, remove all pelvic irritation; and, again, he may cure various forms of insanity in women if such irritation is entirely removed, and it is important not to substitute a lesser form of irritation in getting rid of the more serious one. Conservative treatment and operations are all right, if they really secure complete removal of all pelvic irritation; but to get all the results we have a right to expect from gynecology, and which we can undoubtedly secure in a very large proportion of cases, we must wholly eradicate the pelvic irritation by whatever means are necessary, no matter how radical the work required.

7. Results of the Examination of Students' Eyes.—Posey and McKenzie examined 883 students of the University of Pennsylvania. Of these, 14.70 per cent. were noted as being myopic, while the remaining 85.30 per cent. were either hypermetropic or emmetropic. In the comparison which was made to ascertain the influence of age and study on the refraction, it was found that among 633 students in the two lower classes, 87.25 per cent. were hypermetropic and 12.75 per cent. were myopic, while of 261 students in the upper classes, 80.25 per cent. were hypermetropic and 19.75 were myopic. Five per cent. more of myopia was found in the professional department in scholars of a similar age than in the college department, this being doubtless accounted for by the fact that most of the scholars in the college come from private or city schools, where the eyes are properly protected, while the scholars in the professional schools come frequently from rural communities, where accurate refraction is impossible and the care of the eyes neglected. The average age of all the scholars examined was 21.4 years, and the statistics showed an increase of about 2.5 per cent. of myopia for each year during the four years of college life. Of the students examined, 609 had full visual acuity in each eye, 94 had full visual acuity in but one eye, while 180 had subnormal vision in both. In this latter class, 180 students, possessing subnormal vision in both eyes, were thus under a decided disadvantage in the performance of certain forms of class room work, irrespective of any possible ill effects to the eyes from uncorrected strain, while in the 94 students who possessed normal vision in but one eye, the student was perceptibly handicapped in the proper use of all scientific instruments. 303 students wore glasses; of these, 217 were hypermetropic and 86 myopic. 87 complained of headache; of this number, 47 wore glasses and 40 did not. Of those complaining of headache, 7.59 per cent. had subnormal vision, while the remaining 92.41 per cent. had full visual acuity, and on this account did not suspect their eyes of being at fault.

8. The Danger of Dust as a Cause of Tuberculosis.—Homan asserts that efforts toward the eradication of human tuberculosis will fail which do not take full account of household dust as a factor in the dissemination of that disease. Scientific tests have shown that the seeds of pulmonary tuberculosis, harbored within doors in the dried state, are capable of retaining their effective vitality for prolonged periods of time. Any method or procedure employed in inhabited buildings which causes dust to be disseminated must be considered as tending to spread the seeds of consumption. Hotels,

clubs, theatres, office buildings, schools, churches, and business establishments generally should be required by law to introduce and operate dustless methods of cleaning; this part of their mechanical equipment being as necessary as provision similarly made for warming, ventilation, and for fire protection and fire escape. The employment of dustless methods in private residences is urged as being equally imperative for the control and suppression of all forms of tuberculous disease.

9. The Value of Sulphates in Carbolic Acid Poisoning.—Sullivan and Brown found that chemical combination between phenol and sulphate does not occur outside of the body, neither in neutral nor in weakly acid nor in weakly alkaline solution. This excludes at once all possibility of chemical combination in the alimentary canal or in the blood. The blood pressure and convulsive effects of phenol are not modified in the slightest degree by intravenous injection of liberal quantities of sodium sulphate under any of the following conditions: When phenol, even in sublethal doses, is introduced into the stomach, and is followed within fifteen minutes by intravenous sulphate injection; when sublethal doses of phenol are injected intravenously, and followed promptly by the sulphate; when sublethal doses of phenol are injected intravenously after the sulphate injection; when an incubated mixture of phenol, sodium sulphate and sodium bicarbonate is compared with a solution of phenol in sodium chloride solution; when the sulphate is injected immediately after cardiac stoppage from lethal doses of phenol.

MEDICAL RECORD.

March 23, 1907.

1. Fracture Dislocation of the Spine, By SAMUEL LLOYD.
2. Pathological Changes in Fracture Dislocations of the Spine, By PETER E. BAILEY.
3. The Treatment of Fracture Dislocations of the Spine, By IRVING S. HAYNES.
4. Phototherapy in Nervous Disease, By A. D. ROCKWELL.
5. The Early Mobilization of Patients After Major Gynecological Operations, By ABRAHAM BROTHERS.
6. The Prognostic Value of the Diazo Reaction in Tuberculosis; with Interesting Observations as to Racial Differences in Whites and Blacks, By JOHN ROY WILLIAMS.

1, 2, and 3. Fracture Dislocation of the Spine.—Lloyd answers the question: What is the value of operation in injuries to the spinal cord as follows: 1. It removes depressed fragments of bone apparently lying against the cord. 2. It removes blood clots. 3. It allows the escape of exudate and makes room for inflammatory thickening. 4. If extensive hæmorrhage is present, either extradural or intradural, it relieves pressure from the cord. It has been shown that degeneration from pressure appears within four days. If a cord is injured by crush and not totally destroyed, the continued pressure of a blood clot may succeed in completing total destruction. 5. Traumatic spinal œdema may be of such extent as to demand greater space for enlargement of the cord to avoid further destruction of fibres. 6. There is absolutely no method by which one can early diagnosticate slight or great pressure of a fragment of bone, the pressure of a small or a large hæmatoma, whether there is a momentary pinch of the cord or slight pressure. 7. The fact that the cord looked normal in these cases does not preclude the possibility that pressure had existed, nor prove that a condition had existed in which drainage and relief of pressure were not distinctly beneficial. 8. The patients did not suffer from any ill effect of the operation *per se*. The dangers of operation are very slight compared to the possible benefit, and the further satisfaction is obtained that the surgeon knows that continued pressure does not exist. Typical symptoms of a complete transverse lesion are not infallible, in which case the surgeon is not doing all in his power to relieve the patient's con-

dition unless he operates.—Bailey, in speaking of the question of repair and recovery after fracture dislocation, says: The injury to the cord takes place at the time of the trauma. The cord is bruised or lacerated, or compressed, as the case may be. As a result, there ensue more or less softening and shrinking of the cord. The true damage, therefore, is a result of the initial and brief violence, the secondary and long continued pressure which may result from a narrowing of the canal having little or no effect. It is as though a banana were in a tube and the tube were suddenly narrowed to half its size, all the injury to the banana would have occurred at the time of compression. So with the spinal cord. It is neither firm enough nor elastic enough, nor tough enough to offer any substantial resistance to compression. The question of regeneration he treats by asking: Do nerve fibres of the spinal cord, which have once been actually severed in their continuity, regenerate? In no experiment on a cold blooded animal has it been possible to divide the spinal cord completely and then secure a restitution of conducting function. Schmaus has shown that a divided spinal cord can be reunited by nerve fibres in case some of the bloodvessel carrying tissue is left, that it is along this tissue that the new fibres push their way. But such fibres are few in number, embryonic in character, and form no connecting link of function between the two ends.—Haynes gives the following conditions as justifying the operation of laminectomy, independent of whether the operation will or will not benefit the primary lesion in the spine: 1. To remove pressure from bone, whether the posterior arch of a vertebra or only spiculae of bone. 2. To arrest hæmorrhage, remove blood clots, and arrest an advancing paralysis. 3. To allow oozing in traumatic œdema of the cord. 4. To provide drainage in septic conditions involving the cord. The operation should be early, as then it will allow of the removal of the laminae, or pieces of bone which are constricting or pressing into the cord, will furnish an opportunity to arrest hæmorrhage, and so prevent pressure from a blood clot, and will provide an outlet for the œdema, which often follows spinal injury.

4. Phototherapy in Nervous Disease.—Rockwell observes that the basis of the action of the light bath in disease would seem to be four: 1. Its bactericidal power. 2. As a promoter of tissue metabolism. 3. Its influence in increasing the hæmoglobin carrying power of the red corpuscles. 4. Its analgesic properties, due to its power to relieve blood pressure through induced congestion of superficial vessels, and to its infinitely rapid vibratory action on the nerve units of the body.

5. The Early Mobilization of Patients After Major Gynecological Operations.—Brothers mentions the following contraindications to the early mobilization of patients after major gynecological operations: (1) Shock or collapse preceding, during, or subsequent to operation; (2) organic lesions of the heart, kidneys, or bloodvessels; (3) debilitated or senile patients; (4) rapid heart action after operation, with or without rise of temperature; (5) persistent elevation of temperature, after operation, from any cause; (6) signs of peritonitis; (7) hernia operations; (8) complications like pneumonia, diarrhoea, dysentery, etc.; (9) after suspension, fixation, and prolapsus operations; (10) in vaginal plastic operations (especially on the perinæum) associated with laparotomy; (11) in drained and suppurating abdominal wounds. Early mobilization, he says, tends to overcome ordinary vomiting, accumulation of intestinal flatus, and bronchial irritation from retained secretions in the air passages. Instead of contributing additional risks to the possibilities of thrombosis and embolism, he thinks that, in the absence of septic infection, the early moving about of these patients actually tends to reduce these risks. The morale of these patients is always wonderfully improved, and a

tendency to debility, hysteria, and mental states of depression and anxiety correspondingly diminished. The total result, therefore, is an earlier and more pleasant convalescence.

6. The Prognostic Value of the Diazo Reaction in Tuberculosis.—Williams thinks that for accuracy, should the fresh specimen fail to give the diazo reaction, we should allow the urine to stand for twenty-four hours and examine again. Having made the test, the foam failing to show the reaction, the mixture should be allowed to stand for twenty-four hours to see if there is or is not formed a greenish precipitate. The absence of a diazo reaction in white tuberculous cases is of a favorable prognosis, as a rule, while it is of an unfavorable prognostic value. But the absence of the diazo reaction in the tuberculous negro is of no prognostic value. There is possibly a racial difference between the whites and blacks which accounts for the absence of the diazo reaction in the urine of the tuberculous negro, and the presence of the diazo reaction in the urine of the white tuberculous in the advanced stage.

BRITISH MEDICAL JOURNAL.

March 9, 1907.

1. A Series of Five Cases of Friedreich's Ataxy Occurring in Two Families, By T. W. GRIFFITH.
2. The Treatment of Incipient Insanity and Borderland Cases of Insanity in General Practice, By E. W. WHITE.
3. A Case of Cerebellar Abscess: Evacuation: Recovery, By L. B. RAWLING.
4. Total Enucleation of the Prostate for Radical Cure of Enlargement of that Organ. A Further Series of One Hundred and Nineteen Cases of the Operation, By P. J. FREYER.
5. Cases of Tetanus Treated with Antitetanic Serum: Recovery, By W. W. HALL, E. G. CARTER, and C. R. HOWARD.
6. The Staining of Animal Parasites, By I. W. HALL.
7. Kala-azar—*Milroy Lectures, III.*, By L. ROGERS.

1. Friedreich's Ataxy.—Griffith's paper is based on two series of cases in as many families, of the hereditary form of ataxy usually known as Friedreich's ataxy. The patients in the first series were two sisters, aged, respectively, seventeen and ten years; the three patients in the second series were two brothers and a sister, aged twenty-nine, eighteen, and twenty-seven years, respectively. The morbid anatomical changes found in these cases post mortem are probably of purely degenerative character or due to certain imperfections of development—not inflammatory or toxic. There is a combined posterior and lateral sclerosis, but the changes in the posterior columns are more marked in the lumbar part of the cord than in the dorsal, and the posterior nerve roots are involved somewhat as they are in tabes. Friedreich's ataxia resembles locomotor ataxia in the presence of ataxy and the loss of the knee jerk. The coexistence of actual muscular weakness, the presence of nystagmus and of speech defects, the curvature of the spine, the deformity of the feet, and the extensor character of the plantar reflex, are all positive signs in favor of Friedreich's ataxia. The hereditary tendency, the early onset, the absence of optic atrophy, of the Argyll Robertson pupil, and of shooting pains, crises, and trophic lesions, all point in the same direction. Locomotor ataxia in young people as the result of a general hereditary syphilitic taint is often confounded with Friedreich's ataxia. Gross disease, such as tumor of the cerebellum, is accompanied by pain, vomiting, and optic neuritis. In ataxic paraplegia the knee jerk is increased, the onset is later in life, and there is no hereditary tendency. Disseminated sclerosis has only a superficial resemblance to Friedreich's disease. As regards treatment, nothing can be done to check the progress of the disease, beyond encouraging the patient to take exercise and

continue his work, employing massage and passive movements, and using measures to maintain a high standard of general health and ward off complications.

2. The Treatment of Incipient Insanity.—White classifies incipient and borderland cases of insanity as follows: Forms met with in early life. The backward or deficient. Abnormalities in infants are often unnoticed until the child fails to begin to talk or to take notice. Little can be done in these early developmental failures, as they represent states of amentia. In such cases treatment is definite. The higher education must be discarded once and for all. The powers of observation must be utilized as far as possible. Boys can be taught the handicrafts, girls the ordinary domestic duties and music. Physical exercises and outdoor games should be encouraged with daily regularity, and constipation, often habitual in these cases, guarded against. A sluggish circulation always accompanies a poor intellect. The epileptic. Epilepsy is both an accompaniment and a cause of mental unsoundness in the young. The youthful epileptic, incipiently insane, must lead a country life with outdoor employment and exercise, and follow some handicraft. The periods of mental unsoundness in the epileptic occur either before or after the fits, or when unsoundness replaces the fits in masked epilepsy. These patients are greatly addicted to masturbation; for this they must be watched and corrected; cold baths in the morning, plenty of exercise during the day, a minimum of animal food, a hard mattress and cool bed, tend to overcome this moral defect. The nervous. The children of neurotic, ill balanced parents require careful management. They are highly strung, restless, excitable, thin, and delicate, but are very receptive and intelligent. They must have short lessons, reside at the seaside where the climate is bracing, and have abundance of outdoor air and recreation, but no unnatural excitement. The moral imbecile. This is a child with a morbid defect in the feelings, affections, inclinations, temper, habits, and moral dispositions. Intellectually, there is little if any abnormality. He is unkind, cruel, and irritable; sulks when corrected, lies, and is addicted to petty thefts; the victim of bad habits, sexual immorality, masturbation, and sexual perversion. Such children must be placed under strict discipline. They are generally of robust constitution and need abundance of physical exercise. The incipient melancholic and maniacal. Mania is very rare before puberty is fully established; melancholia is also rare, but less so than mania. Mental unsoundness is, however, frequently associated with developing manhood and womanhood. All such patients are liable to act impulsively and without warning, and frequently they attempt suicide. Removal from home and change of surroundings are essential. They can be well treated as single cases, even without certification. When mania occurs in the young there is generally some insane inheritance and definite exciting cause. The mania is usually preceded by an incipient stage of depression. Sea voyages should never be recommended in cases of incipient melancholia, as the risk of suicide by drowning is too great. The borderland delusional. Many hypochondriacal cases come under this head. The mental unsoundness associated with self abuse is often characterized by hallucinations of ordinary sensation. The premature dement. This is a better term than *Dementia præcox*, and depicts the mental decadence occurring between puberty and adolescence. The predisposing cause is a neurotic inheritance in town dwellers where hypercivilization obtains, and the exciting causes are over education, febrile disorders, influenza, and stress. Forms met with in adult life. Incipient mania and melancholia. The early symptoms should be recognized and treated by the medi-

cal attendant. The patient and those around him must be safeguarded, and all sources of danger removed. But restraint by straitjacket or other means is never justified. Hot baths are of value. It must be borne in mind that the melancholic patient who fears injury at the hands of others, is prone to suicide. Borderland delusional insanity. Delusions of persecution are common, and many refer to the various bodily organs. Where the delusion refers to a single individual, has no basis of existence, and is often repeated with threats of bodily harm, action must be taken lest a criminal assault ensue. These cases are always chronic. Borderland alcoholic insanity. This is the outcome of chronic abuse of stimulants, and the treatment is to remove the cause, build up the system, and divert the mind. Forms met with in old age. Incipient senile mania and melancholia; borderland paralytic insanity; and incipient senile dementia.

LANCET.

March 9, 1907.

1. *Pyorrhœa Alveolaris* (*Pyorrhœa Wilson Lectures*).
By K. W. GOADBY.
2. Kala Azar, Its Differentiation and Its Epidemiology (*Milroy Lectures, III.*).
By L. ROGERS.
3. Insanity, with Special Reference to Prognosis (*Morrison Lectures, II.*).
By A. R. URQUHART.
4. The Postoperative Treatment of Congenital Dislocation of the Hip Joint.
By J. J. CLARKE.
5. Some Observations on Uterine Fibroids: Based on a Series of One Hundred and Fifty Consecutive Cases Treated by Abdominal Operation. By A. E. GILES.
6. Operative Treatment of Traumatic Psychosis.
By B. HOLLANDER.
7. A National School for Consumptives: a Study of the Relation of the Sanatorium to the Problem of the Working Class Consumptive.
By C. H. GARLAND and T. D. LISTER.

1. **Pyorrhœa Alveolaris.**—Goadby states that pyorrhœa alveolaris has been known since 1867 as Riggs's disease. The gums at the dental margins where the transition from mucous to dental periosteum takes place are particularly liable to a small degree of traumatism from the food, and to passive injuries from the accumulation of debris. Accumulation of salivary deposit also causes passive congestion of the gum margin. An anatomical peculiarity of the gum margin is the small amount of sensory nerve supply, rendered necessary by the provision for mastication, but which allows small abrasions and wounds to pass unnoticed. Many disease conditions have been cited as predisposing causes of pyorrhœa, such as diabetes mellitus, rickets, typhoid fever, and repeated pregnancies. The exceedingly insidious onset and great chronicity of the disease point to the preliminary stage of infection as either a local infection around two or more teeth, or a general infection spreading from the buccal mucous membrane. In the early stages the gums are red and thickened, but there is no pus; gradually pockets form between the teeth and the gum, and these fill with pus. Pain is an uncommon symptom. A more serious question than the local infection is the general infection which occurs in early as well as late alveolar pyorrhœa. Infection takes place from the gums by three channels: 1. Spread of infection by continuity of tissue, by which the antrum, the eye, and the ear become infected. 2. The ingestion of bacteria and bacterial products by way of the stomach. 3. Direct entrance of bacteria and their toxins by way of the gum. Secondary anæmia is the commonest general symptom; next comes various forms of toxæmic gastrointestinal disturbances; and then pigmentation of the skin, acneiform eruptions, and other skin affections. Depression, often amounting to melancholia, is not rare. The author has made a careful bacteriological study of a large number of cases, and found

that streptococci and staphylococci in about equal proportions, together made up sixty per cent. of the organisms present. After the particular organism was isolated in each case, a vaccine was prepared therefrom, and the opsonic index of the blood for that particular organism, raised by repeated inoculations. He found that after the positive phase of immunization had been produced, local treatment produced far better results. Curetting was unlikely to cause infection, and cauterized surfaces healed quickly. In seeking the ætiology and origin of the affection evidence is brought forward suggesting the derivation of the infecting bacteria from a common source of infection—milk.

5. **Uterine Fibroids.**—Giles, in the continuation of his paper, discusses the relation of fibroids to pregnancy, labor, and the menopause. The growth of a subperitoneal fibroid is but little influenced by pregnancy, and if its pedicle is moderately large it may remain undisturbed and undisturbing, and allow of a normal labor and puerperium. Twisting of the pedicle, however, may cause necrosis and peritonitis. When the tumor is in the lower uterine zone it may become incarcerated, its blood supply be interfered with, and degenerative changes ensue. An interstitial or submucous fibroid generally increases in size during pregnancy, but after confinement undergoes a measure of involution. Hæmorrhage is checked or arrested by pregnancy, partly because of the suppression of menstruation, and partly because the ovum acts as a plug in the uterus. Pain being usually due to inflammatory complications, is accentuated by the pressure of the enlarging uterus. Abdominal swelling and pressure effects are also intensified. Pregnancy may defer operation for the child's sake, or precipitate it for the mother's. Fibroids may cause abortion, incarceration of the uterus, obstructed labor, violent post partum hæmorrhage, or septic infection. The ostensible menopause is delayed in cases of fibroids, and menstruation—or, at least, uterine hæmorrhage—may continue for years. The severe losses of blood may imperil the patient's life or seriously impair her health. The cessation of hæmorrhage, when it does occur, does away with only one of the dangers incidental to fibroids: and the patient may be disabled for years by the pain and the weight of the tumor. The time of the menopause has its own special risks in relation to fibroids; the most important are degenerative changes in the tumors, and injurious pressure effects when a tumor which has occupied an abdominal position atrophies just sufficiently to allow of its falling into and filling the true pelvis. 4. When, in the vain hope that the menopause is going to work a cure, operation has been delayed year by year and then has to be undertaken in spite of complications and the enfeebled state of the patient, the danger of a fatal result is materially increased.

LA PRESSE MEDICALE.

February 20, 1907.

1. Infantile Hygiene. Artificial Feeding.
By PAUL LONDE.
2. Prophylaxis Against Typhoid Fever in the Army.
By BONNIER.

1. **Artificial Feeding of Infants.**—Londe discusses the quality of the milk to be used, and then presents an elaborate scheme for the gradual increase of its quantity from the third day after birth until the child is two years old.

February 23, 1907.

1. Rachistovaine and Scopolamine in Laparotomies.
By M. CHAPUT.
2. Digalene, Cloetta's Soluble Digitoxine.
By J. LAUMONIER.

3. Local Treatment of Syphilitic Gummata by Injection of Potassium Iodide, By F. TREMOLIERES.
4. Alimentary Hygiene and Microbiology, By R. ROMME.

1. Rachistovaine and Scopolamine in Laparotomies.—Chaput presents the following conclusions: 1. The anæsthesia produced by means of scopolamine followed by the lumbar injection of six centigrammes of stovacocaine is perfect, reaches as high as the sternum, and permits the easy and painless performance of laparotomies. 2. The patients are able to take food at once, rarely vomit, do not suffer from shock and have no albuminuria when the liver and kidney have not been interfered with. 3. The postoperative mortality is less than with general anæsthesia.

2. Digalene.—Laumonier describes the advantages possessed by digalene, a solution of three tenths of a milligramme of digitoxine in a cubic centimetre of glycerin water. It is very diffusible, which assures rapidity of action and of elimination, and absence of cumulation. It is slightly if at all irritant, and can therefore be used indefinitely by way of the stomach in chronic diseases of the heart, it is useful in patients who cannot tolerate digitalis, and in emergencies it can be employed for intramuscular and intravenous injections.

3. Local Treatment of Gummata by Injections of Potassium Iodide.—Tremolieres advocates the local injection of gummata with weak solutions of potassium iodide which he asserts are efficacious and not painful, as are those of strong solutions. The technique does not differ from that of the ordinary subcutaneous injection.

February 27, 1907.

1. The Electric Sleep, By STEPHANE LEDUC.
2. Schematic Treatment of Influenza in an Adult, By ALFRED MARTINET.

1. The Electric Sleep.—Leduc gives the name electric sleep to a condition analogous to that of chloroform anæsthesia, produced by a current of electricity upon the brain, administered in the manner which he describes. He states that in this sleep the subject lies without voluntary movement or sensibility to pain, that the condition may be maintained for several hours, and that it disappears instantly with the cessation of the current.

2. Schematic Treatment of Influenza.—Martinet divides an attack of grippe into three stages, a period of invasion, a period of defervescence, and a period of convalescence. In the first period the three primary indications are to relieve the pain, to check the nasopharyngeal catarrh, and to purge the bowels. At the next visit the bronchitis will demand attention, and a strictly vegetable diet should be prescribed. The author follows the schematic case from day to day, and gives suggestions with regard to the various conditions which may be met with.

March 2, 1907.

1. The Surgical Cure of Cancer of the Cervix Uteri, By J. L. FAURE.
2. Alcoholism and the Question of Wine, By R. ROMME.

1. The Surgical Cure of Cancer of the Cervix Uteri.—Faure speaks in very high terms of Wertheim's operation, which he believes gives better results than either the abdominal or vaginal hysterectomy as ordinarily performed. During the years 1902 to 1905 he has performed this operation on eighteen patients, twelve of whom survived. One of the twelve had an almost immediate recurrence, one disappeared from under observation, and one died from recurrence at the end of twenty-three months. The remaining nine are reported to be in good health and to present no sign of recurrence, the length of time which has elapsed since operation varying from one year and four months to four years and eight months.

LA SEMAINE MEDICALE.

February 20, 1907.

1. The Necessary Anatomical Conditions for the Production of Ileocaecal Invagination, By R. LERICHE and P. CAVAILLON.
2. Cancer and Internal Remedies, By L. LEGRAND.
3. Metrorrhagia from Syphilitic Lesions of the Uterus.

1. The Necessary Anatomical Conditions for the Production of Ileocaecal Invagination.—Leriche and Cavaillon declare that whatever the actuating cause of an invagination may be such an accident is impossible unless the cæcum is floating either at the extremity of a common mesentery or of a mesocæcum. Such a condition may be either congenital or acquired. According to their researches an invagination can occur in only seventeen per cent. of adults.

February 27, 1907.

Does Acute Dilatation of the Heart Exist?

By L. CHEINNISSE.

Acute Dilatation of the Heart.—Cheinnisse reviews the literature on this subject, and refers to many cases in which acute dilatation of the heart has been reported as the result of over exertion in athletic sports as well as in the course of various diseases, such as rheumatism, cancrum oris, malarial fever, and diphtheria, and considers that there is reason to admit the possibility of an acute dilatation of the heart of emotional origin.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT

March 5, 1907.

1. The Diagnosis of Barlow's Disease. Infantile Scurvy, By VON STARCK.
2. Concerning the Influence of Choline and of the Röntgen Rays Upon the Tissues of Pregnancy, By VON HIPPEL and PAGENSTECHER.
3. Concerning the Action of the Röntgen Rays Upon Animals On Which Nephrectomy Has Been Performed; A Contribution to the Question of Leucotoxines, By SCHMID and GERONNE.
4. The Force of the Percussion Blow, By GEIGEL.
5. Concerning the Value of the Benzidin Test for the Demonstration of Minimal Hæmorrhages From the Digestive and Urinary Organs, By SCHLESINGER and HOLST.
6. Operative Cure of an Anus Anomalous Vulvovestibularis in an Infant, By KRÖMER.
7. A Case of Jacksonian Epilepsy Treated by Operation, By AUERBACH and GROSSMANN.
8. Ovogal, a New Cholagogue, By RAHN.
9. Concerning Pendulous Lipomata of the Sinus Transversus Pericardii, By STRUPPLER.
10. Enophthalmos, By PAGENSTECHER.
11. Prophylaxis Against Ophthalmia Neonatorum, By SEEFELDER.
12. The Hammer Toe and Its Treatment, By WENDE.
13. Concerning Various Methods of Disinfection in East African Ports, By WAGNER.
14. Paul Julius Möbius, By WEYGANDT.

1. The Diagnosis of Infantile Scurvy.—Von Starck reports several cases of this disease, which is met with exclusively in children who are fed artificially, and presents the following as the important diagnostic symptoms: (1) Increasing anæmia; (2) hæmorrhagic swelling of the gums; (3) pains produced by motion; (4) swelling of one or more of the long bones; (5) hæmaturia; (6) hæmorrhagic swelling of the eyelids and exophthalmos. The prompt effect of nutritive treatment is sufficient to determine the diagnosis in doubtful cases.

2. The Influence of Choline and of the X Rays on Pregnancy.—Von Hippel and Pagenstecher have demonstrated experimentally that in rabbits pregnancy may be interrupted, or injury done to the fœtus by exposure of the mother to the x rays, or by the injection of choline.

3. The Action of the X Rays Upon Animals on Which Nephrectomy Has Been Performed.—Schmid and Geronne believe that the more rapid decrease of

leucocytes in animals in which nephrectomy has been performed as compared with healthy animals that have been subjected to the x rays depends upon the production of a leucotoxine which is excreted, at least in part, through the kidneys, but when these organs have been removed accumulate in the blood and produce the more rapid action referred to.

6. Operative Cure of an Anus Anomalous Vulvoves-tibularis in an Infant. Kromer describes a case of this nature in which the anal opening was in the lower part of the vulva and the normal situation of the anus was indicated by a blind depression. The rectum was dissected free and the opening fixed at the normal position by a plastic operation which is fully described. An excellent result was obtained.

7. A Case of Jacksonian Epilepsy Treated by Operation. Auerbach and Grossmann report the case of a boy, twelve years of age, who was subject to attacks of Jacksonian epilepsy. A quadrilateral flap of the tissues of the skull was elevated over the anterior and posterior central convolutions. There was a considerable escape of cerebrospinal fluid, and inspection of the surface of the brain showed an increased amount of fluid in the subarachnoid space. There was also a slight swelling of the posterior convolution, but nothing was obtained by either puncture or incision. The patient has apparently been greatly improved as the result of the operation. The report is followed by a general consideration of the operative treatment of epilepsy.

9. Pendulous Lipomata of the Sinus Transversus Pericardii.—Struppler describes a case in which there was found on autopsy two large, yellowish, wedge shaped tumors which covered the greater part of the ventricles and took their origin from the transverse sinus of the pericardium.

10. Enophthalmos.—Pagenstecher reports two cases of traumatic enophthalmos and one of intermittent exophthalmos and enophthalmos which was started by a retrobulbar hæmorrhage in early puberty just before the first menstruation of the patient.

LA RIFORMA MEDICA

February 16, 1907

1. Theories of Chemical Physics Applied to Pharmacology, By GAETANO GAVILLO.
2. Contribution to the Study of Cystinuria, By R. CARACCILO.
3. Collargol and Sodium Cocodylate in Experimental Trypanosomiasis, By ALDO MOSSAGLIA.
4. A Case of Initial Phagædonic Lesion of the Lower Lip, By C. PARENTI.

2. Cystinuria.—Caracciolo's case of cystinuria shows, to his mind, that this condition is dependent upon a disturbance of oxidation, which may be hereditary, as may also be oxaluria and "uric acid diathesis." In this case the condition was hereditary in the patient's family. No disturbances in his gastrointestinal tract pointed to any excessive or abnormal fermentation. There was undoubtedly a disturbance of metabolism as the patient eliminated only 15 grammes of urea in twenty-four hours and had a proportion of 68.1 to 1 of nitrogen to urea.

ROUSSKY VRATCH.

February 10, 1907

1. The Treatment of Acute Surgical Diseases by Hyperæmia, By V. N. TOMASCHEFSKI.
2. The Treatment of Otosclerosis by Faradic Currents, By M. TH. ZENOVITCH.
3. The Influence of Tobacco Smoke on the Arteries of Animals, By E. A. ZHEBROFSKI.
4. Pathogenesis and Operative Treatment of Prolapse of the Rectum.
5. Bier's Method in Gynæcology, By L. TH. NENADOVITCH.

1. Bier's Method in Acute Surgical Affections.—Tomaschefski finds, after an extensive trial at the surgical clinic of the Military Medical Academy of St. Petersburg, that Bier's method is not only indicated, but even compulsory in a large number of acute surgical affections. The method was used in seventy-five cases, including extensive phlegmons, carbuncles, etc., with much success.

3. Influence of Tobacco Smoke on Arteries.—Zhebrofski, in a preliminary communication, declares that his experimental work on animals has shown very marked pathological changes in the aortæ of rabbits after the inhalation of tobacco smoke. He is not prepared to say whether these changes are due to nicotine or to some other element in the smoke.

5. Bier's Method in Gynæcology.—Nenadovitch finds that active hyperæmia is more efficient in gynæcology than passive. The author's speculum and irrigator enables him to apply continuous hot irrigation in the vagina with active hyperæmia induced by suction. The speculum is also arranged for simple passive hyperæmia. The active hyperæmia with irrigation is applicable in acute conditions, as it is not painful.

February 17, 1907.

1. Experimental Inoculations of Embryonal Tissues and the Origin of Tumors, By N. N. PETROFF.
2. The Significance of Indican in the Urine, By V. I. SLOVTSOFF.
3. The Functional Disturbances of the Heart in Fibrinous Pneumonia (*To be continued*), By A. S. SOLOFTSOVA.
4. The Diagnosis of Injuries and Diseases in the Various Parts of the Brain (*To be concluded*), By A. A. TSHEPINSKI.
5. The Infant Mortality of Russia and Means of Combating It (*To be concluded*), By N. P. DANILOFF.

1. Inoculation of Embryonal Tissues in the Ætiological Study of Tumors.—Petroff finds that this mode of investigation promises a great deal. By inoculating embryonal tissue into the ovaries and kidneys of guinea pigs tumors were produced which continued to grow for several years. Reinoculation from these growths was unsuccessful. Further experiments are needed to make sure of these results.

2. Indican in the Urine.—Slovtsoff divides indicanuria into three forms: That due to intestinal fermentation; that due to suppuration somewhere in the body; and finally that due to the formation of indol in the cells of the body tissues. These forms may be known as metabolic, suppurative or septic, and intestinal, respectively. In the intestinal form the indican reaches its maximum four or five hours after the ingestion of food, is diminished by a milk diet, and by the administration of bismuth subnitrate. It is increased by the drinking of alkaline waters. In the septic type of indicanuria the symptom is marked and is maximal in the evening. It is not influenced by diet, by bismuth subnitrate, nor by alkaline waters, and is diminished by opening the septic focus. In the metabolic type indicanuria is moderate, occurs uniformly throughout the twenty-four hours, is diminished by milk diet, but not influenced by bismuth. It is moreover diminished by drinking alkaline mineral waters.

THE PRACTITIONER

March, 1907

1. The Diagnosis and Treatment of Infective Throat Conditions, By M. YOUNG.
2. Sphincteric Control of the Male Bladder and Its Relations to Prostatectomy, By C. A. BALL.
3. Some Remarks on Hæmoptysis and Its Treatment, By P. S. HICHENS.
4. A Note on Cæsarean Section Based on an Experience of Sixteen Cases, By A. J. WALLACE.
5. Post Partum Hæmorrhage, By E. H. TWEEDY.
6. Some Points Connected with Embolism, By A. HALL.
7. The Antiseptic Action of Metallic Sutures, By C. LEE HAM GREEN.

8. Remarks on the Measurement of the Neck of the Femur.
By J. H. PRINGLE.
9. Physical Methods of Treating Heart Disease, Diet,
By A. G. BENNETT.
10. The Science of the Stomach: A Review of Some Recent
Work,
By F. C. MOORE.
11. The Treatment of Sciatica,
By F. FOWLER.

1. Infective Throat Conditions.—Young calls attention to distinctive features of such conditions. Simple scarlatinal throat with its vivid red, its dysphagia, and absence of invasion of the larynx is usually unmistakable. One must exclude tonsillitis, measles, smallpox, diphtheria, and syphilis. In septic tonsillitis there is sudden onset, no vomiting, febrile pulse and temperature, and an erythematous rash, if any. Follicular tonsillitis differs from diphtheria in that the patches are mucoid and easily removed, but quickly reappear. The mucosa is bright red, while the exudate has no distinct edge such as is present in diphtheria. A patient with diphtheria is described as prostrate, pallid, pulseless, placid, painless, with putrid breath, and temperature about 102° F. Syphilis has a throat which is dusky red and injected with circular tonsillar ulcers; symmetrical erythema with mucous plaques on the soft palate and fauces all characteristic. Fauical erysipelas may often be diagnosed by its oedema. A septic sore throat which is due to infected milk, with general septic symptoms, is now occasionally seen. Other conditions mentioned are acute pneumococcal throat inflammation, streptococcal inflammation of the fauces, and a sore throat caused by inhalation of sewer gas.

2. Sphincteric Control of the Male Bladder.—Ball concludes that in order to prove positively that the internal sphincter vesicæ in man is the important muscle one must compare different forms of surgical interference in this region, especially with young persons in whom enlarged prostate can be excluded. With enlarged prostate the action of the internal sphincter is often greatly disturbed, and such interference may often explain inability to retain the urine when there is sudden desire to urinate. In such cases the compressor urethræ muscle develops increased activity to counteract this symptom. After prostatectomy has been performed the control of micturition is usually abnormal at first, but soon becomes normal, probably on account of the compensatory powers of the compressor urethral muscle. It remains to be determined whether the internal sphincter can act after suprapubic prostatectomy, and this should be ascertained by autopsies on those who have survived prostatectomy several years. It is considered incorrect to argue from operations on patients with enlarged prostate that the chief sphincter of the bladder is normally in the membranous urethra.

6. Some Points Connected with Embolism.—Hall observes that the circulatory system like any other system of pipes and tubes may get out of order, plugging or embolism being one of the possibilities. Embolism is favored by the variation in diameter of the vessels. It implies a preexisting morbid condition which produces in the blood stream a substance which cannot circulate. The position in the circulation where embolism occurs depends upon the size of the embolus. The circulation, with respect to embolism, may be divided into three parts, separated by impassable capillaries. One part extends from systemic venules to pulmonary arterioles, another from pulmonary venules to systemic arterioles, and a third from gastrointestinal venules to interlobular portal venules. Two types of embolism are considered, multiple embolic aneurysms and pulmonary embolisms. The former originate from valvular vegetations of the left heart associated with rheumatic or infective endocarditis, and are rapidly fatal if they attack the intracranial vessels. The latter usually begin as thrombi in the systemic veins, death

occurring suddenly with perhaps no precedent evidence of any serious condition.

7. The Antiseptic Action of Metallic Sutures.—Leedham-Green started his investigations with the recognition of the fact that some of the pure metals have evident power of inhibiting the growth of microorganisms. To put the matter to experimental test he inoculated a number of plates containing gelatine or agar agar with *Staphylococcus aureus*, and then immersed in the medium rings of various metals. The colonies grew freely, but in the case of some of the metals it was evident that a powerful inhibitory action upon such growth had taken place, a more or less distinct halo about the ring showing the extent of its bactericidal power. Gold, platinum, tin, aluminum, magnesium, and nickel, showed no inhibitory power, silver and lead only slight inhibitory power except when weak cultures grown at low temperature were used. Iron exhibited variable action as oxidation was favored or hindered. Copper, bronze, and brass showed the greatest inhibitory action. Bronze wire would seem to be an ideal material for sutures from an antiseptic point of view.

9. Physical Methods of Treating Heart Disease.—Bennett insists that in dealing with heart disease a preference should be given for solid food, as long as possible, since it occupies less space in proportion to its nourishing properties, while its presence favors peristaltic action and therefore circulation. The Salisbury steak, when carefully prepared, is greatly to be commended, as also cheese, peas, beans, and lentils. Green vegetables cannot be used exclusively as a diet. The carbohydrates must be selected with the following points in view: 1. Their liability to promote fermentation. 2. The patient with heart disease is not usually fed with the view of obtaining material for muscular exertion. 3. If muscular energy rather than muscle tissue is required meat and other proteids may be substituted for carbohydrates. Thorough cooking of starchy foods is essential. If liquid food is preferable in a given case, soups and milk will supply the requirements. The indigestion so common in cardiac disease can often be relieved by lessening the quantity of fluid ingested. The tendency of a milk diet to cause constipation in some cases of cardiac disease must also not be overlooked. Eggs should be eaten raw or only slightly boiled. Tea and coffee are recommended. Alcohol should be used in great moderation if at all, it is better to hold it in reserve for emergencies. Salines and green vegetables will often prove healthful adjuncts of diet.

11. The Treatment of Sciatica.—Fowler defines sciatica as pain in the sciatic nerve due to a primary localized interstitial neuritis. It may also be secondary to pressure, growth, or inflammation in structures contiguous to the nerve. It may also be simulated by various conditions. Toxæmia, sepsis, rheumatism, or gout, often predispose to it. It may be excited by pressure, strain, cold, etc. Active inflammation in the nerve and its sheath have been actually observed. Voluntary movement is rarely lost, and the muscles, though weak, seldom degenerate. Herpes and oedema of the leg are occasional symptoms. Rest in bed is the initial requirement in the treatment of this disease. The support of a splint is frequently helpful. The diet should be liberal, alcohol being excluded. Salines and blue pill are useful as aperients. Counterirritation by a variety of measures is often very effective, if this fails the nerve may be stretched. Galvanism and other forms of electricity are often beneficial, also x rays. In the later stages of the disease massage may be used, but not in the early stages. Hot baths are highly recommended. If anodynes are required a daily injection of hyoscine is preferable to any other narcotic.

Letters to the Editors.

RECURRENT VOLVULUS.

130 WEST FORTY-FOURTH STREET.

NEW YORK, MAY 21, 1907.

To the Editors: In the issue of your *Journal* for July 14, 1906, Moschcowitz published an interesting paper on the Prevention of the Recurrence of Volvulus in the Sigmoid Flexure, and mentioned surgical procedures which had been suggested to prevent such recurrence. As he does not mention a method that I employed successfully eight years ago, permit me to call attention to it.

The patient was a young, healthy, adult, male idiot, given to eating enormous quantities of farinaceous food. I operated upon him for volvulus of the sigmoid three times, at intervals of a few months. At the third operation, in order to prevent recurrence, after untwisting the sigmoid and emptying it, first by puncture and then by massage and rectal irrigation, I spread it out as far as it would go within the abdominal cavity. It reached easily to the cæcum and up to the epigastrium. I made a short incision in the appendicular region, and stitched the greatly hypertrophied wall of the sigmoid firmly to the anterior abdominal wall far over on the right side by a number of silk sutures.

This case is reported fully in the *Boston Medical and Surgical Journal* for 1899, Vol. cxi, p. 233. The patient died about three years ago, from tuberculosis. Up to the time of his death, about five years after his last operation, he had had no further trouble with his intestinal tract.

EDWARD M. FOOTE.

Proceedings of Societies.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting of December 5, 1906.

The President, Dr. ARTHUR V. MEIGS, in the Chair.

Cases Allied to Amaurotic Family Idiocy.—Dr. ALFRED GORDON exhibited two patients (see page 204).

Dr. F. X. DERCUM was in accord with Dr. Gordon that in the disease of amaurotic family idiocy there were at work a morphological factor with all the signs of arrested development and a process of chronic auto-intoxication. Regarding the studies which had been made and in which it had been stated that the behavior of the nerve cells suggested the action of a poison, he thought a very plausible explanation was that this poison was produced in the body and had resulted in some grossly defective metabolism or faulty action of persistently abnormal ductless glands.

Dr. HOWARD F. HANSELL, speaking of the eye examination, said there were presented the appearance of an absorption of the chorioid in places and in addition some typical signs of high myopia. The condition of myopia, however, he believed secondary to the more marked eye condition. The cases seen by Dr. Hansell prior to the ones exhibited had terminated fatally at an earlier age.

Dr. WALTER L. PYLE, from his examination of the records of such cases, said there were very few in which there was such perfect polydactylism as in the case presenting the six fingers and six toes of the four extremities.

Symptoms and Signs in Urinary Lithiasis.—Dr. CHARLES LESTER LEONARD said that, as the result of the study of 352 cases of suspected urinary lithiasis, calculi had been detected in seventy-one cases in which the accuracy of the Röntgen method had been confirmed by the recovery of the calculi. Of these

cases, forty-two were of ureteral calculi, and in twenty-eight of these cases the calculi had been passed under expectant medical treatment based upon the accurate Röntgen diagnosis and the study of the symptoms and signs.

His study of the symptoms and signs showed that it was impossible to distinguish calculous disease from other intraureteral or extraureteral and renal conditions without the Röntgen method; that this method should be employed in every case, since it cleared the field by detecting or excluding calculi; that the symptoms and signs were of particular value in studying the question of treatment; that the indications were dependent upon the size of the calculus and upon the symptom complex; that the detection of a calculus by the Röntgen method did not always form an indication for operation; and that a distinction could be approximately made between ureteral and renal colic, and also between involvement of the upper and of the lower portion of the ureter. Ureteral calculus in the juxta-vesical portion of the ureter produced symptoms very closely resembling those of vesical calculus. While the presence of an undetected calculus might be a grave danger and a menace to the integrity of the kidney, as soon as its exact size and situation were known that menace ceased, unless there were symptoms present indicating progressive impairment of the function of the kidney. In every case, therefore, presenting suspicious symptoms he believed it essential to the preservation of the integrity of the kidney to determine whether a calculus was present or not, and if one was present, whether it was occlusive or had passed into or out of the bladder. Without the accurate knowledge obtainable in such cases by the Röntgen method the patient was in grave danger, as all symptoms might subside and yet most serious injury result by complete occlusion of the ureter and consequent atrophy of the kidney. In none of the cases with diseased kidneys had any symptom ever arisen indicating a systemic injury as the result of the Röntgen examination.

Dr. JOHN H. GIBBON referred to five recent operations for ureteral calculi and to the difficulty of their diagnosis.

Dr. JAMES TYSON spoke of the cases simulating stone in the kidney. In such cases there had been found adhesion of the capsule of the kidney to the substance of the organ and to the neighboring fat and tissues. Relief usually followed the stripping up and pushing back of the capsule of the kidney.

Dr. ROBERT N. WILLSON referred to a case which Dr. John B. Roberts had seen with him in which the question arising was that of whether there was stone in the kidney or a floating kidney, which question had not yet been determined. The x ray had shown entire absence of any concretion in either ureter or kidney. There were periodical attacks of pain typical of renal colic. Pus and blood would appear and disappear. An explanation of such cases suggested by German writers was the transmission of a nervous condition, probably through the splanchnic plexus, to the bowel.

Dr. JOHN B. ROBERTS thought that in women Kelly's method of passing a small ureteral bougie covered with wax up into the ureter, and ascertaining on its withdrawal if it was scratched by a stone, might at times be of great service. This, however, required great dexterity, which many did not possess.

Dr. LEONARD said he had had a number of cases in which he had been able to detect the presence of pus in the pelvis of the kidney. The pus had been withdrawn and the kidney washed out, with subsequent cure. In a number of cases of suspected stone, relief of symptoms had followed the x ray exposure, showing, of course, a mental cure rather than physical. In the three hundred and fifty odd cases he had examined

for suspected stone in which the kidney was the seat of the disease there had been no evidence of deleterious effect from the exposure of the patient to the x ray.

Extensive Leucoplakia Beginning in Childhood, Accompanied in the Early Stages by Follicular Keratosis and Followed by Carcinoma of the Tongue.—Dr. M. B. HARTZELL read this paper, reporting an extensive leucoplakia involving the entire buccal mucous membrane, occurring in a girl of eleven years, associated with keratosis of the follicles of the skin. After a duration of fifteen years, cancer of the tongue developed, necessitating excision of half this organ. The association of keratosis of the skin and mucous membrane was said to indicate, in exceptional cases, that the disease might be due to some constitutional fault, rather than to a local cause. Weak ointments of salicylic acid and the x ray had been found by the author curative in some cases of leucoplakia.

Meeting of January 14, 1907.

The President, Dr. WILLIAM E. HUGHES, in the Chair.

Chronic Intestinal Autointoxication.—Dr. F. FORCHHEIMER, of Cincinnati, in presenting this paper, said that intestinal autointoxication might be defined as that condition in which toxins formed in the intestines were absorbed by the organism in which they were produced. The use of this term, he said, had been objected to and that of enterotoxism or intestinal toxæmia substituted. Strictly speaking, only that process should be called autointoxication which was caused by the toxic bodies resulting from metabolism and not due to any exogenous cause such as bacterial activity. Attention was called to an analysis of seventy-seven cases examined by the ordinary clinical methods in which intestinal autointoxication was believed to be present. Children were excluded because the clinical picture in them differed very much from that in the adults. In concluding the paper Dr. Forchheimer said that if the endeavor was made to get a composite picture from what had been said in order that the diagnosis of chronic interstitial autointoxication might be made the following would have to be taken into consideration:

1. In the gastrointestinal tract there were Riggs's disease, various forms of stomach troubles, change in functional activity of the colon, and demonstrable retention of feces due to one cause or another.

2. In a large percentage of the cases indican was increased in the urine, and a microscopical examination showed in a large percentage of cases calcium oxalate (50 per cent.); uric acid and urates (25 per cent.); red corpuscles (about 30 per cent.) in twenty-eight cases about 33½ per cent.; the alternation of polyuria with oliguria was noted.

3. Half of the number of female patients had menstrual trouble.

4. Next to Riggs's disease nervous symptoms were present in the largest number of patients. Of these thirty-one patients of the seventy-seven cases had headaches.

5. In a large number of patients (fifty-eight out of seventy-seven) cardiovascular changes were observed; over one half of these cases were due to neuroses and to myocardial conditions.

6. Of the seventy-seven cases, fifty patients had locomotor symptoms, gouty joints, but especially muscular symptoms.

7. Twenty-two patients had skin lesions. From the combination made by various symptoms, the diagnosis of chronic intestinal autointoxication should be easily made and, as a matter of fact, this was the case in prac-

tice, as was shown when this diagnosis was followed by the logical therapeutical measure. The great difficulty was pointed out of determining the importance of the intoxication in an individual case; whether it produced all the symptoms, whether it was the cause or the result of other conditions, whether it was the product or the predisposing cause. The greatest caution should be taken before chronic intestinal autointoxication should be looked upon as the final diagnosis. In the selected cases this diagnosis was made only ten times. In all the other cases the autointoxication was looked upon simply as a contributory cause present and requiring treatment, but not the principal disease.

Dr. HOBART A. HARE, in opening the discussion, said that in the condition of autointoxication in a large percentage of cases the effects of the toxic materials were exercised upon the nervous system, the muscles, and the joints, thus producing widely varying symptoms. Illustrative cases were cited. Certain articles of food were said to produce toxicity, and a case was related in which eggs some time after being eaten caused this effect. In some instances the chewing of a rubber band or chewing gum with the expectoration of the saliva aided in the elimination of the toxicity. One class of cases cited was that presenting a particular type of dull, constant headache for days or weeks, unrelieved by the ordinary methods, nearly always associated with the presence of excessive phosphates in the urine, the urine being alkaline. Another class of cases was unaccompanied by pain, but associated with profound melancholia and depression.

An important point in Dr. Hare's opinion was that of the activity of the kidneys in regard to the elimination of poison. He emphasized the need of renal purges instead of simply purges by the bowel. The necessity was pointed out of studying the condition of the bowels in relation to enteroptosis, believing that most of the poisons absorbed under these circumstances were from the intestine and not from the stomach, and that good results could not be secured until the enteroptosis was corrected. He referred to the two types of autointoxication: (1) That due to intestinal absorption; and (2) that due to faulty metabolism. These were frequently confounded and should be separated. The intestinal cases could be relieved to some extent by renal and intestinal purge and some drugs, while the second was not usually benefited to any great extent by these methods.

Dr. DAVID L. EDSALL, continuing the discussion, said that he had found from his investigations that the total of ethereal sulphate might be increased in the urine and yet indican or phenol, one or the other, occasionally both, might not be definitely increased, and that phenol was more irregular than either of the other. He believed that the increase of phenol was a comparatively uncommon thing and of some special significance. The examination of the urine, however, in this relation he regarded as absolutely valueless unless it was carried out repeatedly. The examination of the urine as an index to the existence of putrefactive processes, while in a large proportion of cases useful, in a large number of cases also was misleading. He believed, therefore, that from the examination of the urine alone the conclusion was not warranted as to whether abnormalities in the urine were the consequences of changes in the intestinal tract or the result of abnormalities in the liver, excretory, or various other organs in metabolism. His opinion was that the diagnosis of gastrointestinal autointoxication was a diagnosis which ought to be applied to cases in which there was found other and distinctive evidence by more perfect methods of disorder of the gastrointestinal tract.

Dr. JOSEPH SAILER said that the subject of gastrointestinal autointoxication had been to him a very hazy one. The chief difficulty in its study, he thought, was

that the work had been based largely upon certain symptoms which were by no means pathognomonic of the condition. He attached much importance to the study of the activity of the ferments in the gastric juice, and believed that there were unquestionably a great variety of conditions, both natural and artificial, which had the capacity of inhibiting ferment activity in the stomach and also a great variety of artificial conditions which had the capacity of limiting the ferment activity in the intestines. Mention was made of cases studied with reference to the acid content and clinical symptoms. Various cases of migraine, he said, could be brought on by certain food, relieved as soon as the diet was corrected. An interesting group was that in which the symptoms were referable to the peripheral nerves, only relieved by lavage of the stomach, purgation, and other treatment applied usually to the gastrointestinal tract. Reference was made to the use of the commercial preparations of trypsin.

Dr. J. DUTTON STEELE spoke of the significance of the faecal findings in intestinal autointoxication.

Dr. FORCHHEIMER, in closing, said that the object of the paper was to present a clinical picture of the whole condition, and not to present the presence of indican as a specific symptom in any way. He agreed with Dr. Edsall that examinations of the urine to be of value should be made repeatedly. If this was done and indican found in every specimen its presence was probably indicative of something abnormal. He had experimented largely in a clinical way with intestinal antiseptics, and believed a good mode of administration was in the salol shellac coated pill. One of the best antiseptics he believed to be beta naphthol. Next to this was menthol. Following this his choice was potassium permanganate. Calomel, of course, acted as an antiseptic, but he regarded castor oil as the best of all intestinal antiseptics, and if given freely it would produce as nearly as was possible asepsis of the intestines.

Book Notices.

A Manual of Prescription Writing. With a Full Explanation of the Methods of Correctly Writing Prescriptions, a Table of Doses Expressed in Both the Apothecaries' and Metric Systems, Rules for Avoiding Incompatibilities. By MATTHEW D. MANN, A. M., M. D., Professor of Obstetrics and Gynecology in the Medical Department of the University of Buffalo, etc. Revised by EDWARD COX MANN, M. D., Lecturer on Obstetrics, Medical Department of the University of Buffalo, etc. Sixth Edition, Revised, Enlarged, and Corrected According to the United States Pharmacopœia of 1906. New York: G. P. Putnam's Sons, 1907. Pp. x-232.

The first edition of this handy little manual appeared in 1878. To the notice which we gave of it we have only to add that the manual has fulfilled our expectations. The book has been in part rewritten, and this last edition has been made in conformity to the last edition of the pharmacopœia:

Many students who obtain a fair and available knowledge of other departments of medicine begin practice with a very imperfect acquaintance with the art of prescribing—an art which they are called upon to exercise at the very outset of practice, and under such circumstances as render it impossible to refer to textbooks. It is to supply this needed information that Dr. Mann has prepared the useful little volume to which we now direct attention. The scope and purport of the book are sufficiently indicated by the title, and we need not say more than that the author has very satisfactorily accomplished the task he undertook. The directions for prescription writing are clear and concise, and the

examples given in illustration are well chosen. The list of medicines with doses, in both the ordinary and the metric terms, will be found very convenient for reference, while the chapter on the metric system strikes us as the best we have yet seen. The work should be in the hands of every student of medicine, and might be perused with advantage by a great many practitioners.

Medical Diagnosis. A Manual for Students and Practitioners. By CHARLES LYMAN GREENE, M. D., Professor of the Theory and Practice of Medicine in the University of Minnesota; Attending Physician to St. Luke's Hospital, the City Hospital, and the St. Paul Free Dispensary, etc. With Seven Colored Plates and Two Hundred and Thirty Illustrations. Philadelphia: P. Blakiston's Son & Co., 1907. Pp. xvi-683. (Price, \$3.50.)

This is a valuable addition to the textbooks on medical diagnosis, although the author designates it as a manual. Students and practitioners alike will find it very convenient. A great accessory to its usefulness is to be found in the many illustrations, for even if the description of a disease is as explicit and concise as possible, it remains only theory, while a clear picture comes nearest to reality, practice. The book is well arranged, from the general diagnosis to the special, and without going too much into detail it avoids aphorisms. Added to it are chapters on some of the commoner feigned states, and a brief summary of the symptoms and treatment of acute poisoning.

Annual Report of the Board of Regents of the Smithsonian Institution. Showing the Operations, Expenditures, and Condition of the Institution for the Year Ending June 30, 1905. Washington: Government Printing Office, 1906. Pp. liv-576.

Of all the interesting contents of this report, four essays appeal to the physician: Progress in Radiography, by L. Gastine; Plague in India, by Charles Creighton; The Fight Against Yellow Fever, by A. Dastre; and Rudolph Albert von Kölliker, by William Stirling. None of these papers are original contributions; the first and third are translations from the French, while the second and fourth are reprints from English journals.

The Bacteriological Examination of Water Supplies. By WILLIAM G. SAVAGE, B. Sc., M. D. (Lond.), D. P. H., Medical Officer of Health and Public Analyst, Colchester; Late Lecturer on Bacteriology, University College, Cardiff, etc. London: H. K. Lewis, 1906. Pp. xvi-297. (Price, 6s. 6d.)

The author has not had an easy task before him. Many of the data upon which the bacteriological examination of water is based have not passed beyond the regions of controversy, and on not a few questions, some of which are of much importance, each bacteriologist is a law unto himself. But the author has skillfully drawn definite conclusions on such still undecided subjects. The book is divided into eighteen chapters. Chapters I to XIII form the first part, which can be called a scientific introduction to the second part, the main body of the book. This second part comprises chapters on the collection and transmission of samples, on general quantitative examination, and on methods of examination of water for certain bacilli. An appendix is added, containing a summary of procedures for routine examination. This appendix is of the greatest practical importance and should appeal to every bacteriologist interested in this subject.

Prevalent Diseases of the Eye. A Reference Handbook, Especially Adapted to the Needs of the General Practitioner and the Medical Student. By SAMUEL THEOBALD, M. D., Clinical Professor of

Ophthalmology and Otology in the Johns Hopkins University, etc. With 219 Illustrations and 10 Colored Plates. Philadelphia: W. B. Saunders Company, 1906. Pp. iv-551. (Price: Cloth, \$4.50; half morocco, \$5.50.)

Dr. Theobald's title prepares us for a series of chapters on the commoner affections of the organ of vision, whereas he has given us a valuable textbook, complete and instructive, on practically all the diseases of the eye. At first glance this is misleading, but more careful perusal shows that the needs, and to some extent the limitations, of the general practitioner have been borne in mind, and that stress has been laid on the simpler methods of examination, diagnosis, and treatment. The chapters on the external examination of the eye, on general treatment, and on minor operations are particularly full and clear. The illustrations, both those in black and white and the colored plates, are of unusual excellence and well chosen. While not intended primarily for the specialist, but for those who are supposed to lack the experience and the paraphernalia necessary for accurate tests of the ocular muscles, the refraction, and the visual fields, the work will well repay careful study by the oculist, who will appreciate the author's command of his field and the excellent way in which he has presented the subject with a wealth of instructive detail and a minimum of abstraction.

The Diseases of the Nose, Throat, and Ear. By CHARLES PREVOST GRAYSON, A. M., M. D., Clinical Professor of Laryngology in the Medical Department of the University of Pennsylvania; Laryngologist and Otologist to the Philadelphia Hospital. Second Edition, Revised and Enlarged. Illustrated with 152 Engravings and 15 Plates in Colors and Monochrome. Philadelphia: Lea Brothers & Co., 1906. Pp. ix-17 to 532.

The second edition of Grayson's excellent textbook is enriched by the addition of a number of colored plates, many of them original, others from Laurens's recent work, and by the introduction of much new matter. We may again allude to a valuable feature of this work, namely, the fact that the author has in each instance chosen the most appropriate method of treatment, medical or operative, for the given condition, instead of confusing the reader with a multitude of therapeutic suggestions. Wherever it is of importance, stress is laid on the constitutional treatment, with the necessary details. The volume is a complete and very instructive guide.

BOOKS, PAMPHLETS, ETC., RECEIVED.

Annual Report of the Bureau of Health for the Philippine Islands. Victor G. Heiser, Director of Health. July 1, 1905-June 30, 1906. Manila: Bureau of Printing, 1906.

The Johns Hopkins Hospital Reports. Volume xiii: Studies in Urological Surgery. Volume xiv: Studies on Hypertrophy and Cancer of the Prostate. Baltimore: The Johns Hopkins Press, 1906.

The Nursling. The Feeding and Hygiene of Premature and Full Term Infants. By Pierre Budin, Professor of Obstetrics, University of Paris, etc. Authorized Translation by William J. Maloney, M. B., Ch. B., Fellow of the Obstetrical Society of Edinburgh. London: The Caxton Publishing Company, 1907.

Surgery of the Genitourinary Organs. By J. W. S. Gouley, M. D. New York: Rebman Company, 1907.

Anæsthetics and Their Administration. A Textbook for Medical and Dental Practitioners and Students. By Frederic W. Hewitt, M. V. C., M. A., M. D., Cantab., Anæsthetist to His Majesty the King, etc. Third edition. With Illustrations. London: Macmillan & Co., 1907.

Principles and Application of Local Treatment in Diseases of the Skin. By L. Duncan Bulkley, A. M., M. D., Physician to the New York Skin and Cancer Hospital, etc. New York: Rebman Company, 1907.

The American Society of Tropical Medicine. Papers Read Before the Society and Published Under Its Auspices. Volume ii, 1905-1907.

Miscellany.

Resolutions on the Death of Dr. William P. Brandegee.—The New York Otological Society adopted the following resolutions at the meeting on January 22, 1907:

Whereas, During the past summer death suddenly called from us our friend and fellow member, Dr. William P. Brandegee; and

Whereas, In his professional and private life he was known to us as an excellent example of all for which this society stands,

Be it Resolved, That we place upon record the deep sense of sorrow which we feel at the loss of our colleague, and that we extend our sincere sympathy and condolence to the bereaved family.

Be it Resolved, That a copy of these resolutions be sent to them, and a copy be sent to the medical journals for publication.

ARTHUR B. DUEL,
JAMES F. MCKERNON,
JOSEPH A. KENEFICK,
Committee.

The American Women's Table at Naples.—The Naples Table Association for Promoting Laboratory Research by Women wishes to call attention to the opportunities for research in zoology, botany, and physiology provided by the foundation of this table. The Zoological Station at Naples was opened by Professor Anton Dohrn in 1872 for the collection of biological material and for the study of all forms of plant and animal life. Under the personal direction of Professor Dohrn and his assistants the station has developed into an international institution for scientific research. Any government or association which pays five hundred dollars annually is assigned a table for research, and is entitled to appoint to it qualified students, who are provided by the station with all materials, apparatus, and assistance, free of cost. One table is sometimes used by four or five research students in the course of a year. This association, which was formed in 1898 to promote scientific research among women, is maintained by annual subscriptions of fifty dollars each. The year of the association begins in April, and all applications for the year 1907-8 should be sent to the secretary on or before March 1, 1907. The appointments are made by the executive committee.—*Science*, March 1, 1907.

The Antiquity of Adulteration.—In Fyvie's *Literary Eccentrics*, a volume of character sketches of recent publication, one of the "eccentrics," whose alleged doings are described, is Sir John Mandeville. It has been pretty definitely made out that Sir John never visited any of the countries which he described, but that is neither here nor there. One of the warnings which Mandeville gave to prospective pilgrims to Egypt in the fourteenth century referred to the danger of adulterated drugs, a warning which suggests twentieth century practices rather than those of a period six centuries earlier, for we are accustomed to regard the fraudulent adulteration of drugs as characteristic of our modern competitive civilization. But hear Sir John's warning: "And wit ye well that a man ought to take a good keep for to buy balm, but if he can know it right well, for he may right lightly be deceived. For men sell a gum that men clepe turpentine instead of balm, and they put thereto a little balm for to give good odour. And some put wax in oil of the wood of the fruit of the balm, and say that it is balm. And some distil cloves of Gilofre and of spikenard of Spain, and of other spices that be well smelling, and the liquor that goeth out thereof they clepe it balm; and they think that they have balm, and they have none. For the Saracens counterfeit it by subtlety of craft for to deceive the Christian men, as I have seen full many a

time; and after them the merchants and the apothecaries counterfeit it oftentimes, and then it is less worth, and a great deal worse." So it would appear that the adulteration of drugs is not the thing of recent growth which it is commonly supposed to be. The origin of the evil must date to a far distant time, probably to a period not long after the fall of Adam.—*American Druggist*, March 25, 1907.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending March 23, 1907.

Smallpox—United States.

Places.	Date.	Cases.	Deaths.
California—San Francisco	Mar. 2-9	1	1
Illinois—Chicago	Mar. 9-16	5	5
Indiana—Indianapolis	Feb. 24-Mar. 10	9	9
Iowa—Davenport	Mar. 1-15	1	1
Kansas—Lawrence	Feb. 1-28	1	1
Kansas—Topeka	Mar. 2-9	5	5
Louisiana—Shreveport	Feb. 23-Mar. 2	1	1
Ohio—Cincinnati	Mar. 8-15	1	1
Ohio—Cleveland	Mar. 8-15	1	1
Pennsylvania—Harrisburg	Feb. 28-Mar. 7	1	1
Tennessee—Nashville	Mar. 9-16	2	2
Wisconsin—Milwaukee	Mar. 2-9	2	2

Smallpox—Insular.

Philippine Islands—Mariveles
Quarantine Jan. 26-Feb. 2.... On Ss. *Pioneer*.

Smallpox—Foreign.

Africa—Cape Town	Jan. 26-Feb. 2	1	1
Argentina—Buenos Aires	Jan. 12-26	12	3
Brazil—Rio de Janeiro	Jan. 12-Feb. 16	26	1
Brazil—Rio de Janeiro	Feb. 2-9	1	1
Brazil—Pernambuco	Jan. 15-31	60	60
Brazil—Rio de Janeiro	Feb. 2-9	1	1
Canada—Digby County, N. S.	Feb. 2-9	36	3
China—Canton	Feb. 6-12	25	1
China—Shanghai	Jan. 6-12	1	1
Colombia—Cartagena	Jan. 24-Mar. 3	3	3
Ecuador—Guayaquil	Feb. 16-23	1	1
Egypt—Cairo	Feb. 18-25	3	3
France—Marseilles	Feb. 20-Mar. 6	1	1
Great Britain—Cardiff	Feb. 23-Mar. 2	1	1
Great Britain—Hull	Feb. 16-23	1	1
Gt. Britain—Newcastle-on-Tyne	Feb. 16-23	1	1
India—Calcutta	Feb. 2-9	50	50
Italy—Genoa	Feb. 1-28	7	7
Mexico—Azuara, Calientes	Mar. 2-9	2	2
Netherlands—Rotterdam	Feb. 23-Mar. 2	1	1
Russia—Odessa	Feb. 16-23	28	7
Russia—Vladivostok	Jan. 21-28	1	1
Spain—Malaga	Feb. 16-23	1	1
Turkey—Constantinople	Feb. 17-Mar. 3	3	3

Yellow Fever—United States.

Texas—Houston Mar. 17 1 1
From S.S. *Basil*, from Para.

Yellow Fever—Foreign.

Brazil—Para	Feb. 2-23	1	6
Brazil—Rio de Janeiro	Feb. 2-9	1	1
Ecuador—Guayaquil	Feb. 16-23	1	7

Cholera—Insular.

Philippine Islands—Provinces, Jan. 6-12 43 23

Cholera—Foreign.

Ceylon—Colombo	Jan. 26-Feb. 2	1	1
India—Calcutta	Feb. 2-9	105	105
Argentina—Buenos Aires	Jan. 12-26	3	1
Australia—Brisbane	Jan. 12-19	8	1
Brazil—Rio de Janeiro	Jan. 12-19	4	6
Brazil—Para	Feb. 2-23	9	9
Chile—Antofagasta	Feb. 6-12	14	6
Chile—Santiago	Feb. 2-9	1	1
China—Nanking	Jan. 21-28	39	36
Egypt—Provinces—Badi Soud	Feb. 17-21	1	1
Egypt—Provinces—Gueria	Feb. 17-21	1	1
Egypt—Provinces—Kena	Feb. 17-21	1	1
Egypt—Provinces—Kosse	Feb. 17-21	1	1
Egypt—Provinces—Minleh	Feb. 19-21	1	1
India—Calcutta	Feb. 26-Feb. 9, 20	262	20,706
India—Calcutta	Feb. 2-9	21	21
Peru—Callao	Feb. 8-16	1	1
Peru—Chilayo	Feb. 17-21	6	6
Peru—Porto Alegre	Feb. 17-21	7	7
Peru—Lima	Feb. 17-21	6	4
Peru—Mollendo	Feb. 17-21	1	1
Peru—Pacasmayo	Feb. 17-21	1	1
Peru—Pueblo Nuevo	Feb. 17-21	2	2
Peru—Trujillo	Feb. 17-21	12	3

Public Health and Marine Hospital Service:

List of Changes in the Stations and Duties of Commissioned and Noncommissioned Officers of the United States

Public Health and Marine Hospital Service, for the seven days ending March 23, 1907.

AMESSE, J. W., Passed Assistant Surgeon. Order granting leave of absence for fifteen days, from March 1, amended to be effective on May 14, 1907.

WERTENBAKER, C. P., Surgeon. Granted leave of absence for three days, from March 18, 1907.

BERRY, T. D., Passed Assistant Surgeon. Granted leave of absence for one day.

CAMPBELL, CLARENCE R., Acting Assistant Surgeon. Granted leave of absence for three days, from March 12, 1907, under Paragraph 210 of the Regulations.

Fox, C., Passed Assistant Surgeon. Directed to proceed from Port Townsend, Wash., to San Francisco Quarantine Station for duty and assignment to quarters.

GARDNER, C. H., Passed Assistant Surgeon. Detailed as a member of the Revenue Cutter Service Retiring Board convened to meet in San Francisco, Cal., on April 2, 1907.

HOBBY, W. C., Passed Assistant Surgeon. Detailed as a member of the Revenue Cutter Service Retiring Board convened to meet in San Francisco, Cal., on April 2, 1907.

KING, W. W., Passed Assistant Surgeon. Directed to proceed to Missoula, Mont., via Chicago, for special temporary duty, upon completion of which to rejoin his station at the Hygienic Laboratory, Washington, D. C.

LLOYD, B. J., Passed Assistant Surgeon. Granted leave of absence for two days, from February 8, 1907.

PRIMROSE, R. S., Acting Assistant Surgeon. Granted leave of absence for three days.

TERRY, M. C., Acting Assistant Surgeon. Granted leave of absence, on account of sickness, for thirty days, from January 1, 1907, and thirty days' annual leave, from January 31, 1907.

VON EZDORF, R. H., Passed Assistant Surgeon. Relieved from duty at Havana, Cuba, and directed to proceed to New Orleans, reporting arrival by wire.

Boards Convened.

A board of medical officers was convened to meet at the bureau at 10 a. m., Monday, April 15, 1907, for the purpose of examining applicants for the position of assistant surgeon in this Service. Detail for the board: Surgeon L. L. Williams, Chairman; Passed Assistant Surgeon H. S. Mathewson; Passed Assistant Surgeon Joseph Goldberger, Recorder.

A board of medical officers was convened to meet at Boston, Mass., March 21, 1907, for the physical examination of an officer of the Revenue Cutter Service and an applicant for the position of second assistant engineer. Detail for the board: Surgeon R. M. Woodward, Chairman; and Passed Assistant Surgeon B. S. Warren, Recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending March 23, 1907:

APPEL, A. H., Major and Surgeon. Leave granted in S. O. 24, February 1, 1907, Philippines Division, is extended two months and fifteen days.

BANISTER, JOHN M., Lieutenant Colonel and Deputy Surgeon General. Left Omaha, Neb., on fourteen days' leave of absence.

BANISTER, WILLIAM B., Major and Surgeon. Relieved from duty at Jefferson Barracks, Mo.; ordered to proceed to San Francisco, Cal., take transport to sail from that place about April 5th for the Philippine Islands, and upon arrival at Manila to report to the commanding general of the Philippines Division, for assignment to duty.

COLLINS, C. C., First Lieutenant and Assistant Surgeon. Granted leave of absence for two months and twenty days.

CROSBY, WILLIAM D., Major and Surgeon. Ordered to accompany Company E, 14th Infantry, from Vancouver Barracks, Wash., to the Presidio of Monterey, Cal.

FARR, CHARLES W., Captain and Assistant Surgeon. Granted three months' leave of absence on surgeon's certificate of disability.

MORRIS, SAMUEL J., First Lieutenant and Assistant Surgeon. Ordered to Washington, D. C., for duty on course of instruction at the United States Naval Medical School.

NELSON, KENT, Captain and Assistant Surgeon. Ordered to proceed from Fort McHenry, Md., to Fort Meyer, Va., in due time to accompany the 3rd Battery, Field Artillery, from that post to Jamestown, and remain with it during the encampment.

RHOADS, THOMAS L., Captain and Assistant Surgeon. In addition to his present duties will assume charge of the office of the chief surgeon, Department of the Missouri. In the performance of this duty he will make not to exceed six trips each week from Fort Crook, Neb., to Omaha, Neb., and return.

SMART, ROBERT, First Lieutenant and Assistant Surgeon. Ordered to report in person on Tuesday, May 14th, to Major William C. Borden, surgeon, president of the Army Medical Museum Building, Washington, D. C., for examination to determine his fitness for advancement.

STEER, SAMUEL L., Captain and Assistant Surgeon. Resignation of his commission as an officer of the Army has been accepted by the President, to take effect July 3, 1907.

WAKEMAN, WILLIAM J., Major and Surgeon. Died in the hospital, Fort Monroe, Va., on March 20, 1907.

The following named medical officers will report in person on the dates specified to Major William H. Arthur, surgeon, president of the examining board at the Army Medical Museum Building, Washington, D. C., for examination to determine their fitness for advancement:

BILLINGSLEA, CHARLES C., First Lieutenant and Assistant Surgeon. May 14, 1907.

DAVIS, WILLIAM T., First Lieutenant and Assistant Surgeon. April 23, 1907.

GAPEN, NELSON, First Lieutenant and Assistant Surgeon. April 23, 1907.

GRISSINGER, JAY W., First Lieutenant and Assistant Surgeon. May 14, 1907.

HANSELL, HAYWOOD S., First Lieutenant and Assistant Surgeon. May 14, 1907.

MORSE, CHARLES F., First Lieutenant and Assistant Surgeon. April 30, 1907.

PYLES, WILL L., First Lieutenant and Assistant Surgeon. May 7, 1907.

SMART, WILLIAM M., First Lieutenant and Assistant Surgeon. April 30, 1907.

SNODDY, CARY A., First Lieutenant and Assistant Surgeon. May 7, 1907.

The following named medical officers will report in person on the dates specified to Lieutenant Colonel George H. Torney, Deputy Surgeon General, president of the examining board at the General Hospital, Presidio of San Francisco, Cal., for examination to determine their fitness for advancement:

BLANCHARD, ROBERT M., First Lieutenant and Assistant Surgeon. June 18, 1907.

CONNOR, CLARENCE H., First Lieutenant and Assistant Surgeon. May 14, 1907.

COWPER, HAROLD W., First Lieutenant and Assistant Surgeon. April 23, 1907.

DUNCAN, LOUIS C., First Lieutenant and Assistant Surgeon. April 23, 1907.

GREGORY, JUNIUS C., First Lieutenant and Assistant Surgeon. May 21, 1907.

KELLER, WILLIAM L., First Lieutenant and Assistant Surgeon. April 23, 1907.

LAMBERT, SAMUEL E., First Lieutenant and Assistant Surgeon. May 14, 1907.

PERNELL, HARRY S., First Lieutenant and Assistant Surgeon. May 21, 1907.

Navy Intelligence:

United States Navy, for the week ending March 23, 1907:

ALFRED, A. R., Surgeon. Ordered to Washington, D. C., for duty on course of instruction at the United States Naval Medical School.

BAGG, C. P., Surgeon. Ordered to Washington, D. C., for duty on course of instruction at the United States Naval Medical School.

BROOKS, F. H., Assistant Surgeon. Detached from the Naval Medical Hospital, Mare Island, Cal., and ordered to the Annapolis.

CURL, H. C., Surgeon. Ordered to the United States Naval Medical School, Washington, D. C.

HOLCOMB, R. C., Passed Assistant Surgeon. Detached from the Naval Medical Station, Culebra, W. I., and ordered to Washington, D. C., for duty on course of instruction at the United States Naval Medical School.

PAYNE, J. H., Passed Assistant Surgeon. Detached from the Naval Recruiting Station, Providence, R. I., and ordered to Washington, D. C., for duty on course of instruction at the United States Naval Medical School.

SCOTT, T. W., Pharmacist. Ordered to the Naval Academy.

SHAW, H., Passed Assistant Surgeon. Detached from the Naval Hospital, Pensacola, Fla., and ordered to the Naval Station, Culebra, W. I.

WAGGENER, J. R., Medical Director. Ordered to the Naval Recruiting Station, Providence, R. I.

Births, Marriages, and Deaths.

Married.

BECK-STIEFEL.—In New York, on Wednesday, March 20th, Dr. Samuel S. Beck and Miss Isabel Stiefel.

COHEN-LOVENSTEIN.—In Philadelphia, on Thursday, March 21st, Dr. A. J. Cohen and Miss Mattie Virginia Lovenstein.

KENNEDY-TEAZ.—In Philadelphia, on Thursday, March 21st, Dr. William Morton Kennedy and Miss Miriam Shinn Teaz.

MOSS-GROBMAN.—In Woodbine, N. J., on Sunday, March 17th, Dr. Harry J. Moss and Miss Adeline E. Grobman.

QUARLES-SHERIDAN.—In Chicago, on Tuesday, March 12th, Dr. Edmund Quarles, of Mount Savage, Maryland, and Mrs. Mary Downey Sheridan, of Washington, D. C.

Died.

BARNEY.—In Belmont, N. Y., on Friday, March 15th, Dr. H. A. Barney.

BRINTON.—In Philadelphia, on Monday, March 18th, Dr. John Hill Brinton, aged seventy-four years.

CASGRAIN.—In Windsor, Ontario, Canada, on Friday, March 8th, Dr. Charles E. Casgrain, aged eighty-two years.

COMBES.—In Brooklyn, N. Y., on Tuesday, March 19th, Dr. Rodney C. F. Combes, aged fifty-one years.

FONTAINE.—In Gladys, Virginia, on Sunday, March 17th, Dr. Clement O. Fontaine.

FOSTER.—In Bloomington, Illinois, on Sunday, March 17th, Dr. Daniel M. Foster, aged ninety years.

HILL.—In Baltimore, on Friday, March 15th, Dr. Alexander Hill, aged fifty-two years.

JOHNSTON.—In St. George, South Carolina, on Tuesday, March 12th, Dr. J. D. Johnston, aged thirty-five years.

JONES.—In Belleair, Florida, on Sunday, March 17th, Dr. Leander P. Jones, of Greenwich, Connecticut, aged sixty-one years.

KERR.—In Chicago, on Tuesday, March 19th, Dr. David B. Kerr, United States Navy.

MOORE.—In Washington, D. C., on Monday, March 18th, Brigadier General John Moore, United States Army, retired, aged eighty years.

PENDLETON.—In Louisa, Virginia, on Saturday, March 16th, Dr. P. B. Pendleton, aged eighty-nine years.

UTLEY.—In Newton, Massachusetts, on Friday, March 15th, Dr. James Utley, aged sixty-six years.

WAKEMAN.—In Fort Monroe, Virginia, on Wednesday, March 20th, Dr. William J. Wakeman, United States Army, aged fifty-two years.

WARNER.—In Waukesha, Wisconsin, on Friday, March 15th, Dr. Albert M. Warner, aged ninety-one years.

WHELOCK.—In New York, on Wednesday, March 27th, Dr. George G. Wheelock, aged sixty-eight years.

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WHOLE No. 1479,

Original Communications.

ERUCTATIONS IN HEART PATIENTS.

BY J. J. SHAW, M. D.,
New York.

Patients with heart disease very frequently are troubled with gas, especially in the stomach, which they void, or try to void, by eructations. Those who are most troubled in this way are old cardio-sclerotics and arteriosclerotics; younger persons with valvular heart lesions do not suffer quite so much even when there is insufficient compensation. In old subjects of sclerosis, the accumulation of gas often forms the burden of their complaint, and they hold it to be the cause of the whole trouble—the sense of pressure in the chest and stomach, the pain in the præcordium, and the dyspnœa.

What is the origin of the gases? First of all, it is the fermentation, which even under normal circumstances produces gases in the stomach as well as in the intestines; but under normal conditions these gases are easily absorbed by the blood and carried to the lungs, where they are exhaled. In arteriosclerotic cases there seems to be an impediment to this absorption and transportation of the gas. It may be that the impaired abdominal circulation is the cause of this by reason of the retardation of the flow of blood through the viscera. But this abdominal stasis cannot be the only cause, for it is often extreme in young persons with valvular heart trouble without leading to exaggerated formation of gas in the abdomen. One might suspect sclerotic changes in the lungs and stagnation in the pulmonary circulation of being the causes of excessive production of gas, or rather of its diminished exhalation through the lungs. But in that case we should expect an enormous amount of gas to accumulate in emphysematous patients, on account of their diminished lung capacity; but they do not suffer so much with gas. It may be that defective abdominal pressure is partly operative in old persons in whom the abdominal muscles are getting flabby. Some authors believe that, under conditions thus far unknown, gases are generated from the blood, possibly because the exhalation of gas in the lungs is so impaired that the blood is overcharged with gases, like ammonia and carbon dioxide. Others maintain that the exaggerated amount of gas consists chiefly of ordinary air which is swallowed voluntarily or unconsciously. This is certainly true in many cases, especially those of nervous eructation, and aerophagy is a frequent accompaniment of dyspepsia in neurasthenic or hysterical subjects. Aero-

phagy may be observed by the physician, but often it is extremely hard to detect it. It may be suspected if the gastric contents show little or no fermentation when kept in the incubator. There is no doubt that arteriosclerotics sometimes become the subjects of aerophagy, especially when they are neurasthenic. They believe that all their troubles are due to gases, and so their only relief is in copious eructations. They try every means of bringing up the gases even when the stomach is empty, and it is only a short and very natural step for them to begin to draw in or swallow air, so as to bring the gases up. There is ample reason for an increased gastric fermentation in patients suffering from heart disease and especially in patients with abdominal sclerosis. The irregularities in the intestinal circulation will lead to abnormalities in the gastric and intestinal juice—there may be hyperchlorhydria, hypochlorhydria, or achlorhydria, or a production of gastric juice at the wrong moment. But even the most intense fermentation would scarcely explain the incessant eructations that we find in some patients, and in those we have to think of aerophagy.

During the last few years I have several times observed that they are chiefly patients with *abdominal* arteriosclerosis who are troubled with large amounts of gas, and a case that I was able to watch for a long time confirmed me in this supposition:

CASE.—A heavily built man, fifty-four years old, consulted me in 1901 on account of a sense of oppression in the region of the heart and in the epigastrium. He told me that in 1899, while on his way home after a large dinner, he had for the first time an attack which he described as follows: He was suddenly seized with a feeling of oppression, had to stop walking for about five minutes, belched up a great amount of gas, and then walked home without trouble. Such attacks had recurred on rare occasions, and it was on that account that he consulted me. I found his heart slightly enlarged, but its action regular with a slight systolic blowing sound over the aorta. The urine showed a faint trace of albumin, and its specific gravity was 1.020, without any other abnormality. From 1901 to 1905 these attacks became more frequent; sometimes they occurred almost daily, especially when the patient walked to his business after breakfast. He never had any pain, but simply a sense of pressure, and the eructations became so troublesome that he attributed all his discomfort to his stomach.

My diagnosis from the beginning was that of slight angina pectoris in consequence of coronary sclerosis and general arteriosclerosis, and I adhered to this diagnosis until the patient died. During the year 1906 his illness became more pronounced; the systolic murmur grew louder and the attacks more frequent, but the

pulse remained regular and of good quality, the blood pressure being from 15 to 17 cm. (Riva Rocci). The urine showed traces of albumin, and sometimes contained a little sugar. The heart usually seemed to be two or three centimetres broader than in normal condition. During all this time I kept the patient on a diet which was intended to avoid the formation of purin bodies as much as possible, and at the same time I tried to prevent fermentation as much as I could.

A week before his death the patient consulted a stomach specialist, who gave him an ordinary test breakfast, and found his stomach entirely empty an hour after the meal. Two days afterwards the same physician introduced a stomach tube during one of the attacks of oppression and pressure in the stomach. The tube penetrated to the stomach without any special resistance, but as soon as it had entered the organ a large quantity of gas and slimy gastric juice was expelled through the tube under great pressure. This seemed so remarkable that a diagnosis of gastric neurosis was made. On the evening of that very day the patient had an attack of most intense angina pectoris, with extreme pains in the chest and the right shoulder, and such severe dyspnoea that for several hours he was not able to sit or lie down, in spite of half a grain of morphine given hypodermically. Inhalation of amyl nitrite afforded very slight relief. For the next three days I kept the patient quiet in bed, but in spite of that another attack occurred and killed him suddenly.

The autopsy showed the heart slightly hypertrophied, with sclerosis and calcification of the coronary vessels, of the valvular, and of the thoracic portion of the aorta. The abdominal aorta and its branches were also intensely sclerotic. There was some chronic myocarditis, with sclerotic changes of the liver, kidneys, spleen, and pancreas, together with chronic gastritis and moderate dilatation of the stomach.

The most important thing shown in the autopsy report was, of course, the coronary sclerosis, but the gastric arteries showed changes almost as pronounced as those of the coronary vessels. The two coronary arteries of the stomach, the right and left arteria coronaria ventriculi, and especially the right and left gastropiploic arteries, were sclerotic and in some places calcified. The anginal diagnosis, therefore, was verified by the post mortem, and the one point in the clinical observation which had remained doubtful was put in a new light. The stomach, which had caused such pronounced symptoms, showed in the post mortem examination a very definite condition.

Let us now compare the clinical with the anatomical disclosures. The coronary and general arteriosclerosis sufficed to explain the broadening of the heart and its sudden insufficiency when the patient walked; but how can we explain the pressure in the stomach and the constant eructations that always accompanied the slight symptoms of angina pectoris and even ushered in the last and fatal attack? Were the gastric symptoms due to pressure of the heart upon the stomach, or was it the pressure of the distended stomach on the heart which initiated the attack? It was certainly not fermentation which caused the symptoms, for the stomach emptied rather quicker than normal, and there was no stagnation. If we compare the anatomical condition of the stomach with that of the heart, we must see a certain parallelism. The narrowed coronary arteries of the heart showed their influence on the myocardium by the frequent light attacks of angina pectoris. Why should not the sclerotic gastric arteries have shown their influence on the function

of the stomach? The narrowed arteries of the stomach must have constituted an impediment to the circulation in the gastric walls. So long as the stomach is empty there is no production of gastric juice, the arteries are not stretched, and the circulation is ample; therefore the patient experienced at such times no trouble at all. When food has been taken and the stomach is distended, the arteries become stretched, and they widen so as to allow of the production of gastric juice under intensely increased circulation. Now, the circulation must have been scarcely sufficient or entirely insufficient. Some parts of the arteries were so hard that their spontaneous dilatation seems to have been out of the question. Consequently the circulation in those arteries must have met with increased resistance, and the blood supply of the stomach during the height of digestion must have been almost inadequate or entirely so. This defect in the circulation showed itself for the first time after a very large dinner. At that time high arterial tension, with abdominal angiospasm, may have had a share in bringing on the attack; and as the dinner was taken in the evening when the patient was tired, and therefore full of angiospastic toxins, we have three distinct causes to occasion that first attack: Incipient sclerosis of the gastric arteries, an excessive dinner, and the abdominal angiospasm brought on by the purin toxins.

What is the significance of insufficient circulation in the intestinal tract? A dyspnoic condition of the intestines. If we kill a rabbit and open its abdomen we see intense peristalsis and retroperistalsis going on in the stomach and intestines that continue for many minutes and then gradually give place to the final relaxation. We see the same phenomena if we tie a branch of an intestinal artery, in the region which draws its blood supply from this branch. In other words, locally diminished blood or oxygen supply of the gastric or intestinal wall causes peristalsis or contraction, until the smooth muscular fibres become exhausted and relax. Thus the stomach reacts with contraction on momentary insufficiency of its circulation, while the heart under the same conditions causes more or less intense pain and oppression. If the gastric circulation is seriously insufficient, the stomach will react very soon after a moderate quantity of food has been taken. The patient will feel the pressure in the stomach, he will expel some gas, and his appetite will be satisfied too soon. If the circulation in the gastric wall is fairly sufficient, the patient will be able to take quite a large meal; he will eat as much as the stomach will hold, and then when gastric fermentation sets in and begins to distend the stomach still more, the border line of sufficiency in the circulation will be passed and gastric symptoms will show themselves.

There is still another element which may make manifest the insufficiency of the gastric circulation, and that is exercise during the height of digestion. As soon as we walk there is an increase of the circulation in our muscles, and therefore a corresponding decrease of the abdominal circulation; and this may be enough to show the insufficiency of the gastric circulation. Furthermore, the sudden influence of cold air during digestion may give rise to vascular spasm; therefore sclerotic patients have their

fast attacks of eructations in the evening when there is excessive tension, also when, after large dinners, they walk in the cold night air. It is natural that nervous and psychical disturbances, such as anger, fright, or sorrow, may cause attacks by means of angeiospasm, and thereby reflect on the stomach. The sudden contraction of the stomach under the influence of the local dyspnoea will expel gas and part of its contents, and thereby cut short the attack. When the sclerotic changes are severe the stomach will contract, and show useless peristalsis and retroperistalsis until total relaxation of the organ sets in, as soon as a little food has been taken up. This seems to me the time when aerophagy is likely to take place. The air may be swallowed or drawn in consciously or unconsciously.

Angina pectoris coronaria has been compared to claudicatio intermittens, to which arteriosclerotic horses and men are subject when the circulation in the femoral arteries is impaired. Such arteriosclerotic subjects, horses or men, can walk slowly, or the horses even trot for a short time, until suddenly the local insufficiency of the circulation (in the hind legs of horses) causes a painful sensation which stops as soon as the exertion is discontinued. In coronary sclerosis the heart becomes the seat of the same sensation as soon as it has to make severe efforts. *The same is true of the stomach.* Therefore, I should call the gastric syndrome in abdominal arteriosclerosis an intermittent claudication of the stomach, the only difference being that it does not show its circulatory insufficiency primarily by the feeling of pain, but by a sensation of pressure and by intense and partly futile contractions, causing eructations which are followed by total relaxation.

54 EAST FIFTY-EIGHTH STREET.

THE PHYSICAL PROCESSES OF IMMUNITY AND INFECTION.

BY JONATHAN WRIGHT, M. D.
New York.

IV.

The Nature of the Colloid.

It needs no very great gift of apperception to understand that the ultramicroscopic study of the colloids will in the near future profoundly affect the problem with which we are concerned, for protoplasm is indeed "the colloid of colloids." So far as I have observed this indication has been unheeded to a lamentable degree in recent literature outside of France, yet it is gaining a slow but sure foothold in German medical literature.¹ Studies in immunity can no longer advance without a more just appreciation of the physical side of the question. Recent observations show that besides the organic colloids certain inorganic colloids have the power of "absorbing" the specific complements of the blood. We can hardly afford to ignore the suggestion, which the study of the inorganic colloids will yield, that their particles or molecules, loaded with an electric charge, change in some way the characteristics of the so called complement. The inference is that this change is one of electrodynamics. In the preceding article² I have somewhat forestalled the

development of this application by an extensive quotation from the work of Hektoen. Protoplasm being regarded as the colloid of colloids it is highly probable that those characteristics which it shares with the colloidal states of the metals are due to the peculiar methods of association of the molecules or molar masses.

Now the only tenable view of these peculiar qualities of the colloid solutions of the metals is that, in what would otherwise be a temporary emulsion requiring frequent agitation to prevent precipitation, the molecules of the metal become dissociated by the action of electric forces which preserves the solution for months and years, if undisturbed, from sedimentation. The relationship the masses or molecules take to one another is due to their electric attractions and repulsions. Now the tendency has been to divide inorganic solutions into crystalline and colloid, but apparently crystalline solutions and, we may infer, a chemical compound like water, differ from colloid solutions only in the number or the mass of atoms or molecules associated together as units, between which units there is a play of electrodynamic forces. Now an electrolytic current will decompose a crystalline salt solution and it will precipitate a metal from its colloid state and it will cause molecular death in protoplasm. It is declared that "ions travel less swiftly the larger they are."³ Let us correlate this with what we can learn from what can actually be seen by means of ultra microscopy, the method and limitations of which I will not stop to explain, referring the reader to the recent work of Zsigmondi.⁴ Suffice it to say the presence of particles of metal of sizes approximating the wave length of light may under proper conditions be demonstrated. In a colloid solution of gold, those particles below a certain size (0.01 micron) may be seen darting about at great speed and perpetually in motion even after the solution has stood undisturbed for many months, the little masses of molecules repelling and attracting one another and exhibiting many collisions. In solutions of larger particles the movements become slower until at 4 micra they are stationary. We have here then a condition of matter in which these forces between minute masses are powerful enough indefinitely to overcome the power of gravitation. These electric forces exhibit phenomena differing with the size and probably with the constitution of the molecules of matter upon which they are a charge. In Bredig's silver colloid solution, he describes the appearances in a solution of which the linear dimensions of the particles are from 50 to 77 μ .⁵

A particle approaches another, circles around it in an active zigzag movement and is then again shot away; occasionally one follows another almost to touching without, however, attaining it. Often several unite together into a group and dance like gnats in the sunshine, especially if a particle for the fraction of a second comes in the vicinity of another. . . . Often the influence of one particle on another makes

1. *Protoplasma, Ein Physiko-chemisches Problem*, SZ., *Erkenntnis der Colloide*, 1906.

2. *Colloids and Immunity*, *Journal of the American Medical Association*, 1906, p. 1000. The author has observed that the size of the particles still may vary, but that the most important thing is the number. A particle is 1/1000 part of a micron, or 1/100,000 part of an inch. A micron is 1/25 of a millimetre. We are then, therefore, dealing with divisions of matter too minute to be measured on the English scale, or even on the metric scale.

³ See, for instance, Landsteiner and Stancovic, *Centralblatt für Bakteriologie*, 119, p. 4, 1906.

⁴ *New York Medical Journal*, Mar. 4, 1907, p. 707.

itself felt at a distance of 2 to 4 micra, i. e., about forty or eighty times its own diameter.

Now, these things are observable at present only in metallic colloid solutions of very high dilution. In a thicker metallic colloid solution, or in a protoplasmic solution the particles being much closer together must exhibit shorter excursions and more frequent collisions. We know nothing of the size of the electrified particles in a protoplasmic solution. Hence the appreciable physical manifestation of this intramolar activity supposedly existent in protoplasm cannot at present be traced to the molecular state upon which it depends with any exactitude. Disposed as is Le Dantec for trips into the realm of hypotheses, observations such as these furnish a secure basis for the explanation I quote from one of his books:⁶

How do the fine droplets of the colloid remain separate one from the other in spite of the natural forces of cohesion which exist between bodies close together? J. Perrin has given an explanation so very ingenious that I can sum it up in a few words: When two different bodies are in contact one with the other, they become electrified; fine drops suspended in a liquid are thus electrified on contact and all in the same manner; thus repulsions between neighboring drops, bearers of electricity of the same name, result; these repulsions struggle against the cohesion which tends to approach them; equilibrium is obtained when the distances between the drops are exactly what is necessary in order that cohesion at that distance counterbalances the electric repulsions.

For clearness of language in explaining a scientific conception nothing could further go.

We have traced these forces from intraatomic to intramolecular and intramolar, seeing that their manifestations vary as the size of the masses rises. The next step is to trace the law to the manifestation existing between contiguous units of protoplasm we speak of as being "alive," the living cell and the living bacterium of the tonsillar crypt. I must again refer to the early experiments of d'Arsonval, who showed the electricity generated in striated muscle fibre where alternate plates of dark and light protoplasm are in contact. I must again refer to the amount of it generated in a like manner in the electric organ of the torpedo, a fish whose *ramus electricus* can make an incandescent lamp glow. These things, the contraction of muscle fibre, the glow of an electric lamp tend to impress upon the imagination the efficiency of the energy developed, as I suppose, between the cell and its living heterogeneous neighbors. Benedikt⁷ believes that "the arrangement of atoms and the tension associated with them are very much more complicated in the living matter than in the lifeless and bear different relations to one another," but this in view of what has preceded cannot be regarded as accurate. The relation between as small divisions of matter as atoms are conceived to be is probably the same for the living as for the lifeless. The change is probably due to the higher synthesis of living matter. The masses which bear distinct electric charges and repel one another may be supposed to vary all the way from the atom up to the realm of the visible, when what we see impresses us so strongly we say it is "living." Mathematics will soon integrate all the factors into the equation necessary to exhibit the one law. An-

other quotation from Zsigmondi gives us a glimpse of the endeavors made to work this out. "Out of the results of numerous physicochemical investigations it appears, independent of every theory, that the osmotic volume energy,⁸ which in crystalline solutions is paramount, sinks into insignificance in the presence of the influence of the electrical energy of surface tension." It is this summoning of energy to the surface of molecules or masses which overcomes the law of gravitation in colloid solutions. Existing on the surface of the phagocytic cell it induces the phenomena of chemotaxis.

I wish to leave for a future contribution the discussion of the relation of the tonsil to heredity, but I may here introduce another support to a theme I have urged elsewhere, namely that heredity is a property of matter handed up in the course of evolution from the inorganic to the organic. It may be introduced here because it again illustrates how close is the relationship between the processes of the colloids of the inorganic metals and of protoplasm.

I am indebted to Jennings⁹ for this quotation from Bredig. Speaking of colloids "the substances of which organisms are mainly composed a high authority in physical chemistry remarks as follows: 'Their (i. e., inorganic colloids) qualities often depend in the clearest way upon the former history of the colloids, its age, its previous temperature and the time this continued; in short, on the way it has reached its present condition.' The facts of behavior in organisms might be cited as illustrations of this statement." Jennings remarks elsewhere that the law of readier resolution of physiological states of protoplasm after repetition, in which term we may be allowed to place not only racial heredity and acquired characters but the immunity secured by a previous symbiosis, presents many analogies to these changes in the states of inorganic matter.

The action of the colloidal metals resembles much the organic ferments and toxines, decomposing many organic substances. Singularly if not significantly, various bodies such as prussic acid, iodine, etc., which poison the organic ferments, paralyze or destroy in the same way the action of the colloidal metals.

Wishing still further to make plain that it is the evolution of the forces of attraction and repulsion which in a physical way plays the chief part not only at the surface of the tonsillar cells, but within the body fluids I recur again to the phenomenon of the agglutination of bacteria and its relations to phagocytosis. When it takes place in the presence of a salt, the suggestion of Greig Smith is that phagocytosis also becomes possible by the bacteria becoming coated by the sedimentation of the salt on their bodies. He believes that "the union is no more than a simple physical process of absorption and that it brings about agglutination either directly or in consequence of a change in the molecular attraction between the bacteria and the fluid in which they are immersed." It is surmised by the authors from

⁶ For the "volume energy" is understood in physics the latent heat of compounds which governs the relations of molecules or larger aggregates of atoms to one another. By "surface energy" is meant the electric charge on the surface of the molecules or masses. We can scarcely doubt the close relationship if not the identity of the two.

⁷ *Behavior of the Lower Organisms*, 1906.

⁸ LeBon, *L'Evolution de la matière*.

⁸ *Le Bon, L'Evolution de la matière*, p. 11.

⁹ *Le Bon, L'Evolution de la matière*, 1902.

which I quote¹² that the lowering of agglutinability in bacterial cultures by the application of heat is not entirely accounted for by the destruction of those substances that are supposed to combine chemically with the agglutinin, but "possibly a change in the surface tension of the bacterial envelope must be at work as well."¹²

In a previous paper, *New York Medical Journal*, March 23, 1907, I have used Hektoen's words in setting forth the physical side of the question of phagocytosis. Now as to the bacterial envelope, it is evidently, as is the surface of an oil drop on water, governed by surface tension. It has been shown by a number of observers¹³ that certain pathogenic bacteria (pest, anthrax) after injection into the abdominal cavity of guinea pigs acquire in future generations (*after several minutes only*) much thicker capsules. Under these morphological conditions they are not absorbed by phagocytes as are the bacilli grown in an artificial medium. From another source we may derive the conclusions¹⁴ to which, in a biological sense such facts lead. The formation of spores in bacteria under unfavorable nutritional conditions, just as Metchnikoff¹⁵ insists reproduction is the first sign of a failing equilibrium in the vitality of living things, is thus an answer to a stimulus from without, toned down by the outside envelope of the bacterium, which, receiving the first shock of an environment inimical to its existence, itself perishes. Thus out of death springs life. The more resistant spore capsule protects the life within. Here we have a primordial example of the mother dying in defense of its young.

Before leaving this part of the subject it is to be remembered that bacteria behave toward the electric current like other organisms and like other colloids. "They are carried by the electric current, like true suspensions towards the anode, and their precipitation does not present any essential difference from that of the inorganic suspensions or the colloids."¹⁶

44 WEST FORTY-NINTH STREET.

FURTHER CONTRIBUTION TO THE STUDY OF SPONDYLOSE RHIZOMELIQUE.*

BY ALFRED GORDON, M. D.,

Philadelphia,

Associate in Nervous and Mental Diseases, Jefferson Medical College; Examiner of the Insane at Philadelphia General Hospital, etc.

As it is well known two types of this curious affection have been described. One by Bechterew in 1892, the other by Strümpell and Marie in 1898. In the first form there is ankylosis of the cervical portion of the spine with meningomyelitis. In the other variety there is ankylosis of the spine and of

the large proximal joints of the lower extremities without cord involvement. In the light of our present knowledge of this disease the two original types can no more be considered as sharply defined and distinct from each other. There are far more cases on record of so called intermediary forms, in which elements of one form are found in the other; otherwise speaking the ætiological factor, whatever it may be, affects in one case the roots and the spinal cord and leads eventually to a paretic condition of the muscles of the spine and consequently to a rigidity with kyphosis; in another case it may attack the spinal articulations first and involve secondarily the cord elements or not involve them at all; in still another case it may begin with the Strümpell-Marie form and involve later also the small joints of the limbs. As to the rheumatic history, it is not at all present in every case, as I have already shown in another contribution to the present subject (*Medical Record*, February 13, 1904). The tendency of some writers to consider the affection as a variety of arthritis deformans for the only reason that the spinal column is rigid, is in my opinion, untenable. A careful reading of the reported cases will show to an impartial observer that the clinical picture, course, duration, and termination of the affection are by no means in every case identical with that of rheumatism, so that the tendency of placing it among the rheumatic affections is in my judgment erroneous.

Pathological reports of this very curious affection are very few. They all show that the essential feature lies in an ossification of the periarticular ligaments of the spine and hypertrophy of the articular processes which come into immediate contact with each other after the last vestige of the cartilages has disappeared.

If the disease is not the expression of a general articular rheumatism, is it an autonomous affection, as Bechterew, Strümpell, and Marie suggested? We are now in possession of facts showing that multiple conditions are apt to produce limitation of movement and rigidity of the spinal column as well as of other articulations, for example, tabes, syringomyelia, spinal muscular atrophy, myositis, hypertrophic cervical pachymeningitis, and chronic deforming rheumatism.

Taking all these factors into consideration, also the fact that between the two original types there is a very large number of transitional forms with and without involvement of the cord, it seems exceedingly doubtful if the disease under discussion can be considered as a pathological entity. The idea of uniting all forms of spondylosis in one cannot reasonably be accepted and the term "spondylosis" should be reserved only for the purpose of designating the symptom, rigidity of the spine, and the original name given by Bechterew, Strümpell, and Marie be abandoned. Spondylosis is only a symptom of a more complicated disease, and the frequent involvement of the cord shows that the ætiological factor is of a more complicated order than one may suppose.

In the first of the following cases there is rigidity of the lower part of the spine and a kyphosis at the same level. Symptoms of involvement of the spinal cord and of the roots are very evident. A rheumatic family or personal history is totally absent. The

* I have discussed A. J. Gordon's paper on "Aetiology of Rheumatism," *Journal of Pathology and Bacteriology*, January, 1906.

¹² *Idem*, *Deformation of the Spine*, p. 10. In the head of the "Formation of Surface Films and Their Membranes of Precipitation," discusses the physical aspect of the difficult question of osmosis so intimately bound up with this question of cell capsules.

¹³ Vide Löhlein, *Centralblatt für Bakteriologie*, etc., Bellage & Co., Leipzig, 1906, p. 100.

¹⁴ *Idem*, *Deformation of the Spine*, p. 10.

¹⁵ Metchnikoff, *Phagocytes and Pathogenic Bacteria*.

¹⁶ *Centralblatt für Bakteriologie*, etc., Bellage & Co., Leipzig, 1906, p. 100.

* Read and published by the Association of the Philadelphia College of Medical Science, Jan. 27, 1907.

patient has been in the same condition from the onset of the disease.

In the second case there is a very marked rigidity of the lower spine and an ankylosis of the large proximal joints of the lower limbs. Pain is present in both extremities and back. Cord involvement is also evident, and in contrast with the first case in which the reflexes are entirely abolished, the reflexes here are exaggerated, pointing to an involvement of a different tract in the cord. Here again there is no rheumatic history. The two cases are therefore vivid illustrations of the stated views concerning the pathogenesis and the ætiology of the affection. The histories of the cases are as follows:

CASE I.—J. Y., aged twenty-six, noticed about two years ago a gradually coming on pain in the back and lower limbs. At the same time he began to experience some difficulty in walking; he had to drag his legs. At the end of two weeks the back became stiff so that he could not lean forward or backward. The pain kept on increasing so that he was compelled to go to bed. He was treated in several hospitals, in each of which he remained several weeks. No improvement was obtained from various medications and external applications.

At present the condition is as follows: When the patient walks he holds himself rigid and inclined forward. There is some ataxia of gait and station (Romberg's sign). He cannot lean backwards. Each attempt to bend him in the latter direction provokes severe pain. Leaning forward is possible, although not perfectly well. Sitting down and getting up are also imperfect. Crossing the legs is very difficult. The reflexes are altered. The right knee jerk is absent, the left is very slight. The Achilles tendon reflex is also absent on the right but faint on the left. The lower extremities are tender to deep pressure, especially the thighs. The patient still complains of pain, continuous in character with occasional exacerbations. The atmospheric changes have no influence over the latter. The pain is confined to the lumbosacral region, radiates sometimes around the waist and spreads down to the legs. The sphincters are normal. There is no disturbance in the upper extremities and no pupillary or eye ground changes. An x ray examination of the spine has not revealed any changes in the bones nor any neoplasm. Some kyphosis is noticed on inspection.

CASE II.—R. P., miner, fifty-three years of age, was taken twelve years ago while at work with severe pain in his right thigh. The pain was so severe that he was compelled to interrupt his work for weeks at a time. Soon the pain extended down to the leg and up to his back. A rigidity of the lower part of the back developed rapidly; he was unable to bend forward or backward. Rapidly similar pain appeared in the left lower limb. The difficulty in walking increased so that the patient had to use crutches.

At present he shows a marked rigidity of the lower portion of the spine. The gait is difficult and spastic. He can stand on the left leg, but cannot do so on the right. When seated he cannot cross his legs; the adduction, abduction, and rotation of the limbs are impossible. Rising from a sitting posture is very difficult. The knee jerks are exaggerated on both sides and there is a paradoxical reflex on the right. The sensations are normal. The sphincters are not involved. The upper part of the spine and the upper extremities are normal. The patient never suffered from rheumatism or from any other disease. The family history is equally negative.

WHAT ARE THE FACILITIES FOR TREATMENT OPEN TO THE VENEREAL PATIENT IN THE DISPENSARIES AND HOSPITALS OF NEW YORK?*

BY A. D. MEWBORN, M. D.,
New York.

The term venereal patient is an unfortunate one, as it arouses at once, in many minds, the idea of moral turpitude, of unworthiness as an object of charity. Hence the directors and even many physicians of certain dispensaries and hospitals are disposed to refuse such cases altogether or to hide the number treated under more euphemistic diagnoses. For instance, in one of our largest eye and ear hospitals, for the year 1900, there were reported one hundred and four cases of purulent conjunctivitis, and thirty-eight cases of conjunctivitis neonatorum. To none of these cases was the objectionable word gonorrhœal attached, and yet the house pathologist reported gonococci found in 104 cases. The same hospital reported for the same year thirty-eight cases of interstitial keratitis and fifty-six cases of oculomotor paralyses without mentioning syphilis, which we know is the cause in a large majority of such cases. In the nose and throat department of the same hospital and dispensary there were treated 19,241 cases of which only seventy-five were classified as syphilitic. We know that is an absurdly small proportion; in fact, the house surgeon confessed to me that in many cases where syphilis was known to be the cause it was not mentioned in the reports or records.

But even in dispensaries where gonorrhœa and syphilis are treated under their proper names in genitourinary and dermatological clinics, it is very difficult to get at the number of cases treated by searching the records. This difficulty is dependant upon a number of factors as I found in 1901 while searching the dispensary records for the Committee of Seven of the County Medical Society. The moment the word venereal patient is mentioned to a dispensary superintendent there seems to be a desire to minimize the number treated as if he were in some way culpable for treating such cases at all. It is difficult to gain access to the dispensary records, and when you have been permitted this favor your difficulties increase in even approximating the number of venereal patients treated.

Most dispensaries have a large record book with columns for name, age, nationality, address, and diagnosis. It is particularly in the column of diagnosis where attempts at classification are difficult. The careless slurring handwriting, the lack of uniformity in nomenclature, syphilis being called by all the known synonyms as well as being designated by fantastic signs and hieroglyphics known only to the author, are great difficulties. Gonorrhœa with an equal richness of synonyms seems even more suggestive of humorous appellations. Chancroid as *ulcus molle* or soft sore is clear enough, but as *ulcer of the penis* or *c-h-a-n-c-r* is as doubtful to the reader as the case probably was to the author. Another great fault is the entire omission of diagnoses. Far be it from me to find fault with a candid admission of doubt, but what must we think of a dispensary

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class with fifty to ninety per cent. omission of diagnoses? At least some clue might have been given to indicate what was suspected.

In some dispensary classes the card index system is used, this has many advantages for the physician in charge, but the diagnosis is often wanting in these and are very difficult for statistical tabulation. The multiple case book method, however, is the most exasperating; the diagnosis often being concealed in the midst of the history. A separate columnar arrangement with headings for gonorrhœa and syphilis would be admirable in assisting the dispensary clerk to make out his annual report, and should be insisted upon. At the time of my investigation for the Committee of Seven there were only ten genitourinary clinics. Two of these gave me no statistics. The other eight treated during the year 1900 over 15,000 cases, all but about five per cent. of which were venereal diseases.

In addition to this list were many dispensaries where venereal diseases were treated in skin disease classes. The treatment of syphilis in such classes is proper. Syphilis properly belongs to dermatology since all of the lesions of the first two stages are skin and mucous membrane manifestations, and the tertiary very frequently are so; in any case the cutaneous manifestations simulate so closely other skin diseases that a trained dermatologist rather than the urologist should be entrusted with them. Gonorrhœa and chancroid, more confined to the sexual organs and requiring a better surgical equipment for their treatment more properly belong to the urologist and gynecologist.

There were twelve dispensaries where gonorrhœa and syphilis were treated in the dermatological classes. In these twelve dispensaries for the year 1900 there were treated 23,626 cases, of which the proportion of gonorrhœa and syphilis varied from 9 to 45 per cent., say an average of 27 per cent. In addition there were a few special classes where a large number of venereal diseases were treated, such as the morning and afternoon Italian classes at the New York Dispensary, Centre and White Streets. These two classes treated 10,709 patients for the year 1900, of whom 25 per cent. to 33 per cent. were venereal.

The New York Hospital Dispensary treated in the night surgical class at Sixteenth street, 667 patients of whom 82 per cent. were venereal. The Hudson St. Branch of this hospital treated 2,660 venereal. Many venereal patients, of course, are treated in the gynecological classes, but here it is very difficult to get accurate statistics because so many diseases of the pelvic organs are really caused by the gonococcus but are not so put down in the diagnoses. Five of the largest gynecological classes gave a total of only 755 venereal diseases treated during the year 1900. The very meagreness of these figures show either that women with venereal diseases do not visit the gynecological classes or else the gonococcus is not sought for. Stone and McDonald report the finding of the gonococcus in the lochia of 17 out of 171 cases of puerperal women, 10 per cent. Ellice MacDonald in the *Annals of Surgery*, 1907, p. 209, states that gonorrhœal infection is one of the most common varieties of infection in the puerperium and is the least frequently discovered.

To substantiate this it is only necessary to analyze a few hospital reports. From the hospital reports for the year 1900, I found that there were treated in the gynecological services of New York 335 cases of pyosalpinx, 371 cases of salpingitis, 107 cases of vaginitis, 32 cases of ovariitis, and 1,762 cases of endometritis, a total of 2,609 cases, most of which were probably from a gonorrhœal infection at the beginning. If there were better facilities for the treatment of venereal diseases in women at the beginning there would be much better chances for preventing these cases from figuring later in hospital reports under some other name.

I think I have shown how difficult it is for one to get at the proportion of venereal diseases treated in the dispensaries of New York even after repeated visits and a willingness to personally search the records. It is impossible to get these data by writing to the dispensary authorities, this has just been shown by the replies to a circular letter sent out by our chairman, Dr. S. T. Armstrong, to all the dispensaries of New York and Brooklyn. The questions asked in this letter were:

Does your dispensary treat patients who have venereal diseases?

Can you tell me the proportion such patients bear to the general patients treated during the years 1901, 1902, 1903, 1904, 1905?

How many physicians are connected with the department for venereal diseases?

Have you any printed leaflets that may be used to advise patients affected with such diseases?

Dr. Armstrong has kindly placed these replies at my disposal for tabulation. The medical directory gives fifty-three dispensaries in New York and sixteen in Brooklyn. Twenty-three dispensaries replied that they had no venereal diseases treated, and that no venereal diseases were treated. Four admitted that venereal diseases were treated, but said that it was impossible to give figures. Twenty failed to answer the letter. Twenty-two gave positive answers to the question, do you treat venereal diseases, and evidently sincere and careful attempts to furnish the desired information, but no attempt can be made to calculate percentages even from these positive replies. Why? Because ten of these dispensaries give statistics from the genitourinary classes alone. In other dispensaries where the genitourinary and syphilis cases are treated in the dermatological classes no attempt has been made to give the proportion of each to the total treated in the cutaneous class. No replies contain any statistics from the gynecological classes, just as if gonorrhœa and syphilis did not demand its toll from women?

To briefly quote some of the figures taken from these twenty-two dispensaries without any attempt to calculate whether during the past five years there has been an increase of venereal as compared with the Committee of Seven's report, we find in the genitourinary classes of the New York Dispensary, Centre Street, between 2,600 and 3,100 cases per annum. In the Hudson Street branch of the New York Hospital an estimate was made of 140 cases per week, or about 7,200 per annum. This is a much higher number than was found in 1900. The Vanderbilt Clinic, genitourinary department, treats between 2,300 and 2,500 cases per annum. Cor-

nell Clinic, genitourinary department, has increased from 753 cases in 1901 to 2,055 cases in 1905, Sydenham Clinic from 328 to 1,568, fivefold in the past three years. The Postgraduate Clinic, genitourinary department, gives an estimate of 11 per cent. of total treated in dispensary. This would amount to over 10,000 per annum. The University Bellevue Dispensary, genitourinary department, from 5,688 in 1901 to 20,420 in 1903, declining to 8,115 in 1905. The great increase in the number of cases in 1903 was due to the temporary closing of the Bellevue Out Door Dispensary. Figures from the Polyclinic genitourinary class were not obtainable. Three other genitourinary classes run between 150 and 500 per annum. Six dispensaries treat syphilis and gonorrhœa in the skin class, but their figures have no statistical value, since no attempt has been made to give the proportion of each treated. These dispensaries were the New York Hospital, Presbyterian, Mount Sinai, Skin and Cancer, Northwestern, and Lebanon Hospital. All of these classes show a total increase and an estimated venereal proportion of from five to twenty per cent. Five dispensaries gave statistics of venereal treated without having either a genitourinary or skin department.

The dispensaries having genitourinary departments are as a rule well equipped, having a number of assistants (Mount Sinai, twelve; Postgraduate, eighteen assistants). Most of them are open from one to three hours every day, except Sunday, and several have night classes. The dermatological clinics as a rule are not so well equipped for the treatment of genitourinary cases, and by a natural law the genitourinary patients flock to the well equipped dispensaries.

Manhattan Island has an estimated population of 2,112,380, 31 per cent. of which lives below Fourteenth Street. These 672,695 inhabitants have available within this region just five large dispensaries which treat venereal diseases: Good Samaritan, Beth Israel, New York Dispensary, Deutsche Poliklinik, and Hudson Street branch of New York Hospital. Above Fourteenth Street the dispensaries which treat venereal diseases are mostly grouped. From Fourteenth Street to Thirty-fourth Street, on the East Side, there are the Eclectic, Skin and Cancer, Postgraduate, Columbus, Demilt, University, Bellevue, Bellevue Outdoor Patients, Cornell, and Polyclinic, in all, nine large dispensaries. Scattered along higher up on the East Side we have St. Bartholomew's, Presbyterian, German, Mount Sinai, and Sydenham Hospital, five dispensaries. On the West Side no dispensaries treating venereal between Hudson Street Dispensary and St. Vincent's, then the New York Hospital at Sixteenth Street, Northwestern at Thirty-sixth Street, West Side German at Forty-second Street, and Roosevelt and Vanderbilt at Fifty-ninth Street. If I have omitted any, it is largely their own fault, as I have been necessarily guided by replies to the circular letter.

Only four clinics give out leaflets to patients. One of the best is that given out by the New York Hospital Dispensary.

Now there remains a few words to be spoken of the facilities offered the venereal patient by the hospitals of New York. The City Hospital has just twenty-eight beds for male and twenty-eight for female venereal patients. The eye wards

for syphilitic and gonorrhœal eye cases have twenty-eight beds for men only. There are also in the City Hospital fifteen beds for syphilitic patients in the male dermatological wards. The Metropolitan Hospital has a genitourinary ward, with beds for forty-nine males and five for females. This comprises about all that there is in the way of hospitals open to the venereal patient. Neither Bellevue, Gouverneur, Fordham nor Harlem Hospital offers any provision for the treatment of patients affected with venereal diseases. All the other hospitals refuse such cases unless there are complications grave enough to permit them to be called by some other name. As a rule, hospitals cannot be blamed too severely, as such cases are ordinarily ambulant cases and would not require or submit to long hospitalization. But there are at times cases where a wife and mother is infected innocently by the husband, and where such a woman should be treated in a hospital until the most virulent manifestations are under control. As you can readily see thirty-three beds for a city the size of New York is inadequate to offer the weaker sex.

The proportion of women who acquire syphilis from their husbands is a large one and has recently been the subject of a paper by Fournier before the French Academy of Medicine under the title of *La Syphilis des hommes et femmes*. Fournier states that one woman out of five having syphilis has contracted it from her husband. Out of 312 cases of such marital syphilis, 218 were contracted from a husband syphilitic before marriage, 94 from the husband who had acquired syphilis after marriage. Morrow gives the percentage of innocently acquired syphilis among women in dispensary practice as 70 per cent. By this use of the word syphilis innocently acquired, I do not wish to cast any reflections whatever upon those who have acquired it in any other manner.

It is just this moral prejudice against the word venereal which has prevented our health authorities from recognizing the existence of this plague, a plague in my mind second only to tuberculosis. It is true that man in the naïveté of his primitive development carried his wonder at the mystery of reproduction too far—even to the extent of phallic worship—but have we not gone too far in the opposite direction in our prudish disregard of diseases which it seems we can never separate from their genic mode of transmission. To quote Brieux in *Les Avaries*: "As all other diseases this is one of our misfortunes, and it is never a shame to be unfortunate even if one has merited it."

It is absolutely out of our province as medical men to consider for a moment the moral aspects of how a disease is contracted. Here are communicable diseases of most disastrous consequences to the individual and to society which we must attempt to check by increased facilities for treatment. We do not count the cost in preventing the spread of other contagious diseases, why should these two diseases, which all admit are of prime importance, be absolutely neglected by the sanitary authorities?

Let our society urge upon the State Board of Charities that such rules regulating and governing the dispensaries of New York be enacted which shall require an annual report giving the number of cases of gonorrhœa and syphilis treated in each de-

partment of every dispensary and hospital of New York. Let us increase the number of night classes and all other facilities so as to encourage such patients to seek treatment. Not so much for the individual's sake, but for humanity's sake. I would suggest that it be made *obligatory for dispensaries* to give patients afflicted with such diseases proper leaflets warning them of the dangers of transmitting the disease to innocent persons. With such a campaign of education the public would at least be enlightened. It is ignorance of the capacity for harm in both diseases which constitutes their danger.

50 WEST THIRTY-SEVEN STREET.

WHAT CAN TREATMENT DO FOR THE PROPHYLAXIS OF THE VENEREAL DISEASES?*

BY HERMANN G. KLOTZ, M. D.,
New York.

Of the dual objects of this society which are indicated by its name moral prophylaxis has heretofore received by far the greater attention by the authors of the papers read, by those who took part in the discussions and by the audiences in general. And deservedly so, for the questions considered were of the utmost importance: The necessity and the practicability of spreading satisfactory knowledge of the existence and of the functions of the reproductive organs, of their care and of the consequences of their abuse. On the other side the question of the awakening and strengthening the moral sense of the community and principally of that still youthful generation which is destined to form the community of the future. However, even under the most favorable conditions we cannot expect that the progress of the moral education will be a very rapid one; we must be prepared to see many years pass, perhaps an entire generation, before its real effects will become visible and measurable. In the meantime we have to reckon with that enormous number of individuals of both sexes who at present are already affected with one or more of these so called venereal diseases. Each one of these individuals represents a possible focus of fresh infections, a source of danger to innocent individuals as well as to those who willfully expose themselves. Here, then, we have a large field in which moral prophylaxis must give precedence to sanitary prophylaxis.

Incidentally to the consideration of the questions of moral prophylaxis by the society, sanitary prophylaxis has quietly and almost unconsciously taken an important step in advance; heretofore those diseases which have their origin mostly in the social evil were not allowed to be mentioned at all in any but the strictest medical assemblies; outside of the profession the venereal diseases were covered with a veil of mystery; with misplaced prudery, mistaken morality, and with a certain selfrighteousness society and even charity refused to take notice of these diseases, although necessarily not entirely unconscious of their existence. Now at last the names of these diseases have been brought forth before general audiences which have nobly overcome their former prejudices: the general distribution of these diseases and their widely spread injurious influences on the highest interests of human society have open-

ly been discussed and it is now generally known and say that the venereal diseases are at last beginning to be deprived of the long enjoyed advantages of the unknown enemy, who could make his insidious attacks under the most various covers. We can now take another step forward in sanitary prophylaxis by putting forth the question: What can be done to lessen or remove the dangers inherent to the present prevalence of the venereal diseases? In order to do so intelligently it seems necessary to give a brief sketch of the characteristic features of the diseases themselves and to compare them with other diseases which have become the subjects of private and public sanitary prophylaxis.

In the eyes of the medical profession at present probably gonorrhœa occupies the most prominent position on account of its influence on the general welfare of the community, and particularly in regard to the frequency with which it contaminates marriage. This position gonorrhœa has attained only within the last few years. It was long considered a simple inflammation of the mucous membrane of the genitourinary organs, principally of the urethra of men, caused by irritations of various character, infectious to a certain degree, but mostly looked upon as a mere local affection of little consequence. Not until about thirty years ago was gonorrhœa suspected of having very close and important relations to a number of diseases and diseased conditions particularly of the female reproductive organs. This was some time before 1879, when Neisser published his first report asserting that he had discovered the immediate cause of gonorrhœa in the shape of a specific microbe which he fully described and called the gonococcus. The general confirmation of Neisser's discovery and the improved facilities of demonstrating the gonococcus by various staining methods soon proved that those suspicions were only too well founded. The gonococcus has now been sufficiently studied and we know that once it has invaded some portion of the mucous membrane, it not only tenaciously sticks to it but also, enormously multiplying, rapidly spreads over the contiguous portions of the mucous membrane, primarily on the surface, but also into the deeper tissue layers and particularly into the glandular organs. As the mucous membrane of the entire genitourinary canal in both sexes forms one continuous lining without any strict dividing line between the peripheral and the more remote and complicated internal organs, it is easy to understand that the gonococcus may find its way into all the more or less important organs and cause there various destructive inflammatory processes, often dangerous to life. Strictly speaking, these affections are still local ones; however, the often unexpected discovery of the gonococcus in different joints, in tendons, bones, and other organs quite remote from the original seat, has demonstrated that the gonococcus may be transported by the way of the lymph and blood vessels, or directly through the tissues, and may cause foci of infection and various symptoms in these remote situations. In a comparatively small number of cases the gonococcus has been found in the blood and in the heart with local affections of the valves, causing a severe and usually fatal general affection. In other cases again symptoms of a general infection have been ob-

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served in which not the gonococcus itself but its toxins or poisonous products seem to have caused the general symptoms.

The local inflammation which usually follows within a few days the infection by the gonococcus may show various degrees of intensity, depending probably upon different conditions of the infected tissues or if you please upon individual predisposition. It becomes manifest principally by a more or less purulent discharge which contains the gonococcus in large numbers. After a certain time the inflammation usually subsides and it may cease entirely after four to six weeks without reaching any of the more important organs, with the complete elimination of the gonococcus and perfect restoration to healthy conditions. More often, however, subacute stages follow and lead to a state of chronicity; a slight discharge, principally found in the morning, may continue without any intervals of apparent cure, or all the symptoms may for the time being disappear only to reappear upon the slightest provocation in a more or less acute manner. But the gonococcus may also remain hidden for long periods of time without even the slightest signs of any disease and still retain its infectious qualities if transferred to some other individual. Gonorrhœa may therefore last indefinitely. It does not affect the offspring directly except perhaps by infection of the eyes, but it greatly reduces the birthrate by destroying the functions of the important reproductive organs in both sexes.

The venereal ulcer, chancroid or soft chancre, is essentially a local trouble, at least as far as our present knowledge warrants. Under this name have been included sores or ulcers of the most different origin, course, and termination; many, undoubtedly, not venereal but due to uncleanness and other causes, and in numerous instances not infectious nor inoculable. Some of them, however, exhibit some more pronounced and characteristic features and decided virulency, and in them a specific microbe, the so called streptobacillus of Ducrey and Unna has been found with some regularity, so that many authors are inclined to restrict the term chancroid to such ulcers and to consider the Ducrey bacillus as the specific causative agent. Such ulcers occur singly or multiple on the cutaneous as well as on the mucous surface of the external genital organs in both sexes, only very exceptionally on other portions of the body. They usually begin within a few days after exposure as pustules which rapidly break down into ulcers of various form and depth, mostly showing a persistent tendency to peripheral extension, and may cause quite wide destruction of tissue; they may be very painful or may cause only very few subjective symptoms at all, but quite often are accompanied by an inflammation of the neighboring lymph glands, the so called bubo, with a tendency to suppuration and the formation of external ulceration, the product of which may in turn become highly infectious. The chancroid often lasts for weeks and even months, but finally will heal without any impairment of the general health, usually, however, leaving a distinct scar.

Syphilis, on the other hand, is essentially a constitutional disease, affecting the entire organism and li-

able to produce changes in all tissues and organs of the body. Within the four hundred years within which syphilis has been rampant all over the civilized world, experience has taught us a great deal about this disease, but until quite recently all endeavors to discover its infectious agent have been unsuccessful. Only within the last two years discoveries have been made which bid fair to solve the mystery and promise much further light, and perhaps more efficient measures to fight against the disease. The virus, whatever it may be, is contained in the blood and in all tissue fluids, particularly in the discharges of any wound or even abrasion of the skin or mucous membrane, however small. It requires a similar break in the continuity of the normal protecting cover of both, on whatever locality of the human body, to enter into the system, and therefore it is by no means restricted to the genitals, but it is only too frequently accidentally inoculated on innocent individuals.

Once the virus has obtained such a hold, it immediately spreads to the neighboring tissues, without at first any outward sign until after a period of twelve days or more. Then it develops its first local symptom, the chancre, usually in the shape of an erosion or an ulcer which generally shows some very characteristic features, particularly a peculiar hardening, soon followed by an intumescence of some neighboring lymph glands. Only after another interval of quiescence, from six to eight weeks after the infection, the so called secondary symptoms appear, mostly on the skin and mucous membranes. These lesions again often suffer a superficial breakdown with eroded surfaces furnishing highly infectious material. In the so called secondary stage the disease remains for several years, usually not less than two, during which the symptoms may disappear followed by occasional new eruptions and by periods of latency; sometimes the eyes and some bones become affected. The infectiousness remains the same throughout this period. Later on the disease may disappear never to return and leave the individual apparently fully restored to health. In a not inconsiderable number of cases new outbreaks occur later, mostly localized and principally affecting the skin and the mucous membranes and neighboring tissues in the throat and nose, but these so called tertiary manifestations may occur in almost any organ of the human body, often causing permanent impairment and destruction, the importance of which largely depends upon the importance of the functions of the affected organs. The nervous system is considered the most vulnerable. A large number of chronic morbid conditions of the internal organs are now attributed directly or indirectly to syphilis which do not exhibit any characteristic anatomical features, among them affections of the spine and certain forms of insanity. Many of these diseases end fatally, but death is usually not officially attributed to syphilis.

Not satisfied with thus destroying the health and life of those who have acquired syphilis, the disease is liable to affect the offspring in the most disastrous manner. In the largest number of instances, preeminently so in the cases where the mother is diseased, the children perish before birth, causing

miscarriage or premature birth. In others the children are born on term and alive, but with direct manifestations of syphilis. They usually succumb sooner or later to the effects of the disease itself or become an easy prey to other disease. Or they survive, to develop tertiary symptoms later on or to remain poorly developed in body and mind for years or for life, while here and there children are born healthy and remain healthy under conditions where the contrary was to be expected.

How widely disseminated these venereal diseases really are, and how often they bring misery into married life and into the family, has been repeatedly explained and commented on before these audiences; the sketches of the diseases themselves just given, I hope, have made clear in which particular way the injurious consequences are accomplished, and what chances they offer for sanitary prophylaxis. The question therefore presents itself: What can be done towards their suppression?

Legislative and administrative measures can be dismissed from consideration in a few words: The experience in many cities and countries in Europe and elsewhere has sufficiently demonstrated the inefficiency of *réglementation* and similar measures; in this country they would hardly be supported or even tolerated by public opinion, at least certainly not at the present time or in the near future. Some relief might be obtained through legislation, if the law would make it a punishable offense to willfully and knowingly infect another person with any of the venereal diseases, although the difficulty of finding the victims willing to testify against the offenders might render such a law but little effective.

But cannot the health authorities interfere as they do in the suppression of other diseases? Quite recently at a meeting held in this very room a former president of the board of health of this city has explained how the health authorities have taken the initiative in the fight against contagious disease whenever such an opportunity has offered itself. Why have they never touched the venereal diseases? The answer can easily be given and understood, if you will compare the latter with those diseases against which the health authorities have acted, namely, the so called acute exanthemata, measles, scarlet fever, chickenpox, smallpox, diphtheria, typhus fever, to a certain extent typhoid fever and pneumonia, and finally tuberculosis. All these diseases with the exception of tuberculosis are of comparatively short duration; they run their course in several weeks at the utmost, and after that time they leave the patients free of any danger of infecting other individuals; even if they occur in large numbers, they are usually divided into groups of small size, and therefore it is not so difficult to isolate and to segregate the patients during the entire period of their infectiousness without making too extravagant demands on the public service. Besides, these diseases mostly render the patients incapable of following their usual occupation or work, so that enforced idleness does not involve any hardship; the diseases generally become so distinctly manifest that they cannot easily be concealed even if there existed more reason for concealment in the absence of any shame or disgrace being connected with their acquisition. On the other side the acute exanthemata are practically not immediately af-

ected by any treatment, but principally require nursing and hygienic surroundings; at the same time they are all more or less of grave character, liable to cause death and therefore looked upon with sufficient fear by the public in general, to make any preventive measures welcome.

All these conditions which favor the control of the health authorities in the contagious diseases just considered are absent in the venereal diseases. Only the least important one among them, the venereal ulcers, are of a comparatively short duration and perhaps their number, probably greatly varying at different times, is not so very large. But they are easily concealed, so long at any rate as they allow the patient to follow his occupation, and would probably evade detection by the health officers and thus render control ineffective. Gonorrhoea and syphilis, however, occur in such an enormous number of cases, that it would be absolutely impossible to follow up each one. Another difficulty is met with in the long duration of the diseases themselves and of the period of their infectiousness, and by the intervening of more or less prolonged intervals of latency, during which it is impossible or at least extremely difficult, with our present means, to establish the proof of infectiousness. Then infectiousness is not absolute, but is limited to certain conditions. It is naturally entirely out of the question to isolate such large number of patients on a separate island, like those affected with lepra; it is out of the question to keep all the patients under surveillance in our country with its largely migratory population, particularly so in a large city. Under such circumstances it would hardly be of any practical value, as has been proposed, to make reports of all cases of venereal diseases compulsory to physicians although without the name of the patient. The principal effect of such a measure would be to make the patients conceal their troubles even more than now, and drive them still more into the hands of quacks and unscrupulous physicians who would avoid making any reports. Some of these difficulties, it is true, apply also to tuberculosis, principally the large number of those affected, but in tuberculosis there is not so much reason for concealment, as the disease is not degrading to the patient in the eyes of his friends and acquaintances, but rather makes him a subject of pity and sympathy. Besides, concealment is in most instances hardly possible, since the disease usually becomes sufficiently manifest by some symptoms; moreover, it soon affects the working capacity of the patient and is known to be highly dangerous to life, while the venereal diseases, as a rule, do not incapacitate for work except perhaps temporarily, nor immediately cause serious conditions or danger of life. So there seems to exist sufficient reasons why we cannot expect the health authorities to alter the course heretofore taken, even if public opinion was prepared to sanction, favor, and assist any active procedures.

In regard to one of the contagious diseases we are fortunate enough to possess a prophylactic remedy of the greatest usefulness, namely, vaccination against smallpox. In some way it would seem to be an ideal prophylactic measure, if a similar virus for inoculation against syphilis could be found. Indeed, experiments have at several times been made with this intention, but so far the fact that neither the

causative microbe had been discovered nor any animal susceptible to inoculation of the syphilitic virus and suitable for such experiment had yet been found has prevented success. But even if the recent discovery of the active microbe and the successful inoculation of syphilis on monkeys should in time lead to the preparation of some prophylactic serum, would it not be considered by many as a blessing of doubtful value because it would be rather the means of affording immunity to immorality?

The question then naturally arises, whether the venereal disease cannot be influenced by treatment, either by effecting a complete effacement of the disease itself, or at least by abolishing or reducing its infectious features. Fortunately we can answer this question largely in the affirmative. All three diseases have one feature in common: Their virus, whether of well known or unknown nature, is a fixed one—that means it is attached to or contained in some certain tangible substances and can only be acquired by immediate contact with such substances, either while located on the patient himself or after having been transferred to some intermediary host; in no other way can the virus be transferred. The problem, therefore, is to prevent as far as possible the formation of these substances or to destroy their infectiousness. Let us see how far this can be done.

As to the venereal ulcer, as we have seen, the disease is restricted to one or several circumscribed foci which furnish the infectious material, and these are as a rule superficially located, so that they can directly be attacked with caustics and disinfectants; in many instances it is also possible to surround them with protective dressings, largely diminishing thereby the danger of the propagation of the virus to other individuals. As a rule one or several applications of caustics and the reactive inflammation caused by the same will be sufficient to transform the infectious ulcer into a clean wound and gradually induce complete healing.

Syphilis, soon after it had made its appearance as an epidemic towards the end of the fifteenth century, was found to be amenable to treatment by mercury, and this drug, in spite of much opposition, has maintained its supremacy in the fight against syphilis throughout all this time, notwithstanding the many abuses to which it has been subjected and which justly have been censured, and in spite of the prejudice against its use found among physicians as well as among laymen and largely among the general public. Indeed, perhaps with the exception of quinine as a remedy against malaria there is in medicine hardly an example of so specific an effect on the manifestations of any disease, and we may expect a favorable result from its administration almost with the certainty of a physiological experiment. It is only in regard to the method of its application that opinions differ, and the progress that has been made in all branches of medicine has also enriched us with new and more powerful means of treatment. Later on iodine had proved a powerful auxiliary. Besides, the importance of hygienic and sanitary measures and of the maintenance of the best possible conditions of general health have been duly recognized. The question whether our treatment removes only the manifestations of the disease or the latter itself is perhaps still an open

one. For the purpose of sanitary prophylaxis even the removal of the symptoms is of great importance, because incidentally the opportunity for the formation of infectious material and therefore the opportunity for the infection of other individuals are thereby greatly reduced. It has been demonstrated beyond doubt that efficient treatment in the early stages largely diminishes the probability of the appearance of the late or tertiary manifestations. Efficient treatment of the parents also undoubtedly reduces the mortality among the children.

As to the effects upon the disease itself, it seems that syphilis, like the more acute infectious diseases, has the tendency to run a certain course and after a more or less extended duration to cease voluntarily, for we see occasionally patients exhibit some slight early symptoms, and even without any treatment remain perfectly free from any symptoms afterwards; and although this probably cannot be demonstrated by exact statistics, common experience will show that a large number of patients who receive timely and efficient treatment, and take generally good care of themselves, remain well, have healthy wives and children, and reach the same average age as nonsyphilitics. It must not be overlooked that syphilis does not convey immunity of other diseases, and that naturally, considering the large number of its victims, a large contingent are liable to succumb to diseases which also attack and often destroy the nonsyphilitics. On the other hand, only too many cases which have been neglected show the contrary conditions. We may therefore state that, while we cannot positively claim to cure syphilis by treatment, we certainly can be of great assistance in a final recovery. So far we are restricted to the old standbys, mercury and the iodides. Possibly the recent important discoveries may in time lead to the discovery of a curative serum, as is the aim of all these investigations, but for the present positive results have not yet been obtained, according to the most recent statement of Neisser, one of the most prominent workers in this field.

Coming finally to speak of the treatment of gonorrhœa, we find a much more difficult and complicated situation. Theoretically the problem seems to be a very simple one; we know the causative agent and we know a number of remedies which are sure to destroy the same whenever and wherever they are brought in contact with the coccus. Practically we find on the one hand that these remedies are injurious to the tissues in which the gonococcus is found and therefore they must be applied with great caution. On the other hand the gonococcus is liable to migrate to localities and to organs which we cannot directly reach. The time is not so far remote when the treatment of gonorrhœa was considered so simple a matter that many physicians considered it beneath their dignity to treat a patient for gonorrhœa, or more frequently did not think it necessary to examine him before prescribing one of the usual remedies. But since the gravity of the disease and of its consequences has been better understood, much thought, study, and work has been devoted to its treatment, and many new methods of treatment have been recommended and introduced into practice. Thus we have become enabled not only to shorten the duration of gonorrhœa in many

cases and also to reach the more serious situations in which we formerly seemed helpless. Many cases can be cured in a comparatively short time if taken care of in an early stage. There is still some opposition to early active treatment, although common sense seems to clearly indicate that in an early stage the disease must be still sufficiently localized to offer opportunities of preventing it from extension to deeper regions. While it must be conceded that some conditions in gonorrhœa at present have to be considered incurable, I cannot sympathize with those, who, in every discussion of the treatment of gonorrhœa, solemnly rise to explain, what everybody else already knows, that the gonococcus may be hidden deeply in some gland wherefrom it cannot be dislodged and will stay there forever, menacing future infection. It does not seem fair to throw a wet blanket over the honest efforts of those who indefatigably try to improve older methods or to introduce new and more effective ones. Much has already been accomplished in reaching the cause and the seat of the disease. What before seemed impossible, and there is no reason to give up further efforts. I only mention the recent experiments with a curative serum which seem to prove the possibility of destroying the gonococcus in distant organs and of curing conditions which heretofore seemed to resist and defy all treatment.

In giving these general outlines of the possibilities of treatment of the venereal diseases, enough, I hope, has been shown to make it plain that we are by no means powerless against those diseases, and that much can be accomplished by such treatment to reduce the dangers of infection. In the absence of other means we therefore have, for the present at least, to look to treatment in connection with hygienic education of the patients as the most important means of sanitary prophylaxis of the venereal diseases. The next question will be the practical one, how to make such treatment available to the largest number of patients.

HOW CAN PROPHYLAXIS BE OBTAINED?

HOW CAN PROPHYLAXIS BY TREATMENT IN THE CASE OF THE VENEREAL DISEASES BEST BE OBTAINED?*

By JAMES PEDERSEN, M. D.,
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Whatever the measure of prophylaxis to be expected from treatment, it stands to reason that the more thorough the treatment the better the prophylaxis. The solution of the question which forms my part of the evening's subject must, therefore, be worked out along two parallel lines, namely: How to obtain thorough treatment in the private office; and how to obtain thorough treatment in the public clinic. The latter is the point of chief concern. To focus the discussion upon this point and to hope that the discussion may be productive, it will be necessary to assume that every man and every woman, whether professional or lay, who has undertaken or who will undertake to influence the health and happiness of human beings, the physician, the philanthropist, the settlement worker, yes, and the faddist whether he is ostensibly practising

medicine or not, it will be necessary to assume that one and all accept as axioms: (1) That the venereal diseases are tangible entities; (2) that they constitute a formidable menace to the individual and the State; (3) that there is a crying need for prophylaxis; (4) that actual treatment, persistent and persevering, is a potent agent in prophylaxis; (5) that material medication, given or applied, plus obedience to the laws of general hygiene, constitute the only actual treatment; (6) that to impart instruction as to the serious nature of the venereal diseases, is a social duty which all are under moral, legal, and ethical obligation to fulfill.

Assuming, then, that these axioms have been accepted universally, the question how best to obtain prophylaxis by treatment in the case of private office patients will never cause a moment's concern, and will therefore be eliminated from this discussion; while the same question as to public clinic patients will have been reduced to an enquiry into (A) dispensary facilities and (B) hospital facilities, necessary to thorough treatment and prophylaxis. To give all the weight possible to my paper, permit me to say that I have based it largely on the writings of Fournier who, in a long experience, has given this subject much careful study and thought. I have aimed, however, to adapt his suggestions to American sentiments and have ventured to incorporate my personal observations.

(A) *Dispensary Facilities.* To advance the success of prophylaxis by treatment, we need more dispensaries and better facilities in those already established, all with provisions for carrying out the restrictions against dispensary abuse. Another paper, this evening, has dealt with that specific point, therefore no further comment is desired here. I may be permitted to say, however, that at present, in my experience, combatting the evil rests chiefly with the physician in the dispensary. He feels called upon in many cases to challenge the would be patient, thus taking from the already limited time allotted to treatment and teaching.

To everyone thoughtfully interested, whether from a medical, a philanthropic, or a sociological point of view, it must be obvious that more dispensaries are needed, each located accessibly in a district not already provided for. These should be general dispensaries under private or public control. Special dispensaries, i. e., for venereal diseases, would defeat their own object by the unavoidable offensive publicity they would soon attract.

For convenience, the facilities needed in each dispensary may be taken up categorically under separate heads.

The Hour of the Clinic.—There should be an afternoon clinic and an evening clinic, both for men and for women, at least three times weekly (the men and women on alternate days), but six times weekly when the attendance demands it. An early afternoon clinic would accommodate the unemployed, would not interfere with their morning search for work, and would ease the strain on the evening clinic. The evening clinic should begin preferably at 7, admit patients for one hour, but remain in operation until 10 o'clock if necessary, the clinical staff doing duty in two divisions to avoid obliging any member to remain longer than an hour and a half. (It is understood that any patient un-

* Read before a meeting of the American Society of Sanitary and Moral Prophylaxis, February 14, 1907.

older than ten years of age should be referred to the medical clinic for children where, if necessary, he should be seen in repeated consultation by a member of the staff in venereal diseases, whose duty it should be to instruct the guardian in the details of prophylaxis.

The Waiting Room.—There should be a special waiting room attached to the suit of rooms devoted to the venereal clinic and the patients should be allowed to pass to it without detention in the general waiting room.

The Consultation Room.—This should either be large enough to so accommodate an increasing staff of clinical assistants that each may be consulted at least semiprivately by the patient before him, or there should be a series of small consultation rooms. Of the value of privacy in the clinic consultation room Fournier makes a strong point. It encourages the timid and diffident to seek advice, it lends to the dignity of the clinic, and it fosters careful treatment.

The Staff.—The staff should consist of a chief and as many clinical assistants as may be necessary in his judgment to complete the work of the clinic in an orderly and professional manner within the time limit. The clinical assistants should hold an official appointment from the institute of which the dispensary is a part or a branch, and their attendance should be made a matter of record and report. By way of return for their services, applicants for treatment at the clinic and able to pay should be referred to the private office of each clinical assistant in rotation, without favor, by the proper officer at the application desk. At least half the number of clinical assistants in the clinic for women should be women physicians, holding official appointments with the same responsibilities and privileges as the men physicians.

The routine work of duty in a clinic often becomes a drudgery to the recent graduate, especially when performed in the evening after a day's work at building up a private practice upon which he must depend for support. But if this or some similar system were not only introduced, but also carried out, by which the clinical assistant could feel that he was a factor in the personnel of the dispensary and of its parent institute; that his work had a value and a dignity in the opinion of the governing body, and that his growing experience received recognition in the form of patients referred to him for treatment at his office, then would his clinical duty be less a drudgery and more a pride, thus adding to the prestige of the institute that appointed him. A dispensary run on these lines, especially if equipped for giving careful, detailed, scientific treatment expeditiously, would attract desirable men who would learn as well as treat and teach. Thus would be created a growing number of young practitioners with knowledge and skill in the treatment of the venereal diseases, and the office of each would become a subcentre for prophylaxis by treatment. Many a clinical patient challenged as to his right to attend, declares that the "private doctor" he went to did not know how to treat him. Granting that the patient expected too much of the physician, was there not an avoidable error on the part of that physician in having failed to instruct his patient as

to the nature and prognosis of the disease? The vicious circle is obvious.

Orderlies.—They should be paid sufficient to attach them to the clinic and to inspire their personal interest. They should have the care of, and be responsible for the instruments, supplies, and equipment. Not more than ten hours a day should be expected of them. During the morning they could do duty in the medical wards; between the afternoon and evening clinics they should be allowed an interval for recreation to fit them for the evening's work. A system of substitutes should be arranged to secure for them at least one night off a week when the clinic is held every night. An annual vacation should be similarly arranged. Possibly no one who has not had practical experience can appreciate the time saving value of an intelligent orderly who has remained not only to be trained, but also to practise the training. Furthermore, he has an undoubted influence in attracting patients through his able assistance in expediting the work of the clinic. It may not be too Utopian to add that eventually, by arrangement with the Mills Training School, its pupils could serve a specified time in the different clinics in rotation as a part of their training in venereal and genitourinary diseases and their prophylaxis.

Nurses.—The present system of having undergraduate nurses in attendance at the gynecological clinics needs no elaboration. There will remain only the detail of extending it to the venereal clinic proper, in both the attached and detached dispensaries controlled by the hospital of training.

Equipment, Instruments, and Supplies.—These should be furnished and maintained by the hospital or institute of which the dispensary is a part or a branch, and should imitate those of a private office devoted to venereal diseases and genitourinary surgery. The orderly in the men's clinic, the senior nurse in the women's clinic, should have the care of these and be responsible for them. A well appointed, well sustained clinic is obviously a greater power in prophylaxis by treatment than its opposite. An important detail of the equipment should be printed slips, stating the nature and danger of the venereal diseases, the rules to be observed during treatment, and the rules for prophylaxis. Such a slip, covering the three diseases, should be given to every patient.

(B) *Hospitals.*—The question of hospital isolation of venereal patients need not come up for discussion. The fact that any such plan would defeat its chief purpose, and the fact that hospital treatment is needed only in exceptional cases, should be a sufficient veto. We need concern ourselves only with the exceptional cases. Though few, they are already in excess of the available hospital accommodations. As far as I know, all the general hospitals, excepting those under the control of the city, refuse patients in the active stages of venereal disease. Among the private hospitals, those that admit such patients, admit them under protest or only when an operative emergency is present or threatens.

The attention of boards of governors and other bodies in control of hospitals should be called to this deficiency and that, from the humanitarian point of view, there is need for relief, not only for the

sake of the infected patient, but also for the sake of the immediate community and the State. The different bodies in control of general hospitals should be appealed to most urgently, it is in their power to lend very substantial aid in the prophylaxis of venereal diseases.

In the public hospitals, one ward for men and one for women, should be set apart somewhat removed from the general wards. The orderlies and the nurses, respectively, in these wards should be responsible to a member of the house staff, he, in return, to a specially appointed board. The venereal wards would not be regarded with curiosity after the first few weeks; they would soon be accepted as an integral part of the hospital, as at Bellevue Hospital to-day.

If the criticism be made that this would multiply the duties of the house staff and increase the detail of the hospital management, let it be noted that the house staff has been increased in some hospitals and that it should be increased in all. Every house staff to-day has more work than is good, either for it or for the service. A periodic increase in every house staff to meet the ever growing demands would be no more than consistent with the modern idea of progress.

In a private hospital a man patient could be practically isolated with a graduate from the Mills Training School, who would carry out all the detail necessary to safeguard the neighboring patients. This has been done in my own practice with satisfactory results and without unduly disturbing the accustomed discipline and routine of the private hospital. Still easier would this be in the case of a woman patient whose special nurse would be detailed from the hospital's corps of women nurses.

The criticism that these suggestions as applied to dispensaries and public hospitals entail great expense may be anticipated. It is realized that to carry out any suggestion would require time, but while contemplating the greater, why not put into operation the lesser? Let the facilities in the dispensaries and hospitals already established be increased and improved at once. Let the expense be met by an annual legislative appropriation, forced, if necessary, by an aroused public sentiment. If the physicians here and abroad have found it necessary to warn the people against the ravaging danger of venereal disease, it is not too much to ask the people to aid in protecting themselves by providing themselves with immediately available defences in the form of more and improved centres of treatment and teaching, the potent aids in prophylaxis.

217 S. FORTY-SETH STREET

THE PRESENT STATUS OF PRELIMINARY IRIDECTOMY AS RELATED TO CATARACT EXTRACTION.*

By WENDELL REBER, M. D.,
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Read at the Session of the Medical Department
of the University of Pennsylvania, June 2, 1906.

The operation for cataract is fraught with possibilities so beautiful and at the same time so abysmally awful for the patient, that the method of its performance will ever remain a subject of legitimate

discussion among ophthalmic surgeons. So long as there are many men of many minds, there will be reasonable difference of opinion as to what constitutes the *best* operation. But, taking full account of the variation in temperament and viewpoint among a large number of operators, it would seem that where the patient has so much at stake, there would be general agreement to the proposition that *that* operation is *best* which insures the *greatest safety to the patient*.

For a few years past the writer has been impressed with the idea that the operation of preliminary iridectomy offers the patient the largest chance of success, and because of this conviction he has been pursuing this method whenever possible. It is because of the frequent opposition from both patients and their family doctors (not to mention a few of his closest ophthalmic friends) that the writer has ventured on a collective investigation that might embody the views of the majority of the prominent American operators, concerning the method of extraction of cataract with preliminary iridectomy. With this end in view, a circular letter was sent to one hundred and sixty American ophthalmic surgeons with an enclosed blank containing the four following questions:

1. Do you ever do preliminary iridectomy?
2. For what conditions?
3. Why?
4. If a cataract patient has lost one eye by operation (or whatever cause) would you do preliminary iridectomy if the patient's time would permit? and if so, why?

To this letter one hundred replies were received, and will be found in the body of this paper.

Etiology.—The question as to whether preliminary iridectomy shall be resorted to in cataract extraction, seems to the writer to hinge largely upon one's views as to the cause of cataract.

For a long time it has been the contention of many American ophthalmologists (and particularly Philadelphians) that in sedentary persons of gouty, rheumatic or diabetic diathesis or, for that matter, perverted metabolism from whatsoever cause, errors of refraction that had been allowed to go uncorrected up to 50 to 60 years of age were likely to set up low choroidoretinal disease, which sooner or later manifested itself in fine granular opacities in the vitreous humor along with cloudiness at the posterior pole of the lens, and beginning opacification in the lens periphery. Prominent among these is Risley, whose series of cases¹ show unmistakably the relation between the choroidal state and the lenticular disease.

In this day and generation, when there is general agreement as to the operability of most immature cataracts, and when every city and many small towns contain operating ophthalmologists in keen competition with each other, the proportion of classic senile mature cataracts (the "good cataract" of the previous generation of ophthalmic surgeons) to the total number operated, is small indeed compared with what it must have been thirty years ago. So that the proposition has now resolved itself into "How shall we look upon these partially matured

* Presented to the Ophthalmic Society of the Medical Society of the University of Pennsylvania, September 27, 1906.

¹ Transactions of the Society of Ophthalmologists of the University of Pennsylvania, 1891.

cataracts."² Hess maintains that every opacity in the lens not traumatic or congenital must find its explanation in some reduction of the body nutrition. It is the belief of Schoen³ that glaucoma and cataract are due, in the majority of cases, to chronic overexcitation of the accommodation. He asserts elsewhere⁴ that in astigmatic eyes even of young people which have been overtaken by working without correcting glasses, one seldom fails to find signs of equatorial cataract (by the use of a mydriatic). Roure,⁵ from a careful study of corneal astigmatism in thirty-three cases of double cataract, found that in eighty per cent. of the cases the eye first affected with cataract was the most astigmatic eye. Interest attaches also to the observation of Mitten-dorf⁶ that in the general majority of senile cataracts, the opacities appear first in the inner lower quadrant of the lens. He attributes the earliest involvement of this portion of the lens to the constant over accommodation for new objects, requiring at the same time forced convergence and downward rotation of the eyes. Risley's⁷ idea is that this region of the lens is the part least protected, and he sees in that fact sufficient reason for the appearance of opacities first in the inner lower quadrant.

Last year Risley⁸ laid down the dictum that intraocular conditions should, in large measure, decide which operation is likely to be followed by the best results. For example, if gout, rheumatism, diabetes, or other disorders of metabolism have produced changes in the eye, which in their turn have caused cataract, the posterior capsule and contiguous cortex are apt to be affected in the form of posterior polar cataract (as stated), and in such cases simple extraction is not deemed advisable. In the presence of these conditions, he prefers preliminary iridectomy. It would be interesting to know just how many patients with immature cataract are not the subject of some perversion of metabolism. Most subjects of immature cataracts are fifty-five years of age and over, and the almost invariable association of either gout, rheumatism, chronic constipation, or some other anomaly of metabolism with this period of life, is too well known to need repetition here. Elsching⁹ pronounced by de Schweinitz, "the most recent systematic writer on the subject from the ocular standpoint," believes "that many cases of chronic chorioidal disease may be due to gastrointestinal intoxication," a low grade phase of which condition seems quite the rule in incipient cataract patients. Unfortunately no one, as yet, has had systematic examination for urea, indican, acetone, urobilin, and conjugate sulphates, made in a large series of persons presenting immature cataracts. Enough has been adduced, however, to indicate that the great majority of cataract patients are not well people, and to show that cataract eyes, far from presenting a purely senile process, must in most cases be viewed as sick eyes, belonging to patients whose diathesis is almost sure to influence the healing process. General surgeons

are keenly alive to the deleterious influence of rheumatism, gout, diabetes, and syphilis; and we may well emulate their example and study well just how much trauma will probably be borne by an eye, and how it may be performed with the least subsequent inflammatory reaction. For however smooth the operation, should the healing prove complicated the visual result is almost certain to be somewhat prejudiced thereby. This brings us to the question of iridectomy and whether it should or should not be performed.

The Argument against Iridectomy.—Those who are devoted to the simple operation, urge against iridectomy, whether combined or preliminary, the following:¹⁰ (1) The cosmetic effect is poorer; (2) it is not only needless but more dangerous because of more traumatism; (3) vision is poorer because of iridectomy; (4) it necessitates a longer operation; (5) there is more dazzling after iridectomy; (6) the vitreous is not so well retained; (7) it is not justifiable to subject the eye twice to the risk of infection. These objections will be considered seriatim.

1. In rebuttal of this objection "as to a poor cosmetic effect," Haab¹¹ may be quoted: "In old persons owing to the loss of fat in the orbit, the upper lid usually hangs down over, and as a rule covers, the upper half of the cornea, so that one has to raise the eyelid with the finger in old people to find out whether an iridectomy has been performed." Stefan¹² fails to get the view point of those who contend so vigorously for a round pupil. "No patient," he says, "has ever asked me to remove his cataract in such fashion as to leave him with a round pupil. What the patient wants is sight. That is the only thing that concerns him and me too, as a practical oculist."

2. It is a needless and more dangerous operation because of greater traumatism. In 1897, Knapp, writing in Norris and Oliver's *System*¹³ says: "The eye mutilated by iridectomy, with its frequent contamination of the corneal scar by very small portions of iris and capsule and also inflammatory products, withstands these influences less than the eye after simple extraction. From my own experience, I have long been forced to the conviction which current literature has not shaken, that simple extraction is not only the best but also the safest operation for senile and many other cataracts." Among Continental operators who have recorded themselves as against iridectomy are Galezowski, Bravais, and De Wecker.^{13a}

Devereux Marshall¹⁴ prefers to extract without iridectomy although he admits that the latter method is less likely to be followed by iritis. Drake Brockman¹⁵ believes the 3 mm. flap operation without iridectomy the best—and he says also the safest—basing this statement on a comparative analysis of

¹ The reader is referred to Landolt's *Monograph* and to the admirable discussion of the subject from the personal standpoint, by Dr. W. F. Coleman, in the *Annals of Ophthalmology*, Vol. 1, p. 219.

² *Atlas of Operative Ophthalmology*, American Edition, p. 97.

³ *Archiv für Augenheilkunde*, XXX, No. 2, p. 183.

⁴ As regards the operation one would perform on one's own rather no hesitation ought to exist if he is affected with a veritable senile cataract. If he is in such hygienic condition that he can observe the repose for a few days which simple extraction requires it is best to operate with iridectomy. (DeWecker in Landolt's *Monograph*.)

⁵ Vol. 1, p. 11.

⁶ *Ann. Ophthalmologie*, March 1, 1906.

⁷ *Ibid.*

⁸ *American Medicine*, February 18, 1905.

⁹ *Monatsschrift für Augenheilkunde*, Jan., 1905.

three series of cases (293 in each series) of the simple, the combined, and the Pagenstecher operation.

In reply to these arguments we shall again quote from Knapp, writing this time (in 1906) in review of the latest edition of the de Schweinitz textbook (5th edition) wherein he says, "It is not so essential to spare the iris; small excision is a positive prevention of prolapse and its attendant consequences." In this connection the writer would like to record his conviction that trauma of the iris whether by iridectomy or bruising of the iris (as a simple extraction) is almost sure to result in a low grade reaction with outpouring of inflammatory exudate. Such changes are not readily seen with the unaided eye. But if a binocular magnifier and oblique illumination be used it will be easy to find fine synechia even after iridectomy (combined or preliminary) or fine tears in the iris after a simple extraction.

3. Vision and orientation are poorer because of iridectomy. Until there is more careful statement as to just how long after operation the vision was estimated, this whole question will remain unsettled. For instance, Geo. A. Berry's experience,¹⁶ which has been a large one, leads him to believe that vision is perhaps better after combined than after simple extraction. Schweigger is not so sure. Such Continental operators as Eperon, Von Hippel, Argyll Robertson, Manz, Fuchs, Jacke, Neese, De Vincentiis, Steffan, Swanzy, Sprague, Manolescu, Bagneris, Chodin, Desjardin, Schiess, Dianaux, and Hansen Grut do iridectomy and must therefore feel that the visual result is about equal with or without iridectomy, or they would omit the procedure.

Bauerlein¹⁷ practised the combined method in 860 cataracts and was entirely satisfied with the visual results. Zenker¹⁸ states that Duke Carl of Bavaria did the combined operation in 995 out of 1,000 cases and was similarly pleased with the average visual results. Gayet's well known showing of equal visual results in 195 combined and 195 simple extractions¹⁹ can be practically paralleled by that of A. Graefe, Fuchs, Haab, Von Hippel, Samelsohn, Schiess, Swanzy, Manz, and others. Ring²⁰ in comparing the results of the two methods in 2,155 cases (1,032 combined, 1,123 simple) found the average vision 34-100 in the combined series as against 31-100 in the simple series. Finally, a review of the facts deducible from the statistics of 11,250 cataract extractions reported and collected by F. M. Wilson,²¹ J. B. Storey,²² D. Webster,²³ J. E. Weeks,²⁴ O. Hallauer,²⁵ and W. Ahlbrand,²⁶ indicate that the choice as to simple and combined operation will be largely according to the caprice of the operator, each surgeon offering statistics which support his own method. So that so far as the visual outcome is concerned the chances seem about the same with or without iridectomy.

4. It necessitates a longer operation. This state-

ment does not hold if preliminary iridectomy is done.

5. There is more dazzling after iridectomy. The overhanging upperlid will cover the iridectomy and shade the eye sufficiently. Steffan, one of the most experienced of Continental operators, says: "I have iridectomized *downward* for years and I cannot remember any patient who has complained of dazzling."

6. The vitreous is not so well retained. Drake-Brockman's²⁷ three series of cases rather support this statement; for in the 293 Pagenstecher (extraction in the capsule with iridectomy) operations there was vitreous escape in 28 per cent.; in 293 combined operations there was vitreous prolapse in 6 per cent.; and in 293 simple operations there was loss of vitreous in 1 per cent. of cases. These are the results secured by an operator of large experience, although the varying results may be due in part to matters of judgment in technique. Mr. Marcus Gunn (of Moorfields Hospital) stated personally to the writer last summer that he saw very little vitreous prolapse and this he attributed to the fact that he always removed the speculum the moment his section was done. The surgeon who does but twenty-five to fifty extractions yearly is confronted with the fact that extraction without iridectomy requires a somewhat larger wound and somewhat greater pressure for expulsion of the lens, both factors that make good for loss of vitreous.

7. It is not justifiable to subject the eye twice to the risk of infection. To this we reply from Knapp:²⁸ "Loss of an eye by suppuration after iridectomy which thirty years ago occurred once in 250 cases, is now almost unheard of."

The Argument for Extraction with Iridectomy: (1) It does not require as large an incision; (2) capsulotomy is more readily done; (3) delivery of the lens is easier; (4) fewer secondary operations become necessary; (5) iris prolapse is rare; (6) any glaucomic tendencies during the healing are probably forestalled; (7) less confinement to bed; (8) hæmorrhage. These arguments, too, had best be considered *seriatim*.

1. It does not require as large an incision. This is self-evident.

2. Capsulotomy easier of performance. This also is apparent.

3. Delivery of lens easier. This because a way has been opened.

4. Fewer secondary operations necessary. This because of the enlargement of the pupillary area and the greater chance of a small clear portion of posterior capsule being found in the enlarged pupillary area.

5. Iris prolapse is rare. Iris prolapse is the *bête noire* of the advocates of simple extraction. In spite of the beauty of the simple operation Gifford²⁹ considers the danger of iris prolapse too great to recommend the operation. Haab³⁰ says: "It is not true that simple cataract extraction without iridectomy is less dangerous and less apt to be followed by wound infection because the traumatism to the eye is less extensive. The simple operation has the disadvantage that if during the night after the opera-

¹⁶ *British Medical Journal*, September 26, 1896.

¹⁷ *Lancet*, August 11, 1894.

¹⁸ *Simple Cataract Operations*, Wiesbaden, 1895.

¹⁹ *Lancet*, March 2, 1894.

²⁰ *Annals of Medical Science*, December 15, 1894.

²¹ *Lancet*, June 1, 1896. *Transactions of the Ophthalmological Society*, 1896.

²² *Transactions of the Royal Academy of Medicine in Ireland*, 1896.

²³ *Manhattan Eye and Ear Hospital Reports*.

²⁴ *Medical Journal*, lxi, New York.

²⁵ *Abhandlung der Vereinigung der Ärzte zu Basel*, 1896.

²⁶ *Archiv für Augenheilkunde*, xxx.

²⁷ *Ophthalmoscope*, March, 1906.

²⁸ *New England Medical Journal*, 1906.

²⁹ *American Journal of Ophthalmology*, 1904.

³⁰ *Atlas of Operative Ophthalmology*, 1905.

11. It is the operation best suited to complicated cataracts and not unsuited to any.

12. There is less need for subsequent needling operations.

To these we would add:

13. That the young surgeon by doing the two operations will acquire skill in ocular operations in one half the ordinary time; that is to say, it is in the nature of most excellent training to the surgeon himself without in the least jeopardizing the patient's chances.

14. (This seems to the writer the most important indication of all.) Any latent dyscrasia in the blood is altogether likely to reveal itself during the healing after the iridectomy, and the patient may thus be prepared by suitable treatment for the final operation. Too much stress cannot be laid on this factor in cataract extraction. The average ophthalmic surgeon seems vastly more able to extract a cataract skilfully than to treat any subsequent complication in the healing with one half as much skill. Not infrequently victory may be plucked from what might have been certain defeat by clever nursing and after treatment.

Out of the ninety-four replies received from the circular letter,³³ forty-seven indicated a sentiment in favor of preliminary operation by the following answers:

G. E. de Schweinitz: 1. Yes. 2. If one eye has been lost by operation—usually if the cataract is unripe. 3. Because other things being equal, the chances of ultimate success are enhanced. 4. Yes, for the reasons stated.

H. F. Hansell: 1. Frequently. 2. a. Immature double cataract. b. Complicated cataract with synechiæ. c. In precoçious senile cataract (before fifty years of age). 3. To improve vision and postpone the necessity of extraction; and to facilitate removal of the lens. 4. Yes. *Because I believe it is safer.*

John E. Weeks: 1. Not frequently. 2. Immature cataract; old arteriosclerotic individuals. 3. To avoid as far as possible *too much traumatism at one operation* and to avert possible hæmorrhage from the deep vessels. 4. I would urge preliminary iridectomy. If the cataract were complicated I might insist on it. The dread of an additional operation on the part of the patient is often sufficient to turn the balance.

G. C. Harlan: 1. Occasionally. 2. Immature cataracts, posterior synechiæ, restless patients, and other complications. 3. Less disturbance from cortex; painless extraction; freedom from prolapse; simple after treatment. 4. Yes, *because I consider it the safest operation.*

Peter A. Callan: 1. Yes, when the patient can spare the time. 2. In all cases of cataract where I consider an iridectomy advisable. Likewise I look upon it as an educational measure for the patient—a training for the extraction—especially valuable in immature cataract. 3. *It is the safest thing to do.* I consider the iridectomy when done immediately after the corneal section the most dangerous part of the operation. 4. I would urge preliminary iridectomy on just such patients. Two operations is a small matter with an unruly patient. If iritis follows the preliminary valuable indications are secured.

J. A. Lippincott, Pittsburgh: 1. In my early practice I did it as a routine measure. 2. Of late years, in all but classic senile cataracts. 3. Edges of the coloboma much more likely to injury in combined extraction. In myopic cataract, cleansing is accomplished much easier after a preliminary. 4. The chances of

success would be somewhat better, and so as a rule I advise it.

Lucien Howe, Buffalo: 1. Yes. 2. For optical purposes; in unruly patients; in complicated cataracts. 3. *Safer.* 4. Yes. *Much safer.*

W. M. Sweet, Philadelphia: 1. Yes. 2. All but classic senile cataracts. 3. *Safer.* 4. Yes. *I think it is the safest thing to do.*

Casey A. Wood, Chicago: 1. Frequently. 2. In all but classic senile cataracts. 3. Less danger of iritis, prolapse, and infection. 4. Yes. *Safer for reasons just given.*

W. H. Wilder, Chicago: 1. Frequently. 2. Always in one eyed people and in complicated cataracts. 3 and 4. *Safer, better healing, more accurate operation, cortex more easily removed.*

H. V. Würdemann, Milwaukee: 1. Yes, occasionally. 2. In slowly progressing cataracts when patient will consent to two operations. 3. Less traumatism, less postoperative iritis, easier delivery of lens débris. 4. Yes. Two comparatively simple operations produce less trauma with subsequent irritation than the more severe combined operation, or the bruising of the iris that occurs in simple extraction.

Charles Stedman Bull, New York: 1. Yes, frequently. 2. In all but classic senile cataracts in quiet self possessed persons. 3. To simplify the extraction, to avoid infection and iritis, to shorten the final operation, to diminish chances of vitreous escape and intraocular hæmorrhage. 4. Yes, for the reasons given.

J. L. Thompson, Indianapolis: 1. Yes, frequently. 2. Everything but classic senile cataract. 3. Time gained in immature cataracts—everything in much better preparation for final extraction, which is a relatively simple matter after preliminary iridectomy. 4. I would not take the patient's time into consideration. *I never have and never shall operate on any patient who has but one eye without preliminary iridectomy.* I do not tell the patient that it is better that said iridectomy be made, but tell them most plainly *that I will do nothing else. The patient is not capable of deciding the matter.* I therefore clear my skirts and avoid the sleepless nights I used to have when my patient was going through the inflammation which presages the loss of sight.

C. A. Veasey, Philadelphia: 1. Yes. 2. Because we most likely thus prevent the serious accidents and complications which frequently arise in combined and simple extractions. 3. Less liability to postoperative mischief. 4. Under these circumstances I always do preliminary iridectomy for the reasons given.

W. K. Butler, Washington, D. C.: 1. Yes. 2. When patient has lost other eye by cataract operation. 3. *Safer.* 4. Yes. *Easier extraction and healing better.*

W. Franklin Coleman, Chicago: 1. Almost always. 2. In all senile cataracts complicated or uncomplicated. 3. I believe it to be the safest operation. 4. Yes, for reasons given.

Albert Rufus Baker, Cleveland: 1. Yes. 2. In all but classic senile cataracts. 3. I think it safer. *If I had a cataract on my own eye, I would have preliminary iridectomy done.* 4. Yes, for reasons given.

Frank Allport, Chicago: 1. Yes. 2. For all cataract extractions. 3. Because it is the safest procedure for removal of cataract *and is what I would select for a cataract operation on my own eye.* 4. Yes, for the reasons stated.

A. A. Hubbell, Buffalo: 1. Yes, frequently. 2. Immature cataracts, and eyes with marginal blepharitis and conjunctivitis which cannot be readily controlled (the so called "dirty" eye of the Germans). 3. *Preliminary iridectomy lessens the danger of postoperative iritis.* 4. Yes, for reasons given.

Henry Dickson Bruns, New Orleans: 1. Yes, very often. 2. In immature cataracts, nervous patients, and

³³In the circular letter which was sent out, four questions were asked, to wit: 1. Do you ever do preliminary iridectomy? 2. For what conditions? 3. Why? 4. If a cataract patient has lost one eye by operation (or by whatsoever cause) would you do preliminary iridectomy on the remaining eye, if the patient's time would permit? and if so, why?

any complication whatsoever. 3. As I open the capsule with my knife, preliminary iridectomy makes that manoeuvre perfectly easy; less traumatism—cortex more easily removed—less chance for complete closure of the coloboma by postoperative inflammation—better field for subsequent iridectomy if needed. 4. If the patient has but one eye I always insist on the preliminary iridectomy. *It trains the patient for the extraction and the knowledge we acquire of the patient is incalculable.*

S. B. St. John, Hartford, Conn.: 1. Frequently. 2. In mature and complicated cataracts. 3. To shorten the final operation and prevent operative accidents. 4. *By all means. Trains the patient, quiets his fears, and adds to the chances for success.*

William Zentmayer, Philadelphia: 1. Yes. 2. In immature and complicated cataracts and unruly subjects. 3. Matures the cataract, shortens the extraction, lessens trauma, and probably averts grave accidents at the extraction. 4. Yes. I believe preliminary iridectomy to be the ideal operation, but not always practicable.

Charles S. Turnbull, Philadelphia: 1. I always do it. 2 and 3. Because absolute antisepsis after a cataract operation is a myth; the patulous tear ducts are a constant menace. We bandage eyes too long, twenty-four hours is usually long enough. 4. *If you would give your patient the best chance in the world, do a preliminary iridectomy.* I have been often told that to do so is cowardly; *be that as it may, I have no right to risk my patients' sight and all it means to them, to say nothing of my own reputation.*

S. C. Ayers, Cincinnati: 1. Yes, occasionally. 2. In immature cataracts and nervous subjects. 3. Safer. 4. Yes, safer.

Dunbar Roy, Atlanta, Ga.: 1. Yes. 2. In nervous individuals and immature cataracts. 3. I feel much safer when it is done. *If I should be operated upon for cataract, I should want a preliminary iridectomy done.* 4. Yes, and would always insist on it.

J. O. Stillson, Indianapolis: 1. Yes, in fully one half my cases. 2. In immature and complicated cataracts. 3. It does away with the risk of hæmorrhage after extraction; is a practical guarantee of a good pupil, and *most of all trains the patient as to their part in the drama.* 4. *I most certainly would unless the patient is so unruly that a general anæsthetic would become necessary.*

Laertus Connor, Detroit: 1. Yes. 2. In all but classic senile cataracts. 3. To lessen all risk. 4. Yes. Safer.

Cassius D. Westcott, Chicago: 1. Yes. 2. In all but plain senile cataracts. 3. Safer. 4. Yes. *Because it is what I would want done on my own eye.*

E. C. Ellett, Memphis: 1. Yes. 2. In any case in which unusual precautions were necessary. 3. Extraction easier, shorter, and in every way more satisfactory. 4. Yes. *I am firmly convinced that the best interests of the patient are served by the operation thus done.*

S. G. Dabney, Louisville: 1. Yes. 2. In all immature cataracts. 3. Maturity is hastened. 4. Certainly. The final operation is rendered safer. For the surgeon who does not do a great many operations, *it is the wise plan.*

F. T. Rogers, Providence, R. I.: 1. Yes. 2. In immature cataracts and unruly subjects. 3. Safest. 4. Yes. *It presents all the good points of the von Graefe operation which has been very successful in my practice.*

Lewis H. Taylor, Wilkes-Barre, Pa.: 1. Yes. 2. In immature and complicated cataracts. 3. To hasten maturity and render operation safer. 4. Yes. I believe it is the safest practice.

Charles W. Kollock, Charlestown, S. C.: 1. Occa-

sionally. 2. In all but classic senile cataracts. 3. Chances of success greater. 4. Yes, safer.

Samuel Theobald, Baltimore, Md.: 1. Yes. 2. In immature and complicated cataracts and unruly subjects. 3. Lessened trauma and safer subsequent extraction. 4. I would be inclined to do so.

Ira J. Dunn, Erie, Pa.: 1. Yes. 2. Immature and complicated cataracts. 3. Safer. 4. Yes, safer.

William I. Gamble, Chicago, Ill.: 1. Yes. 2. Nervous, unruly patients. 3. Simplifies operation and lessens complications. 4. Yes, safer.

Adolph O. Pfingst, Louisville, Ky.: 1. Yes. 2. In one eyed people, immature and complicated cataracts. 3. Trains the patient, shortens the operation, averts complications. 4. Yes, safer.

Daniel Dennis, Erie, Pa.: 1. Yes. 2. In immature cataracts and patients with gouty or rheumatic diathesis and unruly subjects. 3. Trains patients, reveals any latent inflammatory tendencies—shortens final extraction. 4. Yes. I think it safer. I never lost an eye with preliminary iridectomy; I have with combined extraction. *If I had a cataract in my own eye I should insist on preliminary iridectomy.*

J. W. Chamberlin, St. Paul, Minn.: 1. Yes. 2. Immature and complicated cataracts. 3. Reduces danger, renders extraction easier and *tells surgeon much of the condition of the interior structures of the eye.* 4. Yes, for reasons given.

William R. Murray, Minneapolis, Minn.: 1. Yes. 2. In one eyed people and complicated cataracts. 3. Reduces danger to a minimum. 4. Yes, for reasons given.

B. P. Croft, Greenfield, Mass.: 1. Yes. 2. Removal of majority of cataracts. 3. *I think it our best safeguard against all complications.* 4. I would. See answer No. 3.

Oscar Wilkinson, Washington, D. C.: 1. Yes. 2. In one eyed people. 3. Lessens trauma. *Patient is trained, operator secures valuable indications for extraction.* 4. Yes. See answer No. 3.

Edward Stieren, Pittsburgh, Pa.: 1. Yes. I have done preliminary iridectomy thirty-two times. 2. In feeble minded and insane patients, in otherwise unruly patients. In immature and complicated cataracts. 3. Less shock, less danger of postoperative inflammation—unobscured field—cleaner toilet of the wound possible. 4. Yes, I always recommend preliminary iridectomy to my students as the safest method for the beginner.

C. M. Culver, Albany, N. Y.: 1. I operate very little. 2. In all but classic senile cataracts. 3. For the promotion of safety and for instruction as to possible idiosyncrasies. 4. Yes, for reasons stated.

Oscar Dodd, Chicago, Ill.: 1. Yes. 2. In immature and complicated cataracts and one eyed people. 3. Easier operation in every respect. 4. Yes, safer.

Henry W. Ring: 1. Yes. 2. In one eyed people, rarely otherwise. 3. To render extraction easier and safer. 4. Yes, for reasons given.

J. B. Corser, Scranton, Pa.: 1. Yes. 2. In unripe cataracts and one eyed people. 3. My limited experience makes me believe it safer and surer. 4. Yes.

It is an interesting fact that of the preceding forty-seven surgeons who do iridectomy often as a preliminary operation, forty-three state that they believe it the safest method of approaching cataract. Five of them go so far as to say that were their own eyes to be operated on for cataract they would wish a preliminary iridectomy done. These were: F. Allport, Daniel Dennis, Albert Rufus Baker, Dunbar Roy, and Cassius Westcott. To this list the writer would like to add his own name. During the past summer Mr. Gunn, of Moorfield Hospital, London, said in a personal conversation with the author that in all patients over forty years of age

he invariably did preliminary iridectomy, and that it was the operation he would wish done on his own eye. Where there is so much testimony for preliminary iridectomy from those high in authority, it will be worth while to analyze the objection to it that proceeds from equally high authorities. Their main objection seems to be—not that the healing is any different, nor that the astigmatism is greater with it, nor that the visual result is any poorer—but that the eye is more mutilated (although it be done ever so surgically and skilfully), and that the eye is twice subjected to infection. The question of unjustifiable mutilation hardly stands, for if the iridectomy be done with a very narrow bent keratome, the operation is hardly much more than a paracentesis were not a bit of the iris excised, and this is generally done at the extraction anyhow. The question of infection after iridectomy, done as specified before, cannot be well sustained, for as Knapp says: "Infection after iridectomy in this day and generation is practically unheard of." What the writer therefore finds it hard to comprehend is why those who commonly do von Graefe's operation (or any combined operation) do not favor, or at least faithfully try preliminary iridectomy, if fear of infection is their only objection. Of course, if one is devoted to simple extraction they could hardly be expected to tolerate the idea of any iridectomy, preliminary or combined.

To the writer there is one objection raised by Fox, which seems of much weight. It is a fact in medical psychology, well known to most surgeons, that when a patient has once consented to an operation, the sooner it is done after that consent is gained the better; if not, the mental condition that grows out of much pondering and worrying over the matter has no especially good influence on the patient's disposition at the time of operation and on the healing process afterward. So that the lapse of six to eight weeks between the two operations may be a season of great tribulation to the patient. On the other hand, this effect is largely counterbalanced by the fact that many patients having gone through the iridectomy without pain or trouble are thereby encouraged and fortified for the second operation, particularly if they are in the hands of a surgeon who recognizes and reckons with these intangible influences. All things considered, these two arguments seem to fairly well neutralize each other, and the question of advisability of preliminary operation must be decided on other grounds. Let us see what many surgeons do in the presence of complicated cataracts.

The following surgeons resort to preliminary iridectomy when there is the slightest complication, but do not employ it as a routine measure:

S. D. Risley, Philadelphia: 1. Yes. 2. In that large class of cases that present evidence of prolonged choroidal irritation or disease. 3. It gives some indication as to how the eye will bear further operation; and in choroidal disease I believe it has a positive therapeutic effect. 4. No, unless the condition of the eye as suggested indicated it.

Edward Jackson, Denver, Colo.: 1. Yes in some cases. 2. In nuclear cataract; for extensive posterior synechiæ; and in the presence of a small rigid pupil with uveitis in the other eye. 3. a. In comparatively young people for optical purposes; b. In these cases the

operation is a very difficult one. 4. In these cases the operation is a very serious, difficult operation. Added to the other parts of an ordinary cataract extraction, it materially lessens the chances of success if the iridectomy is not done as a preliminary one; c. In these cases the probability of serious damage to the eyes by uveitis following extraction is much greater than in the ordinary case. This danger is of overshadowing importance and can be materially diminished by doing iridectomy as a preliminary operation. 4. Yes, in these cases, but for the reasons given.

J. A. White, Richmond, Va.: 1. Occasionally, if patients will agree to the time interval. 2. For synechiæ; rigid iris; for immature cataracts and hypertension. 3. To avoid secondary complicating iritis, which is much more likely to occur if there is any trauma of the iris at the time of extraction; and to practically eliminate prolapse of the iris. 4. Not necessarily. If the eye presented an uncomplicated senile cataract I should do a simple extraction. Under the conditions noted before I would do a preliminary.

A. E. Bulson, Jr., Fort Wayne, Ind.: 1. Occasionally. 2. Immature cataracts and complicated ones. 3. To hasten maturity and avoid operative accidents. 4. It is my practice to adopt the procedures which I think are most likely to give success, whether the eye to be operated on is the only one remaining or not.

Myles Standish, Boston: 1. Yes, occasionally. 2. In unruly subjects, and eyes where I fear infection and vitreous prolapse. 3. Likely to enhance the chances for success in such cases. 4. If the first eye was lost by septic infection I should certainly not do a preliminary iridectomy.

W. B. Marple, New York: 1. Yes, at times. 2. In unruly patients, one eyed people, and infected conjunctivas. 3. It leaves conditions which are more favorable to prompt healing in such cases. 4. Not if the conditions were first class for extraction without preliminary operation. Only in conditions noted before.

Hiram Woods, Baltimore: 1. Occasionally. 2. Slowly progressive nuclear opacity and in old synechiæ. 3. I have a sort of traditional belief that preliminary iridectomy is a safe procedure in all cases where you anticipate trouble. 4. Never have.

Herbert Harlan, Baltimore: 1. Yes. 2. Immature cataracts in comparatively young people. 3. Because it is a little safer. 4. I do not regard the preliminary iridectomy as so much safer as to make it advisable in every case. I have seen at least one case (not my own) where the eye was destroyed as the result of a preliminary iridectomy.

Nelson Black, Milwaukee: 1. Rarely. 2. Immature cataract, increased tension, and posterior synechiæ. 3. Hasten maturity; relieves tension; allows of free passage of lens. 4. Yes, for the reasons given.

Charles J. Kipp, Newark, N. J.: 1. I have done so many times. 2. In complicated cataracts and one eyed people. 3. Because I thought it was safer. 4. Preliminary iridectomy does facilitate the extraction of a cataract, but I have come to the conclusion that it is of no advantage to the patient. (These two statements seem contradictory. Author.)

S. L. Ledbetter, Birmingham, Ala.: 1. Sometimes. 2. Immature cataract; hypertension. 3. For reasons given. 4. If the patient gave evidence of unruliness, or if there were extreme hæmorrhage from the iridectomy on the other eye, yes.

W. K. Rogers, Columbus, Ohio: 1. Not often. 2. In immature cataracts, hypertension, rheumatic subjects, and in advanced senility. 3. Reasons given. 4. Only in the presence of the conditions noted before.

Allen Greenwood, Boston: 1. Only seldom. 2. Immature cataracts. 3. To hasten maturation. 4. Only in complicated cases.

T. B. Tiffany, Kansas City: 1. Occasionally. 2.

Immature cataracts, hypertension, sluggish pupil. 3. As a safeguard. 4. No, only in the event of complications.

Horace Starkey, Rockford, Ill.: 1. Yes. 2. Immature cataracts, overripe cataracts, unruly subjects. 3. Safer. 4. Not necessarily. It is a matter of judgment in each case.

Mark D. Stevenson, Akron, Ohio: 1. Yes. 2. Unruly patients. 3. See 2. 4. Only as above noted. There are about so many eyes out of every hundred lost by infection in opening the eyeball. *In my own case, I should wish the complete operation done.*

L. D. Boose: 1. Yes. 2. Immature and complicated cataracts. 3. Corneal section can be made more accurate after preliminary iridectomy and whole extraction is easier. 4. Only if the cataract was not a classic one.

C. A. Dufour, Washington, D. C.: 1. Occasionally. 2 and 3. To hasten maturity. In all complicated cataracts. Patient can sit up sooner, an important thing in old people. 4. Yes. It enhances the chances of success.

J. F. Klinckendst, York, Pa.: 1. Only in special cases. 2. Hypertension. 3. To relieve tension. 4. No. An experienced operator should be able to determine the chance of success.

As matters stand up to this point forty-seven ophthalmic surgeons are willing to admit that preliminary iridectomy is the safest procedure for almost all cataracts and nineteen more state that they are favorably disposed toward it in the presence of complications. If these latter nineteen are willing to admit that it is the safest procedure for an eye that is more than ordinarily comprised, it would seem a fair question to ask: "Why is it then not the safest procedure for a so called uncomplicated cataract, which is in a measure the sign manual of an abnormal eye else the cataract would not develop?" The truth of the matter is there are very few cataracts which are not complicated either with low grade changes in the interior ocular structures, or with perverted metabolism and various diatheses in the patient's general economy, or both. The classic senile, the "good" cataract of Landolt, is a rarity. And were it not for the time element, the writer believes that preliminary iridectomy would become commoner even than it now appears to be. Zentmayer has summed the situation up well in saying: "To my mind, preliminary iridectomy is the ideal operation *when practicable.*"

There remain to be heard from twenty-eight surgeons who find very little, if any, use at all for preliminary iridectomy. Their statement of the case follows.

Herman Knapp, New York: 1. Almost not at all. 2. For badly complicated cataracts. 3. Perhaps the danger is divided. 4. If the remaining eye were healthy I would not. Interference with iris always leaves an inflammatory tendency of the iris and cornea.

L. Webster Fox, Philadelphia: 1. Rarely. 2. Only in glaucomatoid eyes. 3. To retard the progress of the glaucoma until the cataract is mature. 4. I see no reason why this should be done. In one hundred cases of preliminary iridectomy for cataract during the past fifteen years, I have found no apparent difference in the healing process from that of the combined operation. I have found, however, that all of these patients suffered more or less mental perturbation in regard to the final result, and as I could not discover any benefit from the preliminary work, I have abandoned it excepting in those cases complicated with glaucoma.

James Thorington, Philadelphia: 1. Rarely. 2. Immature cataract. 3. For visual purposes only before the extraction. 4. No.

Howard McL. Morton, Minneapolis, Minn.: 1. No. 2. Opening of the anterior chamber is never a dangerous operation and this procedure multiplies operations and all the accompanying preparations for operations. 3. See answer 2. 4. No. In over four hundred extractions I have never done preliminary iridectomy.

Lewis Stricker, Cincinnati, Ohio: 1. No. 2. Those who do artificial ripenings think it a wise step. 3. One ought not to expose an eye twice to dangers of infection and incarceration of iris when all can be accomplished at one operation. 4. No.

Stephen O. Richey, Washington, D. C.: 1. Very seldom. 2. In increased intraocular tension. 3. Reason manifest. 4. No.

Flemming Carrow, Detroit, Mich.: I do not do preliminary iridectomy, that is in a true sense related to the cataract extraction. I do it only to give the patient the most vision possible, while waiting for the cataract to ripen. In other words, I do it for optical purposes only. Under any other circumstances I invariably do the iridectomy at the time of extraction.

H. B. Young, Burlington, Iowa: 1. Very rarely. 2. In badly complicated cataracts. 3. Reasons obvious. 4. No. I am not free from superstition, having lost three eyes in my first hundred operations and these were the only three in which a preliminary iridectomy was done. I make the combined operation only when I cannot make the simple and stretch the point some—for the simple.

G. C. Savage, Nashville, Tenn.: 1. No. 2. No. 3. No. 4. No.

A. Barkan, San Francisco, Cal.: 1. Practically not at all. 2 and 3. I distinctly favor the simple operation as it is easier to perform and safer. 4. No. Opening the eye twice appears to me objectionable.

W. H. Dudley, Los Angeles, Cal.: 1. No. 2 and 3. I usually do the combined operation as I am unwilling to assume the risk, however small, of two operations. 4. No.

Eugene Smith, Detroit, Mich.: 1. Rarely. 2. Increased tension. 3. Reason obvious. 4. No.

Harry Friedenwald, Baltimore, Md.: 1. Rarely. 2. In badly complicated cataracts. 3. To reduce the danger of iritis. 4. No.

Arthur G. Bennett, Buffalo, N. Y.: 1. In my earlier practice, but not in the last ten years. 2. Because I had been taught by Priestly Smith that it was the safest thing to do. 3. I cannot satisfy myself that a double traumatism conveys any particular guarantee of success. 4. I would not.

Joseph Willetts, Pittsburgh, Pa.: 1, 2, 3, and 4. No.

M. H. Post, St. Louis, Mo.: 1. Once in twenty-seven years. 2. High myopia. 3. Muddy vitreous. 4. No.

Walter N. Alling, New Haven, Conn.: 1. I have done it twice. 2. For badly complicated cataracts. 3. For reasons obvious. 4. I believe that simple extraction gives my patient the best chance.

Walter Snyder, Toledo, Ohio.: 1. No. 2 and 3. No. 4. No. I believe firmly that I would be nearly doubling the risk to the patient. I believe that nearly all trouble proceeds from infection from the lacrimal system.

Edward B. Heckel, Pittsburgh: 1. No. 2 and 3. —. 4. No.

Frederick Bentley, Seattle, Wash.: 1. No. 2 and 3. —. 4. No.

John Chase, Denver, Colo.: 1. No. 2 and 3. —. 4. No.

W. C. Bane, Denver, Colo.: 1. No. 2 and 3. —. 4. No.

George H. Price, Nashville, Tenn.: 1. No. 2. and 3. —. 4. No.

H. Moulton, *Leeds, Kent, Eng.:* 1. No. 1 and 2. — 4. Only if the remaining eye presented a badly complicated cataract.

E. E. Holt, *Portland, Maine:* 1. Formerly rarely. 2. Immature cataracts. 3. It was then thought to be the safest way to remove them. 4. I do not think I would. The less traumatism the better, other things being equal.

H. ... *Leeds, Kent, Eng.:* 1. No. 2 and 3. — 4. Only if the remaining eye presented a badly complicated cataract.

J. ... *Park, Herts., Eng.:* 1. No. 2 and 3. No. 4. I would explain the matter to the patient, and if he so desires would do it because the consensus of opinion seems to be that it is the safest, but my results with the usual operation have been quite as good as those of operators who do a preliminary.

Edward Beinstein, *Kalamazoo, Mich.:* 1. Many years ago, but not in past twelve years. 2. Immature cataracts. 3. Found it was no special help. 4. I see no reason why it should not be done, but personally I would do a combined operation.

To sum up, a hundred replies were received. Of this number eleven surgeons understood that artificial ripening was the question under discussion and their replies unfortunately could not be used. Of the remaining eighty-three, forty-seven believe that for most cataracts preliminary iridectomy is a safer procedure than combined or simple extraction; nineteen more believe that preliminary iridectomy is the safer thing to do in the presence of complications; and seventeen feel that the chances of success for their patient would be in no wise enhanced, but somewhat jeopardized by preliminary iridectomy.

A few words in conclusion. Naturally the personal equation can never be discarded in such a matter as this. Moreover, as in matters religious, much depends on how and under whom one has been ophthalmologically brought up, and what ideas have early and unconsciously become almost a part of him. And yet the man of science ought always, of all men, to be of open mind and open to conviction. The data herein submitted may be stated to support in considerable measure the argument for preliminary iridectomy, but *practically one third of the ophthalmic profession in this country do not practice it*. Whether they will be influenced so to do by the testimony here submitted is hardly likely. The surgeon who has done one hundred extractions has had his ideas crystallized for him by his results, and by them he is apt to be guided in his future work. It is to the beginner in ophthalmic surgery that these arguments are directed and for him we will quote in conclusion Landolt who finely says:

A procedure which facilitates not only the diagnosis of cataract but still more the most important parts of the operation on it (cystotomy, expulsion of the lens, clearing up of the anterior chamber), which permits avoidance both of traumatism and prolapse of the iris and consequently of the most redoubtable complication of that operation, such a proceeding seems to merit the preference over all other methods, and one might conclude from this that iridectomy ought always to constitute a part of the cataract operation. Speaking of all kinds of cataract that are met with in adult patients and speaking of them sincerely and without reservation, I do not expect to meet much contradiction when I declare that the extraction of cataract is never simpler, easier, or more durable than when performed on an eye on which an iridectomy has been previously made.

1212 SPRUCE STREET.

SOME UNPUBLISHED OBSERVATIONS ON ENDEMIC NEURITIS, WITH A REVIEW OF THE RESEARCHES AND OPINIONS OF SOME RECENT INVESTIGATORS.

BY JUSTUS M. WHEATE, M. D.,

Boise, Idaho,

Late Captain, and Assistant Surgeon, U. S. A.; Captain and Surgeon, Philippines Constabulary; Member of the Medical Society of the Philippines.

(Concluded from page 594.)

Among my correspondents I find but two who declare the heart lesion is always present in their patients, and but few who believe the lesion when it is present is primary to the disease, while in my experience I am confident a primary heart lesion is invariably present in some degree. Now, can this be due to some inherent weakness peculiar to the Filipino? I will add that in my examination of a great many Filipinos for enlistment, I have been impressed by the remarkable percentage exhibiting some abnormality of heart sounds. Is this a racial characteristic, and if so what connection, if any, has it with the heart lesion in beriberi in the Filipino? These men are all without doubt studying beriberi, and while for the most part they agree on one constant lesion, duodenitis, yet are far apart on the pathognomonic lesion and specific cause.

I believe the bacterium encountered by Rost as well as that of Wright, to be concomitant. The uncinaria of Noc need not be seriously considered. The coccus of Okata and Kokubo may be found in Japanese patients but it has eluded Herzog (9) in Filipinos, and I may add that I have seen nothing like it. For the diplococcus of Tsuzuki (10) I have more respect. I will discuss that later.

In a hasty review of the opinions of my correspondents in reply to my circular letter, it is interesting to note the lack of uniformity on most of the points involved.

Taking a few of them *ad seriatim* (see circular letter):

(a) Major F. A. Holden, District Surgeon, British North Borneo: I believe beriberi is caused by a microbe residing somewhere in the tissues of the body. I have been unable to demonstrate a permanent form of bacteria in the blood of different persons I have examined.

R. S. Adamson, Labuan, British North Borneo: My own belief is that the disease is caused by a bacillus which produces a toxine, thereby causing chemical changes somewhat similar to the diphtheritic paralysis. I believe that beriberi is only infectious if persons are actually living in the same room with infected individuals. Also, *that persons with open wounds and sores seem more liable to contract the disease under the above conditions than those who have no sores.*

(b) and (c) not discussed.

(d) Major Holmden: I have not seen a perfect recovery from a very serious case.

Dr. Adamson: I have known severe cases recover.

Dr. Bowie, United States Public Health and Marine Hospital Service, Nagasaki: I have seldom seen severe cases recover, especially if the digestive organs have become involved.

Dr. Cunningham, Kudat, British North Borneo (formerly at Christmas Island): Many severe cases of beriberi improved to the extent that they resumed hard manual labor, showing no signs of beriberi with the exception of an abnormal knee jerk; but the majority

of cases, whether mild or severe, which came to my knowledge, eventually succumbed after a second, third, fourth, or even a fifth attack. It seems to be very difficult to be absolutely certain when a man suffering from beriberi is cured, even when nothing abnormal can be found on examination. I have known patients with no positive signs or symptoms of beriberi die quite suddenly within a few hours of being discharged from hospital as cured.

(1) Colonel R. Havelock Charles, I. M. S., Calcutta: The disease is endemic among the Chinese inhabitants of Calcutta. I have never known it to be epidemic, but about six years ago there was a great mortality amongst the Chinese here due to beriberi, possibly owing to arrival of many fresh emigrants.

Dr. Adamson, Labuan: In this country it is not epidemic.

Major Holmden: I would call the disease sporadic in Borneo.

Dr. Cunningham: Endemic with recrudescences.

As a matter of curious interest in this connection which illustrates the geographical distribution of disease I quote from a letter from W. Morey, U. S. Consul at Colombo, Ceylon: "So far as I know, there is not a physician (army or civilian) in Ceylon who has ever diagnosed a case of that disease. It has not occurred here for about a century, and when it did appear about 1789 and 1804, it was among native soldiers (Tamils and Malays) of the British Army. Locomotor ataxia, however, occurs here occasionally among the Malay people and is sometimes misnamed beriberi."

(2) Dr. Bowie, Nagasaki: Rice has everything to do with it, at least in Japan, as was demonstrated in their navy.

Major Holmden: "I do not think rice can be blamed as a cause of the disease.

Dr. Adamson: Rice . . . may be a good nidus for the bacillus. Certainly during the course of the disease a full rice diet is apt to cause distention of stomach, leading to oppression and distress in the chest. I have seen patients who were tolerably well and on the road to recovery, partake of a rice diet and in six hours be dead.

Dr. Cunningham: The rice theory does not appear to be in favor, although as far as I know, it has not been completely proved that it plays no part in the history of beriberi. Mouldy, dirty, broken rice probably predisposes to the disease as any other unhealthy article of diet would do.

Colonel Charles: The Bengalis live mainly on rice; they never get beriberi. The Chinese colony here eats rice, gets beriberi.

(3) Colonel Charles: The carpenters (Chinese) appear to suffer most.

Dr. Cunningham: Carpenters have the reputation of being very susceptible and largely attacked by beriberi, although they live better than coolies.

Dr. Adamson: The disease appears to be more common in those working in mines, and engaged in felling virgin forest.

Major Holmden: In Borneo, I might say the only people suffering from beriberi are the Chinese coolies. Laborers on the railways, coolies on tobacco estates, and such like occupations render them liable to contract the disease.

(4) Not discussed.

(5) Dr. Bowie: I have found that heart lesions are an accompaniment of the later and more severe phases of the disease. With recovery they disappear.

Dr. Cunningham: Valvular lesions appear in my observations to be rather the exception than otherwise. When they have been present they have eventually disappeared in the large majority of cases when they have progressed favorably.

Major Holmden: In light cases one gets a bruit caused by slight dilatation of the right heart. In severe cases I should say a valvular heart lesion is always present. Both sides of the heart being hypertrophied, particularly the left, and dilated heart cavities on the right. Heart lesion eventually disappears. Heart lesion is secondary.

Dr. Adamson: A valvular heart lesion is not always present, and the reduplication of pulmonary second sound has not been common among my patients. I believe the heart does recover. The heart lesion is primary in some cases only.

Colonel Charles: Yes; functional troubles always present. They disappear before discharge of patients from hospital as a rule. My colleagues think they are secondary. There has never been a post mortem examination; it is not allowed; bodies are always claimed.

My biological and bacteriological experiments were conducted at irregular intervals during the latter part of 1904, the first part of 1905, and the first half of 1906. Lack of adequate facilities for thorough work, together with occasional interruptions in its continuity, occasioning loss of valuable clinical material, material at particular stages of development so essential to establishing sequence, rob my results of the finality that I hoped to establish. But I believe enough was accomplished to blaze the way for the final solution of the vexed problem if carried out under more auspicious circumstances.

In my inoculation experiments I used adult monkeys, male and female. These monkeys were not caged, but secured by a waist belt and cord and permitted extended freedom both indoors and outdoors. They were fed on mixed diet, in fact anything they cared to eat, chief of which were bananas and boiled rice.

The following experiments represent the work done in 1904-'05, followed by an interruption of several months; while the further work in 1906 was mainly along lines calculated to verify the deductions justified by the first series:

CASE I.—Filipino laborer, young adult. Had beriberi about six weeks. Had passed through a moderately severe second stage, i. e., the stage of inflammatory exudate with attendant dropsy, and was in the third or atrophic stage. Patellar reflex not entirely abolished, localized anæsthesia of parts of lower extremities, but still had a marked degree of the characteristic "gait." Appetite good, secretions becoming normal, and the general condition indicative of the convalescent stage.

EXPERIMENT I.—August 9. With a hypodermic syringe a few drops of blood were withdrawn from a basilic vein from Case I and injected subcutaneously in the sterilized axilla of a young adult monkey (female). For twenty-nine days this monkey continued in apparent health, having at no time shown any reaction to the injection.

Conceiving the idea that the virulence of the infection is inversely as the duration of the disease, I waited for an opportunity to secure serum from a case in the acute stage.

CASE II.—September 19. Filipino laborer from the line construction gang, returned from work on the line after about ten days absence from station. Reports first symptoms of disease noticed four days previous to admission to hospital. Felt "debil," (lassitude, weakness, general discomfort, etc.), had pains in legs, later in arms. Pain much increased by voluntary movements; skin over entire body slightly hyperæsthet-

ic; pressure over nerve trunks caused severe pain. The concussion produced by walking caused stinging pain in feet and legs. Incoordination in the gait was noticeably present. Considerable oedema of feet and ankles. Heart sounds were noticeable bruit, first and second sounds of nearly equal length, feeble impulse, pulsations 90 in repose but readily variable to any exertion. Urine somewhat diminished in amount and high colored, but otherwise presented nothing characteristic upon chemical examination. Tongue fairly clean, moderate headache, temperature 37.4°C , with extremities cold.

EXPERIMENT II.—September 19. A few drops of blood from the median basilic vein from Case II was injected into the inner side of the thigh of a male monkey.

EXPERIMENT III.—Same date as II. With a sterile antitoxine syringe a few c.c. of cerebrospinal fluid was withdrawn by lumbar puncture from Case II and about 1 c.c. injected subcutaneously in the axilla of the female monkey used in the first experiment.

Both monkeys ate well and appeared in perfect health until on the afternoon of the third day, when No. III showed a disinclination to eat and appeared stupid, yet hyperæsthetic to any molestation. By the morning of the fourth day there was noticeable stiffness of muscles and movements and attempts at walking were laborious. Handling seemed to cause pain. Little inclination to eat. On the following day these symptoms had markedly increased in degree and a noticeable oedema was present in the hind legs. The heart beat was feeble and rapid and first and second sounds could not be differentiated. Monkey sat upon haunches, crouched down, hands hanging limply and head drooped upon breast in the attitude of sleep, and was not easily aroused. I had no data by which to estimate the relative amount of urine, but the monkey urinated but twice during this day. Condition continued practically unchanged except perhaps a little increase in the dropsy until, on September 26, eight days after injection, when there was a rapid increase in the dropsy, involving the entire body. The heart was very feeble, dicrotic, and very rapid, finally ceasing entirely in the late afternoon.

Up to this time there was no appearance of reaction in No. II, which had continued to eat and exhibit his usual activity. On September 28th, the tenth day after the blood injection, this monkey showed symptoms of stiffness in walking, which increased during the following day, and which thereafter followed a course practically parallel to that of No. III, terminating in death on October 4th, after two weeks of illness.

Post mortem findings in these two cases were practically alike. A general infiltration throughout the tissues softened myocardium with markedly dilated cavities which were filled with thickened blood. Kidneys congested and somewhat softened, seemingly. Diaphragm was lax and baggy, oedema of lungs, bladder nearly empty. There was considerable effusion at the base of the brain and continued into the cord, the subdural space being completely filled and distended, and the membranes of the cord noticeably congested. There was a state of congestion throughout the alimentary tract with occasional minute echymoses due, apparently, to the bursting of a capillary. Cover glass preparations were made from both cases, from the heart blood and from the meningeal fluid after sedimentation. After drying and fixing, the blood covers were stained with carbol fuchsin and the meningeal fluid with methylene blue. There was a moderate degree of leucocytosis, with large and small lymphocytes and distorted erythrocytes. In the meningeal specimens were a few polymorphonuclear neutrophils and a number of endothelial cells. Nothing suspicious of pathognomonic import was discovered.

While these results were in a measure disappointing, yet it seemed strongly corroborative of first section and in contrast to the first experiment further strengthened my belief in the attenuation of virulence corresponding to the continuance of the disease.

CASE III.—On December 2nd, a patient was admitted to the ward in the early dropsical stage. The history obtained warranted the inference that the case was of about seven or eight days' duration. The hyperæsthetic stage had entirely subsided, and was succeeded by marked anæsthesia over the dorsum of feet, anterior tibial region, dorsum of hand and forearm, with localized areas over plantar, and posterior tibial surfaces. In this connection it is well to add that sensation is never entirely lost on the plantar surfaces and between the toes until the patient is almost moribund. This phenomenon I have always found, regardless of the degree of anæsthesia of the area supplied by the cutaneous branches of the tibials and peronei higher up the extremity. There was the usual severe pain attendant upon deep pressure of the nerve trunks in the calf and thigh muscles and deep pitting. Regurgitant murmurs were pronounced and first and second sounds were of equal duration. Patellar reflex entirely abolished, paresis of flexors of both feet and hands. Patient unable to arise from sitting posture, and when placed upon his feet could not walk nor even stand unaided. In other words, the clinical picture was typical of the disease in this stage. Partly for therapeutic effect as well as for experimental purposes, a 20 c.c. antitoxine syringe full of spinal fluid was withdrawn.

EXPERIMENT IV.—One c.c. of this fluid was injected into the belly wall of a male monkey on December 2nd. Nothing of note followed during the next six days.

In the meantime, test tube cultures were made of a part of the remaining fluid in the following manner: A small quantity of garden earth was baked in the stove oven for three hours and set aside for twenty-four hours, when it was again baked for two hours. A little of this earth was pulverized and mixed with the spinal fluid in a test tube, plugged with cotton and kept at room temperature for twenty-four hours. After agitation it was filtered through a thick layer of absorbent cotton, and covered glasses made and stained with Höchst's medicinally pure methylene blue. Repeated trials with these preparations showed only endothelial cells, a few polymorphonuclears, and a varied assortment of crystalline debris from the earth precipitate.

EXPERIMENT V.—One c.c. of this culture was now injected subcutaneously in the axilla of a fifth monkey on December 5th.

The remaining filtrate was again mixed with the earth precipitate of the culture and the whole spread upon a plate in a very thin layer, set out doors in the sun, covered with a layer of gauze to arrest any dust or other contamination, and left for about ten hours, when it was practically dry from evaporation. The driest portion was collected and wet with water previously boiled, agitated, and again filtered as before.

Some of this second filtrate was now injected into another monkey on December 6th.

Monkey of Experiment V, injected on December 2nd, remained well until the 8th, when he was observed to be drowsy and refused to eat. On the 9th he appeared stiff, walked laboriously, seemed to be suffering pain, and preferred to sit in the crouched attitude, with drooping head and hands, and refusing to eat. By the following day there was considerable anasarca and the same general symptoms as in the previous experiments. The subsequent history for the next four days was parallel to that of Experiments III and IV, becoming markedly dropsical with increasing paralysis

of the extremities, rapid breathing, dilated heart, terminating in death on the 12th.

EXPERIMENT VI.—Injected with the sun-dried culture on the 6th, showed no reaction whatever up to December 20th, when he precluded further observation by escaping from captivity. He certainly exhibited no evidences of paralysis in the alacrity with which he availed himself of his liberty.

Cover glass preparations were made from the heart blood and meningeal exudate from the last two cases.

The success in transmitting the disease in Nos. III, IV, and V, left no reasonable room for doubt that a specific cause must be present which had thus far eluded discovery.

I concluded it must be due to inefficient or inappropriate stain, and decided to use another, this time using Thayer's modified Ehrlich's triacid stain. The blood specimens showed crenated red cells and necrobiotic changes with diminished rouleaux formation. Many small and large lymphocytes were present, with occasional polymorphonuclear neutrophiles. The preparations stained well, the nucleus standing out clearly. Within the stroma of the polymorphonuclears was to be seen a minute organism slightly darker than the surrounding protoplasm. It was slightly curved and arranged oftenest in pairs, and in what appeared to be different stages of development, since in some there was an appearance as of spore formation which were a trifle larger than the fellow of the pair. There were occasional single specimens outside the corpuscle in the free fluid, but in these extracorporeal specimens the spore appearance was not observed. These organisms are very minute, being but little larger, apparently, than the bacillus of mouse septicæmia.

They stain poorly and irregularly, and I am now confident that they resist the single basic dyes, which explains my failure to find them in the earlier cases, the same care in technique having been maintained in each instance.

The meningeal stains showed numerous endothelial cells and lymphocytes, and a few polymorphonuclears in which the organisms were found. Many fields were searched to find occasional organisms, but this is no doubt accounted for because of lack of centrifugation, the specimens being made after six or seven hours of sedimentation in a small test tube.

Cover glass preparations were now made of blood from the ear of Case III and stained with the triple stain.

Fresh unstained blood was also examined, which showed a relative anæmia, pale red cells with a disinclination to rouleaux formation and which quickly became crenated. Both large and small lymphocytes as well as polymorphonuclear neutrophiles were numerous. In the stained specimens the organism was found, but in much fewer numbers than in the monkey blood, and no extra corporeal specimens were found.

Owing to lack of material, no further experiments were made until in March following, when blood from a patient in the first week of the disease was obtained for examination and experiment.

Four monkeys were secured for this experiment and are designated as Experiments VII, VIII, IX,

EXPERIMENT VII.—March 12. A few drops of blood from the ear of Case No. IV, diluted with an equal quantity of normal salt solution were injected into the leg of the monkey.

On March 20th there were well developed symptoms of the disease which progressed in a course clinically parallel to the preceding experiments until on the 26th the dropsy was so marked and all the signs of impending dissolution so apparent that venesection was tried. About half an ounce of thick blood was with-

drawn from the arm which flowed with much difficulty. There was immediate and marked amelioration of the symptoms of distress, in perfect accord with the results in like cases many times observed in patients. The relief thus obtained was transient, and by the second day the former condition had returned which terminated in death on the 29th.

The blood from this animal showed the same general characteristics as in Experiment VI, and the organism was present both within and without the corpuscle.

EXPERIMENT VIII.—March 30. A quantity of this infected blood was mixed with boiled rice and fed to this monkey, no other food being allowed during the four days which the contaminated rice lasted. On April 18th this monkey was in perfect health apparently, having shown no ill effects at any time from the experiment.

EXPERIMENT IX.—March 30. This monkey was fed on blood contaminated rice in the same manner as Experiment VIII. However, before giving the rice, a slight scarification was made with a scalpel well back in the submaxillary pouch, the pocket in which a monkey stores his food when eating in haste. This monkey's supper was withheld on the previous evening, and when given this rice, at once filled his pockets before proceeding to satisfy his hunger. On April 6th well defined symptoms of beriberi were present, which continued in a typical but moderate degree of severity through an acute, painful, and œdematous stage which slowly disappeared, until by the end of the month, the animal was practically well.

These experiments concluded my first series. Preparations for change of station precluded further work and nothing further was attempted. I am fully aware of the incompleteness of the chain. There are missing links which, while constituting negative evidence, require to be supplied by affirmative results.

Each of these experiments must be verified by a sufficient number of successes as to dispel all doubt of their ætiological significance. I believe enough positive evidence, however, has been deduced to warrant the conviction that beriberi is an acute, specific, infectious disease and communicable to susceptible animals. I am told by credible natives of the islands that a disease similar to that which I produced in my experimental cases is observed in the jungle monkeys. I regret that I have not been able to confirm this statement by personal observation, but the especial susceptibility exhibited by my captives lends strength to the claims of the natives.

During the course of the disease, repeated blood examinations were made from the blood of Cases III and IV, but of which no accurate data is now available. But of the results in general I am prepared to say that there is a gradual diminution of the number of organisms from about the end of the first week until the end of the third week when they seem to entirely disappear. Whether they undergo some unrecognized transformation or are lodged elsewhere in the tissues, I am unable to say. I am strongly inclined to the opinion that they entirely disappear, probably by phagocytosis in recovery cases.

Patients who die early in the course of the disease do so either from general toxæmia or from cardiac dilatation due to toxic influence. Those who furnish the occasional surprises as noted particularly in the Christmas Island patients, after leaving the hospital apparently well, die from sudden and complete inhibition of the cardiac plexus which is

still laboring under the protracted presence of the toxine. So long as the convalescent patient is protected from undue demands upon the circulatory function he will appear to progress toward perfect recovery, but after perhaps a long period of routine hospital life permitting a minimum of physical variation, he is turned out to undergo radical and sudden demands upon his vitality, it not infrequently proves the proverbial "last straw." Recognizing this condition even before I had concluded my experimental work, and witnessing the shocking results of a zealous but misguided custom prevalent among the laity, which, briefly, is that beriberi patients should be "exercised," I sent out from my office a circular letter to the different commands in my district which had for its object the correction of this erroneous method of treatment, and which was in part as follows:—

Recent investigations have demonstrated that much of former opinion and teaching relating to this disease are erroneous.

Very few European and American medical writers are personally familiar with this disease, and the textbooks of to-day differ but little from those of several years ago in their treatment of the subject. It is an acute, infectious disease caused by a specific organism which appears to be widely disseminated throughout tropical countries. It is necessary that this germ find entrance into the human body to produce the characteristic symptoms which we call beriberi.

Symptoms.—About the first thing that attracts the patient's attention to himself is a feeling of lassitude and drowsiness. He is disinclined to move. There is probably but a little loss of appetite during the onset, or for that matter during the first week. Many patients retain a vigorous appetite throughout the disease. Within a day or two, following these symptoms, the patient begins to complain of a feeling of stiffness of the muscles of the lower extremities, followed speedily by increasing soreness. In a great majority of patients, particularly in adult men, there is a history of some unaccustomed journey, or work in an unaccustomed locality, or if he is a soldier he will recall a recent expedition. It is quite natural under the circumstances for the patient to charge his general state of discomfort to the effects of the recent unaccustomed exertion.

Within a day or two more he will be pretty sure he has *rheumatism*, since the soreness in the muscles of the legs has become either intermittent or constant pain, greatly aggravated by movement. By this time a perceptible swelling of the ankles is noticed, not an acute inflammatory swelling, but a dropsical swelling. Press the finger tips into the doughy foot and ankle for half a minute and a deep indentation is left. There is no pain at that spot, but passing upward along the calf of the leg and up to the bend of the knee, any pressure along that region causes pain. If the case be a mild one this painful state will probably be limited to the legs, but in severe cases the same condition applies to the upper extremities.

The swelling, at first limited to the most dependent portion of the body, rapidly becomes general and the patient presents a picture of general dropsy. Former writers described two varieties of the disease, often spoken of as "wet" and "dry" beriberi, or beriberi *hydrops* and beriberi *atrophica*. These terms merely signify the stage or effects of the one and only kind of beriberi.

In severe cases which have a sudden onset the dropsy is always present, while in mild cases in which the virulence of the infection is not pronounced, the symptoms present themselves more slowly and in a milder

degree with the result that a general dropsy is often absent, and the advanced stage of the disease, the *atrophic* or "dry" stage common to all cases alike which survive the *acute* stage, presents the most char-

It is not definitely known what may be the modes of infection or transmission of the disease. It is certain that it can be transmitted by direct inoculation, and it is altogether probable that in the majority of cases the germ finds entrance to the blood through some abrasion of the skin. As the natural habitat (favorite abiding place) of the germ is in damp, dark, insanitary localities, places hidden from sunlight and its purifying influence, this would seem to explain the frequency of attacks among soldiers, laborers, and cargadores, on an expedition.

It is by no means impossible that the disease may be transmitted by the bite of some insect.

One fact that must be impressed upon the detachment commander is that *the disease is not caused by a rice diet*, as has been asserted by many persons.

It is conceivable that damp, soured rice may harbor the germs of the disease, and contact with it might induce the disease, but after cooking, it can not cause the disease even though such unhealthful food be eaten.

Treatment.—One grave mistake sometimes made is to "exercise" the patient. Such well meant but erroneous endeavors have doubtless caused the death of patients in the acute stage of the disease. In this stage the patient is already on the borderland of dissolution. The weak heart is battling against odds to maintain the circulation of a diseased blood, and the swelling or "dropsy" is the indisputable evidence that it is unable to accomplish its work even under the most favorable condition. It is evident that at such a time any additional work put upon it would result in death. Keep the patient in bed during the "dropsical" stage.

CONCLUSIONS.

1. Beriberi is an acute infectious disease, transmitted by direct infection, probably always through a skin abrasion upon some vulnerable portion of the body.

2. The specific organism causing the disease is an exceedingly small bacillus, usually seen in pairs but not encapsulated, and is found in the cerebrospinal fluid and blood only during the acute or inflammatory stage of the disease, after which time it rapidly disappears from these tissues.

3. The favorite habitat is virgin soil protected from sunlight. It is a slightly facultative anærobin and not very viable, being speedily killed by exposure to sunlight as demonstrated by bacteriological test and by clinical experience.

4. The former classification of the disease as *beriberi hydrops* and *beriberi atrophica* is erroneous. There is but one form of beriberi, which is characterized by three stages: 1st. The stage of invasion. 2nd. The stage of exudation, beginning in the cord and following by toxic motor and sensory paralysis of varying extent, which in typical cases precedes to the 3rd, or the stage of compensation, in which the disappearance of the bacilli and the toxic stage results in the rapid (usually) disappearance of the dropsy in cases in which softening and dilatation have not progressed to the degree of permanent loss of compensatory action.

5. The degenerative cord and nerve lesion is long present in all moderately severe cases, resembling the lesion in tabes in this particular, and even though the heart lesion *appears* to have subsided while the patient is leading the inactive life of a convalescent,

the damage to function is permanent. This explains the numerous cases of sudden and unaccountable death in patients leaving hospital apparently cured, as reported by many observers with extensive hospital experience.

6. That a toxine or toxalbumin should be isolated is the rational conclusion, and that an antitoxine curative in the period of germ activity and before degenerative change has taken place is the inevitable reward for properly directed effort.

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Correspondence.

LETTER FROM WINNIPEG.

The Western Canada Medical Journal.—*The Manitoba Medical College.*—*The Winnipeg Medical Association.*—*The General Hospital.*

WINNIPEG, March 20, 1907.

The *Western Canada Medical Journal* was established in this city early in the present year, and the March number has appeared. It is a journal purposing to meet the needs of the medical profession in the ever great and growing West, and is conducted in the interests of medicine, surgery, and the allied sciences. It is a bright, readable journal, and will be sure to meet with a good measure of success.

One evening during the early part of March the Alumni of Manitoba Medical College held their first annual reunion banquet in this city. It proved a most successful affair, as there were over one hundred present. The president of the Alumni Association is Dr. R. M. Simpson, of Winnipeg, and during the evening he responded to the toast to the Alumni Association. The chair was occupied by Dr. Popham. Among others present was Dr. F. Westbrook, dean of the University of Minnesota, and a graduate of the Manitoba Medical College. He delivered a very interesting and able address on The Ideal Medical Education. The toast to Alma Mater was proposed by Dr. J. Brown, of Carmen, Man., and was responded to by Dr. H. H. Chown, dean of the Manitoba Medical College. Only recently a new building has been erected for the purposes of this college, and Dr. Chown, who has been associated with the college since its inception, stated that the college was in a good financial condition, that the building was fully paid for, but that the equipment was not yet all that they could desire.

Recently the faculty extended the course of study from one of four to one of five years; and the matriculation standard of a bachelor of arts degree is looked for in the near future. In fact, when the course was extended, several members of the faculty

advocated that that standard be adopted at once. At the present time the course of studies is not arranged to the complete satisfaction of some, but as time goes on there are sure to be improvements along this line; and the young institution of the great and growing West will rival some of its older sisters in the East, if it has not already got a foot ahead of them. No doubt the governors of the university will rearrange the arts course in the near future to provide for the teaching in that department of such subjects as inorganic chemistry, physics, zoology, and botany.

The Winnipeg Medical Association met on the 11th of February. At this meeting a committee was appointed to bring before the City Board of Control the question of fees for police emergency calls and for notification of cases of infectious diseases. Another important question brought up for discussion was that of a uniform schedule of fees for the city and for the Province of Manitoba. This matter was also placed in the hands of a special committee.

The annual meeting of the corporation of the General Hospital of this city was held recently. According to the annual report there were treated in this hospital during 1906 4,741 patients; and in the outdoor departments there were 5,078 consultations. The increase in the work of the hospital in the past five years is seen from the following comparative statement: In 1901 the number of patients treated was 2,773; in 1902, 2,928; in 1903, 3,354; in 1904, 3,868; in 1905, 4,366; in 1906, 4,741. The number of deaths last year was 317 and the number of births 181. The hospital had five cases of typhus fever to deal with in 1906. During the year a nurses' home was erected at a cost of \$65,000. This was formally opened a few weeks ago. The number of patients in the hospital on the 1st of January, 1906, was 288; the number of patients admitted during the year was 4,272; the number of births during the year was 181; the total number of days' treatment was 103,712; the average daily number of patients was 284.14; the percentage of deaths was 6.68; the operations numbered 1,124. The receipts amounted to \$144,823.94; the expenditures to \$131,178.78.

Therapeutical Notes.

Drops for Neuralgia.

- R Veratrine,0.05 gramme;
Diluted alcohol,
Water,of each, 5.0 grammes.

Two drops of this solution contain one milligramme of veratrine.—*La Tribune médicale.*

Ointment for Intercostal Neuralgia.—Durand orders the patient to apply the following ointment to the painful parts once or twice daily:

- R Veratrine,0.01 gramme;
Morphine hydrochlorate,0.01 gramme;
Cold cream,5.0 grammes.

Pills for Neuralgia.

- R Quinine hydrobromate,1.0 gramme;
Aconitine, crystallized,0.002 gramme.

M. ft. pillulæ No. x.

As each pill will contain one decigramme of the quinine salt and a fifth of a milligramme of aconitine one pill should be taken every four or five hours.

Tablets for Migraine.

R Acetphenindol, 0.5 gramme;
 Salicylic acid, 0.05 gramme;
 Quinine hydrochlorate, 0.2 gramme;
 Saccharin, 0.001 gramme.

M. ft. one tablet and coat with chocolate.

A small dose of morphine may also be incorporated in this formula, but care must be had in such a case to limit the number of tablets taken during the day.

Vaginal Douches in Fœtid Leucorrhœa.—The following formula is recommended for this purpose in a recent issue of *Revue de thérapeutique* (November, 1906):

To a litre of hot water add two or three tablespoonfuls of this mixture:

R Potassium chlorate, 13 parts;
 Wine of opium, 10 parts;
 Tar water, 300 parts;
 White vinegar, 300 parts;
 Tincture of eucalyptus, 45 parts;
 Salicylic acid, 1 part;
 Sodium salicylate, 20 parts.

M. S. Two or three douches daily.

La Tribune médicale.

Treatment of Vaginitis.—A teaspoonful of the following mixture in a quart litre of hot water, for a douche:

R Solution of resorcin, 2 per cent., }
 Solution of salicylic acid, 2 parts per }
 thousand, } equal
 Solution of copper sulphate, 3 parts per } parts.
 thousand, }
 Solution of betanaphthol, 0.25 part per }
 thousand, }

Every other day the following tampon should be introduced:

R Salicylic acid, 3.0 grammes;
 Glycerin, 250 grammes.

M. S. Soak a cotton tampon in the above.

Or a vaginal suppository may be used by the patient:

R Acetanilid, 1.0 gramme;
 Tannin, 0.50 gramme;
 Extract of krameria, 0.25 gramme;
 Sugar of milk, 10.0 grammes.

M. To make one vaginal suppository. Cover it with petrolatum before introducing.

On Prophylactic Injections of Antitetanic Serum.—Serum therapy has proved of little or no value in acute tetanus, and in the more chronic cases its value, if any, is obscured by the natural tendency to recovery which many of such cases exhibit. Bär, in the *Correspondenzblatt für schweizer Aertze*, endeavors to estimate the value of the serum employed as a prophylactic agent, and gives a series of some nineteen cases in which its use is reported. The many differences in symptoms, technique, and even in diagnosis which these cases exhibit render any deductions of small account. It is very difficult to prove that the serum used in this way has had any beneficial results. Cases in which the tetanus bacillus is found in the wound are by no means certain to suffer from general symptoms. For this reason, if a patient in whose wound the bacillus is found should recover after prophylactic inoculation, the success of the serum is not established. It is most important that the after histories of those cases in which tetanus has supervened in spite of

prophylactic injections should be reported. Bär reports such a case in full. A boy of thirteen years sustained a severe compound fracture of the right forearm, and in spite of inoculation within four hours combined with very careful toilet of the wound, tetanus ensued on the seventh day. Amputation was done, and the boy eventually recovered. The form of the disease was in some respects acute and typical, but no bacilli were found in the amputated limb, which is, however, not unusual in undoubted cases of the disease.—*The Medical Chronicle.*

Expectorants.—Professor Eichhorst, in the *Deutsche medizinische Wochenschrift*, includes narcotics under this heading, and considers that the best way to check the fits of coughing due to tracheitis is to give the following:

R Codein. phosph.,
 Aq. amygd. amer., 5ss.

M. S. To take ten drops three times a day.

If the coughing fits are accompanied with anorexia, nausea, etc., this may be given:

R Codein. phosph., gr. v;
 Syrup. rubi, 5vj;
 Acid. phosph. dil.,
 Aq., 5.

M. S. One tablespoonful three times a day.

All the other narcotics are open to objection and should not be used, as they produce disagreeable secondary effects. In every case this class of remedy must be given up when the air passages are clogged with secretions, for there is a risk of setting up or of increasing cyanosis.

The true expectorants exert a dissolvent effect upon tenacious and adherent secretion, and when this is present it is useful to prescribe:

R Potass. iodid., gr. xlv;
 Syrupi, 5ss;
 Inf. ipecac. radices, ad 5vj.

M. S. One tablespoonful every other hour.

An expectorant effect is obtained at once by means of the following prescription:

R Acid. benzoic, gr. v;
 Camphoræ,
 Pulv. sacchar., gr. iij.

M. Ft. pulv. N. X.

S. One powder in capsule every other hour.

For chronic affections, like bronchorrhœa and putrid expectoration, the balsams are best, especially the essence of terebinth (1 drachm in three doses during the day in milk); myrtol (in gelatin capsules containing gr. iiss) every two hours, is an excellent remedy. For the others, including the balsam of Tolu, the author has no use. Catarrhal bronchitis is often of an infectious nature, and Eichhorst prefers to treat these seasonable attacks with benzoyl guaiacol, or benzosol, in doses of 7½ grains, three times a day. It is given as a powder flavored with peppermint and sugar. For chronic catarrhal bronchitis he recommends the fluid extract of hydrastis, ℞xxx.-xxx., four times a day. Steam may be included among the expectorants; the patient's room should be saturated with it. Lying face downwards, with the legs raised above the level of the trunk, will help expectoration in some cases; and another aid is rhythmic compression of the lower part of the chest.—*The Practitioner.*

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THE HEALTH OF THE PHILIPPINE ISLANDS.

The annual report of the Bureau of Health of the Philippine Islands for the fiscal year ending June 30, 1906, edited by Dr. Victor G. Heiser, director of health of the Philippine Islands, contains much valuable information concerning the activities of the scientific men composing the Bureau of Health in the Philippines.

The report calls attention to the comparative freedom from disease which the residents of the Philippine Islands who are willing to follow the simple rules recommended by the Bureau of Health have enjoyed during the year, although constantly exposed to highly communicable diseases. For an expenditure per capita per annum of five centavos, which is equal to two and a half cents of United States money, over a million persons have been protected against smallpox, and of over 1,600,000 living in the provinces exposed to cholera, only 1,443 contracted the disease, which means that only dozens were seized where hundreds were attacked before.

Quinine was distributed free to persons living in malarious districts. Many watercourses from which town water supplies are obtained were protected from pollution. Vigorous measures were enforced to enable the public to obtain good meat. The few cases of measles and diphtheria were carefully isolated. Cases of typhoid fever were carefully searched for, and measures were taken to disinfect the discharges from such patients in order that the disease might not spread.

During the year the death rate among the Ameri-

cans was 9.34 per mille, and even if several per cent. is added for those who left the Philippines sick and subsequently died in the United States, the death rate will still not be higher than in the most salubrious communities at home.

While it is satisfactory to report that cholera was confined to narrow limits and that fewer persons were affected than previously, it is discouraging for a health officer to be compelled to devote the greater portion of his efforts to keeping a disease in check. If the energy which was expended in combating cholera could be devoted to making permanent sanitary improvements which would make such diseases as cholera impossible, a long step in advance would be made.

During the year an exhaustive act relating to the establishment and maintenance of burial grounds and cemeteries and governing public funerals and the disposal of the dead was passed. The record of burials is not very accurate, although an effort is being made to have all burials reported, and during the year just passed more burials were reported than during any previous year since the American occupation of the Philippine Islands. In Manila there were 9,016 deaths among the permanent population and 470 among the transients. The death rate among the permanent population was 40.99 per mille. Although this is a very high death rate, it is lower than that of the previous year.

As a result of a special campaign of education in matter pertaining to the care of infants, the consumption of milk in the city of Manila increased about 500 per cent. In spite of this fact, it has had no marked effect in saving the lives of children, because the people do not yet understand the proper method of keeping milk fresh. Efforts are being made to induce the native Filipinos to be more careful in storing and diluting milk which is used for infant feeding.

The present outbreak of cholera began on August 23, 1905, in Bilibid prison. From this point it spread until 225 cases were recorded. The origin of the disease has not been satisfactorily accounted for. It seems to be pretty well shown that the infection was not imported. The spread of the disease in the provinces was not so rapid as it has been at other times. Dr. Heiser concludes from a study of the epidemic that education of the public is a much more effective measure in the suppression of cholera than methods that depend upon force for their application. He has found it practically impossible to make land quarantine effective. Consequently he considers it useless to stir up the opposition which such a quarantine usually produces.

During the past three years there has been a steady decline in the number of cases of plague, and the

period covered by the report under review records twenty-two cases, with eighteen deaths. In about six years and a half 1,100 cases have been reported in Manila, with a mortality of eighty-five per cent. Cavite, Naic, and Cebu are also affected with plague. Plague infected rats were found in Manila during March, 1905, and most active measures were taken for the prevention of the disease in man. A large force of rat catchers was employed, and so far as possible all infected rats were caught and destroyed. As a result the plague situation in Manila has been particularly satisfactory.

The Culion leper colony, on the island of Culion, was begun during the period of which the report treats. It is variously estimated that there are from 4,000 to 5,000 lepers in the islands. The Culion colony is at present able to care for about 800 of these. The colony consists of about 125 new nipa houses, each of which is large enough to accommodate from five to seven persons. The site is sanitary, and every effort is being made to provide a comfortable place of residence for this class of patients. The patients are given all possible liberty and are to a large extent controlled by regulations which they themselves make. They are allowed to punish offenders against their own regulations in any manner they see fit. They are allowed to select their *presidentes* and *consejales*, and have a police force of twelve men. The death rate from pulmonary tuberculous disease is 5.49 per mille.

The weather statistics published in the report are very interesting. The highest official temperature recorded during the year was 81°, on March 28, 1906. The lowest official temperature recorded during the year was 41.4°, on November 8, 1905. The highest monthly average recorded was 74.78°, during the month of April, 1906. The lowest monthly average recorded was 42.8°, during the month of February, 1906. There were 149 rainy days during the year. The total precipitation amounted to 194.33 inches.

The population of the city of Manila is 219,941. The following deaths were recorded: Typhoid fever, 45; intermittent fever and malarial cachexia, 196; smallpox, 5; measles, 1; whooping cough, 5; diphtheria, 9; influenza, 9; Asiatic cholera, 317; dysentery, 280; bubonic plague, 19; leprosy, 60; beriberi, 378; tuberculous disease of the lungs, 1,122; and other forms of tuberculous disease, 145.

The scientific men who are in charge of public sanitation in the Philippine Islands are deserving of much credit for the energy and ability they are showing in meeting the situation. The record of the Bureau of Health of the Philippine Islands is quite as good as the record of any similar body in any other tropical country in the world.

TRACTS FOR VENEREAL PATIENTS.

Education of the people is one of the most powerful agencies in promoting the sanitation of the present day, and its relation to the humane endeavor to limit the prevalence of venereal diseases received deserved consideration in the proceedings of a meeting of the American Society of Sanitary and Moral Prophylaxis held on February 14th. In this issue we publish in full three papers read at the meeting, those of Dr. Klotz, Dr. Pedersen, and Dr. Mewborn, also an abstract of the remarks made in the discussion. Among these remarks were those of Dr. Cabot, who made a good point in emphasizing the importance of teaching venereal patients by means of printed slips for their guidance. It seems that he has for some time followed the practice of distributing such tracts to his venereal patients in public clinics. They must have done a great deal of good.

The rules embodied in Dr. Cabot's leaflets are so wholesome and comprehensive that we are inclined to refrain from criticising that one of them which reads "Do not smoke or chew tobacco," though we have never felt convinced that there was sound reason for this prohibition, given as it is in almost all textbooks on syphilis. Dr. Cabot does not appear to forbid the use of tobacco in cases of gonorrhœa, and, indeed, it might be imagined to have a beneficial action in a palliative way, for smoking tends to induce thirst and to promote the drinking of "from six to eight glasses of water during the day."

With far greater frequency than is generally supposed both gonorrhœa and syphilis are doubtless spread in other ways than by sexual intercourse. Most of the victims of gonorrhœa are persons of uncleanly habits; moreover, they are so callous as not to entertain the thought of taking pains to avoid inoculating others. They cannot be reached by anything short of the *argumentum ad hominem*, so Dr. Cabot was wise when he added to the injunction "Always wash the hands after handling the parts" this intimation: "The discharge, if carried to the eyes, will cause blindness." The most hardened brute will take pains to save his own eyes if he gets the idea that they are in danger; if in so doing he incidentally adopts such a degree of cleanliness as will lessen the probability of his disseminating gonorrhœa, the result is a distinct gain to society. No harm can come from the free distribution of such tracts as Dr. Cabot has devised, and it is to be expected that much good may follow it.

The adoption of Dr. Bulkley's resolution recommending that the State Board of Charities be requested to require of all dispensaries and hospitals the distribution of such tracts to all venereal pa-

tients gives promise that Dr. Cabot's good work will be greatly amplified. The fornicators may not be reformed in this generation; perhaps they never will be, but there is promise that the grave consequences of their errors will be notably restricted by the efforts of the American Society of Sanitary and Moral Prophylaxis.

BLOOD DISEASES AND LIGHT THERAPY.

A short time ago we took the occasion to point out (*New York Medical Journal*, January 12th, page 77) the relation of the oxidative capacity of the blood under the influence of sunlight, emphasizing at the same time the fact that the wider general problem of the effects of various forms of light energy on the blood forming organs was one of intense theoretical as well as of practical interest. These practical issues have been under investigation for many years, and clinical experience has demonstrated the utility of the use of light energy in the treatment of leucæmia, pseudoleucæmia, polycythæmia, splenic anæmia, and pernicious anæmia. Experience has also shown that we are not yet in a position to predetermine results, and that it is premature at the present time to come to definite conclusions. Recent reports by Capps and Smith and by Pancoast have advanced our knowledge considerably and the deductions drawn by these observers are worth drawing attention to.

The remarkable results of the x ray treatment of leucæmia obtained by many workers have tempted the former investigators (*Journal of Experimental Medicine*, January 23rd) to learn somewhat of the rationale of these results. They have rejected experimentation on lower animals in their search for more fundamental deductions, maintaining that in this class of work particularly the human being himself can with perfect safety be put under experimental conditions from which tenable conclusions can better be drawn than from work with lower animals. They have selected patients suffering from leucæmia of the lymphatic and splenomyelogenous varieties, and have directed their attention more particularly to the serum reactions obtained from the blood of patients thus treated. The lymphoid cells are peculiarly reactive to the x rays, and Capps and Smith announce that in the leucocyte there appears a leucolytic substance as a result of the exposure to the x ray. This leucolytic substance, injected into the body of another animal, causes a marked decrease in the number of the leucocytes, particularly of the uninuclear and myelocytic varieties. Such a leucolytic substance was found in largest amounts in the serum of that patient who had best responded to the therapeutic action of the x ray. Phagocytosis was not affected in the studies of Capps and Smith,

but they did observe an increase in the agglutinating power of the red blood cells.

What is still more suggestive in the study of these observers is that hypodermic injection of a serum obtained from a leucæmic patient treated by x rays, which serum showed *extra vitam* marked leucolytic and agglutinating properties, produced a marked fall in the number of leucocytes in a patient suffering from a form of leucæmia which had shown itself particularly refractory to the x rays.

Pancoast's study, to which we have also called attention (*New York Medical Journal*, March 23rd, page 558), while more clinical in its character, is of special interest as amplifying our knowledge on this important subject and also as calling attention to the necessity of conservatism and as opening our eyes to certain dangerous elements which should not be overlooked. In his valuable summary of the cases of various forms of leucæmia treated by the x rays, including some 123 reports, it is noteworthy that, of the sixty-three patients who have been followed, only four, or 6.35 per cent., have remained alive and well for from three to six years after the primary symptomatic cure. All these even are under treatment for relapses following symptomatic cures. In over seventy per cent. of those that have died, or were at the time of his study in a critical condition, there had been a marked improvement of the symptoms or even a symptomatic cure reported. Thirty per cent. of these patients treated did not respond at all to the use of x rays.

One important fact may be obtained from Pancoast's review of the leucæmia question. In a large number of the fatal cases of both leucæmia and pseudoleucæmia the autopsy showed the presence of deep seated lymphoid deposits. As these were manifestly beyond the use of x rays, the application of Capps and Smith's leucolytic serum might render important service, even in view of the gradual immunity developed to the action of the leucolytic serum as brought out in their experiments.

These two recent studies emphatically indicate that a new vista in the pathology of blood conditions has been gained. They both caution us to proceed slowly and conservatively in our therapeutic endeavors, while at the same time building a foundation on which optimism may erect a useful therapeutic structure in the near future.

SOME POINTS IN HOSPITAL MANAGEMENT.

An admirable article dealing with this subject appears in the April number of the *American Journal of the Medical Sciences*, contributed by Dr. S. S. Goldwater, the superintendent of Mt. Sinai Hospital, New York. It is entitled *The Medical Staff and Its Functions: A Study in Hospital Organiza-*

tion. Dr. Goldwater emphasizes the fact that the primary object of a hospital is to do as much good as possible to the patients, but he makes it plain that something in addition to their medical and surgical treatment should be the concern of the attending staff. Though he advocates, and properly, we think, the absolutely exclusive vesting of the power of making appointments to the attending staff in the lay governing board, he points out that a professional staff actuated by proper motives and governed by intelligence can always make itself felt in the decision upon such appointments.

The functions of the admitting officer are more important, in Dr. Goldwater's opinion, than they are generally esteemed. Many hospitals have no official so named, but practically some medical officer always decides as to the admissibility of a patient. In cases of emergency, of course, everybody must be admitted, if only temporarily, but there is much room for judgment apart from emergency cases. One might readily fall into the habit of straining a point in favor of applicants able to pay the hospital charges and against those unable to pay, but such a policy, though it might enhance the financial security of the hospital for a time, could not fail in the long run to bring discredit upon it. Whatever may be the policy of the hospital, much discretion should be allowed the admitting officer, who, in the interest of rejected applicants, ought to maintain amicable relations with various relief agencies and cultivate reciprocity with the officers of neighboring hospitals, homes, and asylums. How humane is this as compared with the old admonition given to a homeless sufferer, "go to No. 1 Bond Street"!

The tenure of office of an attending physician or surgeon should be limited only by his falling into a state of physical or mental incapacity, and on the occurrence of such disability he ought to be placed on the consulting staff, so that he might to the end of his life be rewarded for his devotion to the interests of the hospital. Members of the attending staff and those of the house staff derive great advantages from their hospital connection, so that they are not entitled to pecuniary compensation. Nevertheless, the attending physician or surgeon should be free to collect current fees from the occupants of private rooms. Many other aspects of hospital management are reviewed by Dr. Goldwater, but the limitations of space forbid our particular mention of them at this time.

Obituary.

OTTOMAR ROSENBACH, M. D.,
OF BERLIN.

Professor Rosenbach died on March 20th, of mediastinal tumor and an associated heart affection. Born on January 4, 1851, the son of a physician, he

studied in Berlin and Breslau and was finally attached to Cohnheim and Traube. During the Franco-German war, in 1870, he served as a volunteer, took the M. D. degree in 1873, was assistant in the clinics of Jena under Leube and Nothnagel from 1874 to 1877, wrote a treatise on artificial valvular affections of the heart, his inaugural dissertation, in 1877, became professor of the University of Breslau, and took charge of the department of internal medicine of the Allerheiligen Hospital of Breslau in 1888. From Breslau he went to Berlin in 1896 and remained there until his death.

Rosenbach has published a large number of clinical, experimental, and critical papers on diagnostic, therapeutic, hygienic, general pathological, and linguistic questions. He has always stood up for uniform aims in medicine and for independence of the clinic in opposition to the prevailing fashion and methods of those specialists who consider their individual specialty independently and not as an aid in the treatment of a patient in general. Among the prominent men of our profession and our time, Rosenbach was certainly, more than most others, an original thinker, observer, and investigator who made no concessions to the extravagant fashions in medicine at the present day. Two of his many writings have appeared in English translations: *Diseases of the Pleura* (in Nothnagel's *Encyclopaedia*) and *Physician as Bacteriologist*.

News Items

NEW YORK CITY AND STATE

Changes of Address.—Dr. J. J. Ziegler, 225 West Fourteenth Street, New York; Dr. F. Ward Langstroth, to 166 West Ninety-seventh Street, New York.

Personal.—At the last meeting of the governors of the Woman's Hospital in the State of New York, Dr. Reginald M. Rawls was appointed assistant surgeon to the hospital.

The Glens Falls, N. Y., Medical and Surgical Society.—The programme of this society for a meeting, held at the office of Dr. G. A. Chapman, on Thursday evening, April 4th, included a paper on Ulcer of the Stomach, by Dr. Leo H. Neuman, of Albany.

The Sale of Cocaine and Its Preparations in New York State.—On March 28th the Assembly unanimously passed the A. E. Smith bill prohibiting the sale of cocaine and its preparations, except on prescription of a physician, to be effective June 1st.

The Buffalo Academy of Medicine.—The following programme was arranged for a meeting of the *Section in Surgery* of this academy, held on Tuesday evening, April 2nd: (a) Typhoid Perforation, by Dr. John Parmenter; (b) Intestinal Obstruction, by Dr. Marshall Clinton.

The Saratoga Springs Medical Society.—The following programme was prepared for a meeting of this society, held on Friday evening, April 5th: A Symposium on Goitre, arranged as follows: *Ætiology, Medical and Serum Treatment*, Dr. A. S. Downs; discussion opened by Dr. J. F. Humphrey; *Symptoms and Surgical Treatment*, Dr. George E. Beilby, of Albany, N. Y.; discussion opened by Dr. D. C. Moriarta.

A Woman Medical Student Wins Hospital Appointment.—At a competitive examination for the position of interne at the Williamsburg Hospital, Miss Mary Crawford, a student at the Cornell University Medical College, won the appointment, against thirty-four male competitors. Miss Crawford will begin work as an interne on January 15, 1908. After four months' work in the hospital she will become an ambulance surgeon.

The Syracuse Academy of Medicine.—The following programme was presented at a meeting of this academy, held on Wednesday evening, April 2nd. *Persuading Cases*, by Dr. James H. Brown; *The Influence of Diet in Disease*, by Dr. H. D. H. Smith; *Actinomyces*, by Dr. Frank McMorrow; *Pathology*, by Dr. H. S. Steensland; *Unrecognized Chronic Appendicitis*, by Dr. M. M. Lucid, Cortland, N. Y.

The Elmira Academy of Medicine. The programme for the evening, held on Wednesday evening, April 3rd, included the following titles: Dr. Charles H. Brazier, Clinical Professor of Surgery and Dean of the Elmira College (Medical Department), *Some Surgical Complications of Typhoid Fever, Affecting the Abdominal Organs*; Dr. Charles L. Squires, Elmira, N. Y., *Some Surgical Incidents*; Dr. Herman R. Ainsworth, Adirondack, *Some Incidents in Measles*.

Civil Service Examinations for the State and County Service.—The State Civil Service Commission will hold examinations on April 27th for, in addition to several engineering and other positions, the position of medical superintendent of the State Hospital for Tuberculosis. The last day for filing applications for these positions is April 20th. For information and application forms may be obtained by addressing Charles S. Fowler, chief examiner of the commission, at Albany.

The Mount Sinai Hospital, New York.—A considerable number of new physicians and surgeons will soon be added to the visiting staff of this hospital. The new appointees will rank as assistants to the present adjunct attending staff. The appointments to be made will increase the visiting staff of the hospital by seventeen men, and will affect the following departments: general medicine, general surgery, gynecology, genitourinary surgery, otology and ophthalmology, pediatrics, neurology, and dermatology.

A Commission to Investigate the Milk Supply of New York. The State Health Department has appointed a commission of five members to examine thoroughly into the entire subject of the city's milk supply and recommend what steps, if any, are needed to insure to the city an abundant supply of absolutely pure milk. The commission consists of Dr. Joseph D. Bryant, Dr. T. Mitchell Prudden, Dr. Rowland G. Freeman, Dr. L. Emmett Holt, and Dr. Abraham Jacobi. Their work will be independent of the Department of Health and other city departments.

The American Society of Sanitary and Moral Prophylaxis.—A meeting of this society will be held at the New York Academy of Medicine, on Thursday, April 11th, at 8.30 p. m. The programme prepared for the meeting includes the following papers: *How and to What Effective Extent Can the Health Authorities Aid in the Prophylaxis of Venereal Diseases*, by Dr. W. M. L. Coplin, of Philadelphia; *Professional Secrecy and the Obligatory Notification of Venereal Diseases*, by William A. Purrington, Esq.; *The Medical Secret and the Safeguarding of Marriage from Venereal Infection*, by Dr. Edward L. Keyes and Dr. Egbert H. Grandin. The reading of these papers will be followed by a general discussion.

Lectures on Public Health Problems and Hygiene. The Fordham University Medical School announces a series of lectures on Tuesday afternoons in April, at 4 p. m., on Public Health Problems and Hygiene, under the auspices of the New York City Department of Health. These lectures are to be illustrated by lantern slides showing conditions and their amelioration in New York. Members of the medical profession are invited to attend. The first lecture will be given on April 9th, by Dr. Thomas Darlington, the Commissioner of Health of New York city, on *The City's Health*. Dr. John S. Billings, Jr., the chief of the Division of Communicable Diseases, will lecture on April 16th, on *The City and Tuberculosis*, and on April 23rd, on *The City and Typhoid Fever and Other Communicable Diseases*. On April 30th, Dr. John J. Cronin, of the New York Department of Health, will lecture on *The City and School*.

The American Society of Tropical Medicine.—The fourth annual meeting of the American Society of Tropical Medicine was held in the Academy of Medicine, New York, on the evening of March 20th. Dr. L. W. Spratling, of the United States Navy, read a paper on *Yellow Fever Sanitation*, with Special Reference to Mild Cases; Dr. Louis L.

Seaman, of New York, read a paper entitled *Observations of Health and Disease in East Africa*. Dr. E. W. Pinkham, of New York, read a paper on *Abscess of the Liver in the Philippines*. There was a fair attendance of medical men and others interested in the diseases of the tropics. At the business meeting, which followed the reading of the scientific papers, the following officers were elected for the ensuing year: President, Dr. James M. Anders, of Philadelphia; vice-presidents, Dr. Rudolph Matas, of New Orleans, and Dr. William S. Thayer, of Baltimore; secretary, Dr. John M. Swan, of Philadelphia; councilors, to serve two years, Dr. James Ewing, of New York, and Dr. Ramon Gutierrez, of New York; councilor, to fill an unexpired term, Dr. Joseph McFarland, of Philadelphia.

The New York Academy of Medicine.—The following programme was arranged for a meeting of this academy, held on Thursday, April 4th, under the auspices of the *Section in Public Health*: *The Street Cleaning Problem in New York City*; *Street Dirt and Disease*, by Dr. W. Gilman Thompson; *Practical Difficulties in Cleaning the Streets of New York City*, by Captain F. M. Gibson, late Deputy Commissioner, Department Street Cleaning, New York City; *Practical Ideals of Street Cleaning*, by Mr. Rudolph Hering; discussion by Dr. F. P. Kinnicutt, Dr. S. A. Knopf, Dr. T. R. Maxfield, and Mr. G. A. Soper.

The *Section in Pediatrics* will hold a meeting on Thursday evening, April 11th, with the order as follows: *Presentation of Patients*; *Reports of Cases*; *Unexplained High Temperature in a Child*, 100.35° F., by Dr. L. C. Ager; *Papers*: (a) *Sarcoma of the Kidney in Children*, With a Specimen, by Dr. William Shannon; (b) *Remarks on the Exudation Diathesis of Cerny*, by Dr. A. Hymanson; (c) *A Study of the Variations in the Fat Content of Certified Milk, as Delivered in Brooklyn During the Year 1906*, by Dr. E. H. Bartley; discussion by Dr. H. D. Chapin, Dr. I. S. Southworth, and others.

A meeting of the *Section in Otology* will be held on Friday evening, April 12th, with the following order: *Report of Case of Diphtheria, Complicated by Acute Mastoiditis and Infective Sinus Thrombosis. Recovery After Operation*, by Dr. P. D. Kenison; *Paper: The Herpetic Inflammations of the Geniculate Ganglion and Its Complications in the Aural Region*, by Dr. J. Ramsey Hunt; general discussion of Herpes, by Dr. J. A. Fordyce; *Presentation of a Case of Displacement of the Auricle by a Tumor*, by Dr. W. C. Phillips; *Report of a Case of Occlusion of the External Meatus in an Infant, the Result of Forceps Delivery*, by Dr. W. H. Haskin.

The meeting of the *Section in Neurology and Psychiatry* has been postponed to Monday evening, May 13th, at 8.15 p. m.

Infectious Diseases in New York:

Compiled by the Bureau of Records of the Health Department, from the following statement of new cases and deaths reported to the city records ending March 30, 1907.

	March 30		—March 23	
	Cases	Deaths	Cases	Deaths
Scarlet fever	120	15	101	17
Smallpox	—	—	3	—
Varicella	70	—	99	—
Measles	419	5	444	13
Scarlet fever	379	17	375	19
Whooping cough	54	9	61	12
Diphtheria	111	41	318	34
Communicable diseases	124	22	410	169
Communicable diseases	28	20	21	48
Total	1,816	328	1,832	282

Society Meetings for the Coming Week:

MONDAY, April 8th.—Society of Medical Jurisprudence, New York; Society of Alumni of St. Mary's Hospital, Brooklyn, N. Y.; Waterbury, Conn., Medical Association.

TUESDAY, April 9th.—New York Academy of Medicine (Section in Public Health); Medical Society of the County of Schenectady, N. Y.; Buffalo Academy of Medicine (Section in Medicine); Medical Society of the County of Rensselaer, N. Y.; Practitioners' Club of Jersey City, N. J.

WEDNESDAY, April 10th.—Medical Society of the Borough of the Bronx, New York; New York Pathological Society; New York Surgical Society; Alumni Association of City (Charity) Hospital; Brooklyn Medical and

Philadelphia County Medical Society.—At the regular meeting of the Philadelphia County Medical Society, held on Tuesday evening, March 26th, Dr. Alfred Reginald Allen read a paper on Fat Crystals in the Spinal Cord; Dr. H. H. Donaldson read a paper on Studies on the Chorioid Plexus; and Dr. G. L. Streeter read a paper on Demonstration of Models Showing the Development of the Corpus Callosum. Cases were exhibited by Dr. J. H. W. Rhein.

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PHILADELPHIA AND THE MIDDLE STATES

Charitable Bequests.—By the will of Abby S. Queen, the Presbyterian Home for Aged Couples and Single Men, at Bala, received \$10,000. The Home for Incurables receives \$2,000, and the Western Home for Poor Children and the Home for Imbeciles, at Elwyn, receive \$1,000 each.

Woman's Hospital.—Donation Day at the Woman's Hospital, Philadelphia, was observed on Wednesday, March 20th. The endowed room for nurses was formally opened. The room is for the use of overworked trained nurses, particularly those without homes of their own in the city.

Undergraduate Medical Students Dine.—The Edward P. Davis Obstetrical Society, of the Jefferson Medical College, held its annual dinner at the Hotel Stenton, Philadelphia, on the evening of March 23rd. Dr. Hobart A. Hare, Dr. J. Chalmers DaCosta, and Dr. H. Augustus Wilson were the guests of honor.

Philadelphia General Hospital.—On Thursday, March 28th, the new wards for the insane at the Philadelphia Hospital were opened for occupation. At the same time a hydrotherapeutic plant was established. Other long needed improvements have been made at the Philadelphia Hospital for the accommodation of the insane.

Children's Ward at the Methodist Episcopal Hospital, Philadelphia.—The new children's ward of the Methodist Episcopal Hospital was formally opened and dedicated on Thursday, March 21st. The ward, which contains forty beds, is the result of a donation by three members of the board of trustees. The expenses of the ward are to be met through the efforts of the Woman's Hospital Association.

Philadelphia Neurological Society.—At the regular monthly meeting of the Philadelphia Neurological Society, held on Tuesday evening, March 26th, Dr. Alfred Reginald Allen read a paper on Fat Crystals in the Spinal Cord; Dr. H. H. Donaldson read a paper on Studies on the Chorioid Plexus; and Dr. G. L. Streeter read a paper on Demonstration of Models Showing the Development of the Corpus Callosum. Cases were exhibited by Dr. J. H. W. Rhein.

The Medical Society of Franklin County, Pennsylvania.—The quarterly meeting of this society will be held at Chambersburg, on Tuesday, April 16th. The following titles are included in the programme: Carbolic Acid Poisoning per Vagina, Dr. A. B. Sollenberger, Waynesboro; Catarrhal Fever, Dr. Thomas D. White, Orrstown; Contagious and Exanthematous Diseases, illustrated by magic lantern slides, Dr. D. Franklin Royer, resident physician, Municipal Hospital, Philadelphia.

Scientific Society Meetings in Philadelphia for the Week Ending April 13, 1907.—Monday, April 8, 10:30 a. m., General Medicine, College of Physicians; Wills Hospital. Tuesday, April 9, 8:30 a. m., Botanical Section, Academy of Natural Sciences. Wednesday, April 10, 8:30 a. m., Botanical Section, Academy of Natural Sciences. Thursday, April 11, 8:30 a. m., Botanical Section, Academy of Natural Sciences. Friday, April 12, 8:30 a. m., Botanical Section, Academy of Natural Sciences. Saturday, April 13, 8:30 a. m., Botanical Section, Academy of Natural Sciences.

Philadelphia Pathological Society.—At the regular semi-monthly meeting of the Philadelphia Pathological Society, held on Thursday evening, March 28th, papers were read by Dr. J. H. W. Rhein, Dr. G. L. Streeter, and Dr. J. H. W. Rhein. The report of two cases; Dr. W. G. Spiller and Dr. A. R. Allen. Internal Hydrocephalus, a report of two cases, one resulting from occlusion of the aqueduct of Sylvius; and Dr. A.

J. Smith, Acquired Intramural Intestinal Diverticula. Dr. A. O. J. Kelly, Dr. Joseph McFarland, Dr. E. M. L'Engle, and Dr. E. A. Schumann exhibited card specimens.

Club for Trained Nurses.—A club for trained nurses hospital and training school in the city of Philadelphia met at the Church House, Twelfth and Walnut streets, on Thursday, March 21st, for the purpose of discussing the formation of a club which shall serve as a meeting place for social purposes. The following are the officers of the proposed club: President, Miss Helen F. Greaney; first vice-president, Miss Nellie M. Casey; second vice-president, Miss Rebecca M. Halsey; third vice-president, Miss Lydia A. Giberson; recording secretary, Mrs. Margaret B. Leamy; corresponding secretary, Mrs. Robert B. Leamy.

Philadelphia County Medical Society.—At the regular semi-monthly meeting of the Philadelphia County Medical Society, held on Wednesday evening, March 27th, Dr. Alfred Gordon exhibited a case of trophoneurosis of the hand allied to Raynaud's disease and erythromelalgia. The following papers were read: Dr. Barton Cook Hirst and Dr. Norman L. Knipe, A Report of Three Cases of Fibromyoma of the Round Ligament in the Inguinal Canal, of Unusual Size; Dr. B. Franklin Royer, Some Unusual Cases of Scarlet Fever; Dr. Jay F. Schamberg, The Question of the Contagiousness of Scarlet Fever Scars, the Diagnostic Significance of Desquamation. The formal discussion of the last two papers was opened by Dr. William M. Welch and Dr. J. P. C. Griffith.

BOSTON AND NEW ENGLAND

Personal.—Dr. Henry D. Holton, secretary of the Vermont State Board of Health, has for the past two weeks been lecturing on Sanitation, in various towns and cities in Maine, in connection with the Maine State Board of Agriculture.

The Lawrence, Mass., Medical Club held a meeting at the house of Dr. J. G. McAllister, on Monday evening, March 25th. Dr. E. A. Locke, of Boston, read a paper entitled The Crusade Against Tuberculosis in Germany. The question of life insurance examination fees was discussed by the club, but no action was taken thereon.

The New England Society of Examining Physicians and Surgeons.—A permanent plan for the organization of a society with the examining work of insurance companies and accident claim departments in Boston, met at the Hotel Somerset on the evening of March 22nd, and after discussion of plans for forming a permanent organization appointed a committee to draw up a constitution and by laws, to be reported at the next meeting on April 8, at the Boston City Club, when the election of officers will take place. The committee appointed included Dr. Frank E. Allard, chairman; Dr. Edward M. Greene, Dr. Francis D. Donoghue, Dr. H. A. Hartung, Dr. Charles T. Cutting, and Dr. Charles O. Kepler.

BALTIMORE AND THE SOUTH

Bequests to Washington, D. C., Institutions.—By the will of the late William Jones Rhees the following bequests are made: To the Garfield Memorial Hospital, \$1,000; to the National Children's Hospital, \$500; to the Children's Hospital, \$500; to the National Hospital for the Deaf, \$500; to the National Hospital for the Blind, \$500; to the National Hospital for the Paralyzed, \$500; to the National Hospital for the Insane, \$500; to the National Hospital for the Leprosy, \$500; to the National Hospital for the Skin Diseases, \$500; to the National Hospital for the Syphilis, \$500; to the National Hospital for the Tuberculosis, \$500; to the National Hospital for the Venereal Diseases, \$500; to the National Hospital for the Wounds, \$500; to the National Hospital for the Burns, \$500; to the National Hospital for the Frostbite, \$500; to the National Hospital for the Sunburn, \$500; to the National Hospital for the Heatstroke, \$500; to the National Hospital for the Cold, \$500; to the National Hospital for the Flu, \$500; to the National Hospital for the Measles, \$500; to the National Hospital for the Mumps, \$500; to the National Hospital for the Scarlatina, \$500; to the National Hospital for the Typhoid, \$500; to the National Hospital for the Typhus, \$500; to the National Hospital for the Cholera, \$500; to the National Hospital for the Dysentery, \$500; to the National Hospital for the Diarrhea, \$500; to the National Hospital for the Hemorrhage, \$500; to the National Hospital for the Hemiplegia, \$500; to the National Hospital for the Paralysis, \$500; to the National Hospital for the Epilepsy, \$500; to the National Hospital for the Hysteria, \$500; to the National Hospital for the Mania, \$500; to the National Hospital for the Melancholia, \$500; to the National Hospital for the Dementia, \$500; to the National Hospital for the Insanity, \$500; to the National Hospital for the Idiocy, \$500; to the National Hospital for the Imbecility, \$500; to the National Hospital for the Feeble-mindedness, \$500; to the National Hospital for the Epilepsy, \$500; to the National Hospital for the Hysteria, \$500; to the National Hospital for the Mania, \$500; to the National Hospital for the Melancholia, \$500; to the National Hospital for the Dementia, \$500; to the National Hospital for the Insanity, \$500; to the National Hospital for the Idiocy, \$500; to the National Hospital for the Imbecility, \$500; to the National Hospital for the Feeble-mindedness, \$500.

The Mortality of Baltimore.—The Department for the week ending March 23rd showed a total of 244 deaths, as compared with 231 the corresponding week of last year, 231 in 1905, and 236 in 1904. The annual death rate in 1,000 of population was: Whole, 22.00; white, 19.67; colored, 35.24. The principal causes of death were:

Heart disease	10
Stroke	10
Wounds	10
Diabetes	10
Consumption	10
Cancer	10
Apoplexy	10
Smallpox	10
Scarlatina	10
Typhoid	10
Typhus	10
Cholera	10
Dysentery	10
Diarrhea	10
Hemorrhage	10
Hemiplegia	10
Paralysis	10
Epilepsy	10
Hysteria	10
Mania	10
Melancholia	10
Dementia	10
Insanity	10
Idiocy	10
Imbecility	10
Feeble-mindedness	10

The nativity of the decedents was: United States, whites, 146; foreign, 35; colored, 57; unknown, 6. Thir-

quests were held. The following number of cases of infectious diseases were reported, as compared with the corresponding week of last year:

1906. 1907.		1906. 1907.	
Smallpox	3	Measles	8
Diphtheria	24	Mumps	43
Pseudomembranous croup	1	Whooping cough	8
Scarlet fever	8	Chickenpox	5
Typhoid fever	9	Consumption	9
	14		27

CHICAGO AND THE WEST.

Statement of Mortality of Chicago for the Week Ending March 23, 1907, compared with the preceding week and with the corresponding week of 1906. Death rates computed on United States Census Bureau's midyear populations—2,107,620 for 1907, 2,049,185 for 1906:

	Mar. 23, 1907.	Mar. 16, 1907.	Mar. 24, 1906.
Total deaths, all causes	700	681	555
Per 1,000 with pop. of 1,000,000	17.29	16.92	14.10
Males			
All	398	391	312
Females			
All	301	290	243
Under 1 year of age			
Males	151	140	137
Females	67	65	36
Between 1 and 5 years of age			
Males	36	34	35
Females	310	288	236
Between 5 and 20 years of age			
Males	135	157	111
Females			
Over 20 years of age			
Males	14	21	18
Females	55	40	38
Bright's disease			
Males	20	23	26
Females	104	77	62
Consumption			
Males	27	34	21
Females	12	9	15
Diphtheria			
Males	9	6	9
Females	57	52	39
Heart diseases			
Males	3	9	3
Females	24	26	30
Intestinal diseases, acute			
Males	5	3	1
Females	34	19	24
Nervous diseases (ex. convulsions)			
Males	137	158	99
Females	24	18	9
Scarlet fever			
Males	1	0	0
Females	8	11	2
Smallpox			
Males	6	2	4
Females	25	36	26
Violence (other than suicide)			
Males	7	7	2
Females	128	133	127

GENERAL.

The Outing Club of the American Medical Association expects to make a tour of the various seaside resorts in New Jersey, after the meeting of the association at Atlantic City, in June.

The American Antituberculosis League.—The next meeting of this league will be held at Atlantic City, on June 1, 2, 3, and 4, 1907. The league was organized for the prevention of consumption; to educate the people that this is a preventable disease; to secure State aid for poor consumptives; and to establish hospitals in every State in the Union. Dr. George Brown, of Atlanta, Ga., is president, and Dr. Edward Guion, of Atlantic City, is secretary of the organization.

Meetings of State Medical Societies for the Month of April, 1907:

Tennessee State Medical Association, annual meeting at Nashville, April 9th.

Mississippi State Medical Association, annual meeting at Gulfport, April 10th.

South Carolina Medical Association, annual meeting at Bennettsville, April 10th.

Medical Association of the State of Alabama, annual meeting at Mobile, April 16th.

Florida Medical Association, annual meeting at Tampa, April 17th.

Medical Association of Georgia, annual meeting at Savannah, April 17th.

Medical and Chirurgical Faculty of Maryland, annual meeting at Baltimore, April 23rd-25th.

A Meeting of Women Physicians, under the auspices of *The International Guild for the Benefit of the Insane*, was held at Christ Child Settlement House, 115 E. Street, N. W., Washington, D. C., on Saturday, March 30, 1907. The following programme was arranged for the meeting: Border Line States of Insanity, by Dr. Alberta S. Guibord, Washington, D. C. (formerly physician at State Hospital for the Insane, Washington, D. C.); discussion, by Dr. Mary

O'Malley (Government Hospital for Insane, Washington, D. C.); Manual Therapy, Swedish Methods Defined, by Dr. Gudrun Holm, New York City; general discussion; Eye Strain in Relation to Mental Diseases, by Dr. Julia Harton (Medical Staff Woman's Hospital, Philadelphia), and Dr. Isabel Haslup Lamb, Washington, D. C.; Practice of Medicine Among the Navajo Indians of New Mexico, by Dr. E. Corey Starr, Washington, D. C.

Report of the Department of Health of the Isthmian Canal Commission for the Month of January, 1907.—During the month of January, 1907, there were a few cases of smallpox on the Isthmus, which were imported, and no other quarantinable disease. The total population of the Canal Zone was 89,174. There were 261 deaths, corresponding to an annual death rate of 35.12 in a thousand population. Nine white employees died, one from drowning, one from chronic nephritis, one from intestinal amoebiasis, three from pneumonia, one from intestinal obstruction, and two from typhoid fever. None of the American women and children died. There were eight deaths from typhoid fever, twenty-eight from malarial fever, seven from zystivoautumnal fever, three from malarial cachexia, twelve from dysentery, three from intestinal amoebiasis, five from beriberi, one from tuberculosis of the larynx; twenty-three from tuberculosis of the lungs, and one from general tuberculosis.

United States Civil Service Examination for the Position of Medical Interne (Male), at the Government Hospital for the Insane.—The United States Civil Service Commission announces an examination on June 13-14, 1907, to secure eligibles from which to make certification to fill at least five vacancies in the position of medical interne (male), at \$600 per annum each, with maintenance, in the Government Hospital for the Insane, Washington, D. C., and vacancies as they may occur in any branch of the service requiring similar qualifications. The department states that it reserves the right to continue or terminate appointment at the end of one year, or to promote the appointee at the expiration of that length of service. The examination will consist of the subjects mentioned below, weighted as indicated: Subjects: (1) Letter writing (the subject matter on a topic relative to the practice of medicine), weight, 5; (2) Anatomy and physiology (general questions on anatomy and physiology, and histological or minute anatomy), weight, 15; (3) Chemistry, materia medica, and therapeutics (elementary questions in inorganic and organic chemistry; the physiological action and therapeutical uses and doses of drugs), weight, 10; (4) Surgery and surgical pathology (general surgery, surgical diagnosis; the pathology of surgical diseases), weight, 20; (5) General pathology and practice (the symptomatology, aetiology, diagnosis, pathology, and treatment of disease), weight, 25; (6) Bacteriology and hygiene (bacteriological methods, especially those relating to diagnosis; the application of hygienic methods to prophylaxis and treatment), weight, 10; (7) Obstetrics and gynecology (the general practice of obstetrics; diseases of women, their pathology, diagnosis, symptoms, and treatment, medical and surgical), weight, 15; total weight, 100. Two days will be required for this examination. Men only will be admitted. Age limit, 20 years or over on the date of the examination. This examination is open to all citizens of the United States who comply with the requirements. Applicants must indicate, in answer to question 15 of the application form, that they are graduates of reputable medical colleges. *This announcement contains all information which is communicated to applicants regarding the scope of the examination, the vacancy or vacancies to be filled, and the qualifications required.* Applicants should at once apply to the United States Civil Service Commission, Washington, D. C., for application Form 1312, and for information concerning places at which the examination will be held. No application will be accepted unless properly executed and filed with the commission at Washington. In applying for this examination the exact title, Medical Interne, Government Hospital for the Insane, as given at the head of this announcement, should be used in the application. As examination papers are shipped direct from the commission to the places of examination, it is necessary that applications be received in ample time to arrange for the examination desired at the place indicated by the applicant. The commission will therefore arrange to examine any applicant whose application is received in time to permit the shipment of the necessary papers.

Pith of Current Literature

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

Volume 4, No. 15

1. Changes in Lymphoid Tissue in Cases of the Infectious Diseases. By W. T. COWLEY JONES.
2. Hemianopsia Due to Lesions of the Optic Chiasm: From an Otolological Viewpoint. By CHEVALIER JACKSON.
3. The Medical Student's Orientation. By J. H. ALLEN.
4. Spina Bifida. By H. A. GREENBERG.
5. Conjugate Deviation of the Eyes and Head and Disorders of the Associated Ocular Movements. By WEISENBURG.
6. Arseniureted Hydrogen Poisoning. By NOBLE WILEY JONES.

2. Meningism as Distinguished from Meningitis.—

Greenberg states that without loss of the meninges there may be a syndrome comprising many of the diagnostic symptoms of meningitis. Before recovery, such cases are often indistinguishable from meningitis. The term meningism is, on the whole, the least objectionable that has yet been applied to this syndrome. According to ætiology, these cases may be classified as either reflex, toxæmic, or irritative. In all three classes there are circulatory changes, and in many cases direct action on the cortical and subcortical cells. In the toxæmic cases the nosotoxines circulating in the blood act as toxic doses of cerebral poisonous drugs do. When any of these irritative and toxæmic forms occur accidentally in a case with middle ear disease, correct diagnosis becomes of the utmost importance. Any meningitic symptom may occur, but the erethistic are much more frequent than the depressive. The full development of pressure symptoms or paralysis will usually exclude meningism. The readiness with which the symptoms of meningism may be quieted by small doses of morphine is a valuable diagnostic point. These cases of meningism are distinct from Quincke's "serous meningitis"; in that there is no serous trouble. In the course of middle ear disease, the symptoms of meningism often demand radical operation for cure, even if the mastoid be yet uninvolved.

4. **Spina Bifida.**—Greenberg pleads for a more extended use of operative means in the treatment of spina bifida. He had a case under treatment from which he concludes that previous to the operation the girl was growing progressively worse. Improvement in her condition set in within a few days after the operation and has continued to the present. At present, a little over two months since the operation, she is almost entirely well. The deductions to be made are: 1. Continuous pressure on the terminal portion of the spinal cord will entirely suspend the function of such portion, giving rise to a serious train of symptoms. 2. Such pressure, though extending over a period of years (sixteen years in his case), need not necessarily impair the nerve tissue of the cord beyond recovery. 3. A speedy restoration of function and alleviation of symptoms may follow the removal of the pressure.

5. **Conjugate Deviation of the Eyes and Head and Disorders of the Associated Ocular Movements.**—Weisenburg says that conjugate deviation of the eyes and of the head is dependent on a most complex mechanism. In the human being there is but one oculomotor centre, or at least one active functioning centre, situated in the posterior portion of the second and third frontal convolutions, adjacent to the precentral convolutions. A separate centre exists for the movements of the head, probably in the lower anterior portion of the precentral convolution. There is probably in man a distinct centre for the combined movements of the eyes and head, situated in the area between the head and the eye centres. It is probable that the cortical

oculomotor, head, and combined head and eye centres are subserved for downward movements. The oculomotor and the motor head centres are in connection by means of association fibres with the cortical centres for the special senses, in the temporal, occipital, uncinate, and other lobes. Any lesion in the motor centres for the eyes and head or in the related special sense centres or in the association fibres connecting the former with the latter will cause an impairment in voluntary deviation of the eyes or of the head, or of both, this depending on the nature and location of the lesion. Lesions in the angular gyrus cause conjugate deviation because of involvement of visual and auditory fibres which lie underneath this area. Hemianopsia may be caused by the shock or transient effects of the hæmorrhage, this loss of half vision being only a temporary symptom and similar in nature to the temporary hemianæsthesias sometimes observed in capsular lesions. The occurrence of conjugate deviation of the eyes or of the head, or of both, is of no value as a focalizing symptom, because it may be the result of a lesion in any portion of the cerebrum. It may be of value, however, in conjunction with other localizing symptoms. Conjugate deviation of the eyes and head probably occurs in every case of large apoplectic lesions, but in some instances it is a partial or minor form and of transient duration. Paralysis or impairment of associated ocular movement may occur as a result of a hemianopsia. This, however, is only temporary.

6. **Arseniureted Hydrogen Poisoning.**—Jones gives the history of five cases of poisoning by arseniureted hydrogen, together with a report of fifty-five cases which he has found in the literature. The arseniureted hydrogen is used by the MacArthur-Forest cyanid process in the working of low grade gold ores. As to the pathology of his cases, he remarks that it differs in many ways from that of other arsenical salt poisonings. The blood and chief excretory organs receive the brunt of the effect of the gas, the blood directly, the kidneys both directly and indirectly. The skin is discolored from the deposition of pigment in it. The degree of color depends on the degree of transformation of the iron portion of this pigment. The lungs are usually negative; œdema of the dependent portions has been noted. In patients who have lived some days before death has occurred a moderate degree of fatty change of the myocardium has been described, but never are there the high grade fatty changes of the parenchymatous organs that are seen in phosphorus poisoning, for instance. There is a notable absence of fatty degeneration. The kidneys are usually somewhat enlarged, dark colored, very bloody, and the seat of a high grade hæmorrhagic nephritis. The tubules are filled with detritic casts, the bloodvessels with broken down red blood cells. The glomeruli are least involved. Round cell infiltration is not much seen, for the reason that the process is so intense and so little time elapses that reactive measures have not time to take place. The liver is large, dark colored, and bloody; the cells contain much pigment and but little fat. The biliary radicles contain pigment. The gallbladder is distended in all reported cases with a thick, tarry bile, and the bile ducts are open. The spleen shows acute tumor, the stomach and intestines have nothing characteristic, except the large amount of bile in the contents of the latter. All serous membranes are more or less stained. Traces of arsenic have been obtained from the urine, kidney, liver, bile, and blood by different investigators. Iron containing pigment is rather generally found throughout the body as shown by cyanid preparations. Aside from measures taken to prevent the escape or formation of arseniureted hydrogen gas in laboratories or in the arts, the treatment in such cases is purely symptomatic. Three indications are present, along the

the patient, and is accomplished for the patient. From above, but not below, the incision. Oxygen should be supplied by the nostrils, and kept up continuously. A catheter should be inserted into the bladder to prevent the blocking of the uriniferous tubules by disintegrated blood cells and tubule epithelium. Toward this end all bland diuretics can be used, especially large quantities of water and milk, and often repeat saline enemas and warm baths. General supportive treatment, as in all prostration cases, is, of course, always needed. The use of digitalis need not be avoided for fear of a fatty myocarditis, because the latter, to any extent, does not exist. As a rule, the patient with suppressed urine will die. Active diuresis is a very favorable sign, and the majority of patients with polyuria will recover. The long standing anemia is much benefited by iron.

MEDICAL RECORD.

March 31, 1907.

1. A New Method of Operation for Epispadias.

By CARL BECK.

2. Pneumonia, with Especial Reference to the Use of Fresh Air and a Saline Solution, and the Abuse of Alcohol, Opium, and Other Drugs in Its Treatment.

By STEPHEN SMITH BURT.

3. On Localization in Multiple Intestinal Obstruction, with Illustrative Case.

By G. A. FRIEDMAN.

4. Buttermilk as an Infant Food.

By AUGUST STRAUCH.

5. The Relationship of Clinical Symptoms to Microscopical Findings in Cases of Carcinoma of the Uterus.

By C. O. THIENHAUS.

Prescriptions for Medical Journals. By A. J. MARTIN.

1. A New Method of Operation for Epispadias.—Beck describes his method which he used on a patient, four years of age, as follows: To secure sufficient material at the upper portion of the improvised tube, the skin incision was carried far up over the projecting abdominal fold. The interior of the funnel being lined with a thin mucous membrane makes it especially useful for the purpose. To increase the size of the funnel, however, a small portion of skin was left at its upper portion like a brim. Further dissection was done cautiously by introducing the index finger into the orifice, pulling the wall over the finger as if trying to put on a glove, and then gradually freeing it from the surrounding tissues. The finger served as a guide during dissection, and at the same time drawing the funnel wall over it caused enough pressure to prevent hæmorrhage. Although the wall was naturally thin, it appeared to be firm, and, by holding the cutting edge of the scalpel more toward the outer tissues than to the wall, injury to any part of the funnel wall was avoided. As soon as the upper portion of the funnel showed two inches in length, further dissection was stopped. Then a transversed incision was made behind the glans which combined the two longitudinal incisions made alongside the urethral gutter at the beginning of the operation. Thus a flap containing the urethral gutter was created, which remained in close connection with the funnel, and practically formed an integral part of it after being freed as far as the interior of the original orifice. There was, in fact, now a new movable hollow organ appearing like a hernial sac, at the bottom of which the neck of the bladder could be made out. To transform this wide tube into a urethral canal its walls were folded into several portions, pleating it like a shirt frill. By perforating the glans with a bistouri an opening was secured which was wide enough to permit of pulling the upper portion of the sac through it, so that its ruffled margins could now be fastened to the tip of the glans after the principle of the purse string suture. They were supported by four silk sutures, one being applied anteriorly, another posteriorly, and another on each side. In order to elongate the penis somewhat, a small triangular skin flap was inserted between abdomen and penis, taking the material from

the redundant foreskin. The loss of blood during the operation was moderate. During the dissection of the funnel there was no hæmorrhage to speak of. Only the mobilization of the urethral groove was followed by moderate oozing which was checked by hot irrigation and temporary pressure. The penis is still short, but it appears longer than it was, and it is brought into a normal position and direction instead of leaning against the abdominal wall as before the operation.

2. Pneumonia, with Especial Reference to the Use of Fresh Air and a Saline Solution, and the Abuse of Alcohol, Opium, and Other Drugs in Its Treatment.—Burt states that first in importance, according to his view, is an unlimited supply of fresh air to everyone, with few exceptions, suffering from this affection. The exceptions comprise a certain proportion of those with a terminal or a secondary pneumonia, and possibly some instances of idiosyncrasy, at least during inclement weather, where, perchance, there is not enough vitality to endure what, as a rule, is both bearable and beneficial. The suggestion, first made by Henry, of injecting a physiological saline solution under the skin in a patient with pneumonia to restore cellular, and also renal activity, has proved invaluable. Care should be observed, it must be remembered, not to inject more than one drachm of the solution to each pound of the body weight in each quarter of an hour, lest the tissues become injured by inundation. Such a procedure without doubt would be useful from the beginning in pneumonia. The administration by the mouth, however, of alkaline salts consisting of 10 grains of sodium chloride, 5 grains of potassium bicarbonate, and 1 drachm of lemon juice, to 8 ounces of pure water every two hours, as recommended by Todd, is constituted to accomplish, and with less trouble to all concerned, everything, except in certain emergencies, claimed for hypodermoclysis.

4. Buttermilk as an Infant Food.—Strauch observes that pathogenic bacteria (of diphtheria, typhoid, tuberculosis, *Bacillus pyocyaneus*), as a rule, gradually perish spontaneously in buttermilk, both on account of the increasing acidity and the presence of the *Bacillus acidi lactici*, or they are easily destroyed by boiling for only one, two, to three minutes. We further know that the acidity of the food promotes tryptic digestion, as the acidity of the stomach contents energetically stimulates the secretion of trypsin. The digestibility of the nitrogenous substances of buttermilk lessens the work of the glands of the stomach and the intestines; the amount of energy thus spared is beneficial to the organism of the infant. As to the indications for the use of buttermilk, no absolute rules can be formed, nor is any strict classification of the various intestinal disorders unanimously accepted. Buttermilk has been used with best results in insufficiency of fat—and of albumin—digestion; in atrophía infantum, dependent on chronic enteric catarrh; in dystrophía infantum without determinable causes; in *allaitement mixte*, and in cases of sudden weaning. The high calorimetric value of the buttermilk renders it fit for feeding prematurely born babies who are not able to nurse, or if no wet nurse can be promptly secured. Many babies with intestinal diseases digest only buttermilk; others digest other foods as well. As a rule, acute intestinal disorders, and those chronic disturbances due to prolonged starch feeding, should be excluded. In case of intolerance for carbohydrates, buttermilk without flour, or even without sugar, may be tried for a short time. The objections against a buttermilk régime are due to the fact that buttermilk of standard quality, which is indispensable for success, can be obtained only with great difficulty in large cities. The common commercial so called buttermilk is indeed too often unfit for infant feeding on account of its contaminations, its unhygienic manipulation, and its unreliability with reference to acidity.

5. The Relationship of Clinical Symptoms to Microscopical Findings in Cases of Carcinoma of the Uterus.

Thienhaus remarks that, if we ask ourselves why it is that in cases of cancer of the uterus women consult the physician usually at a period when radical cure by surgical means is out of the question, we must attribute this to two causes, first, to gross ignorance on the part of the public in regard to cancer in general and especially its early symptoms, and second, to the insidious character of the disease. I have already referred to the prevalent belief that, when after the climacterium has set in, hemorrhages occur, these hemorrhages are nothing more than the reappearance of the natural menstrual flow, or a natural rejuvenation. Another erroneous belief, strongly prevalent among the public, is, that hemorrhages from the uterus without pain cannot be cancerous in origin. We all know that pain in any case of cancer of the uterus, in the absence of any inflammatory process, almost invariably indicates that the neoplasm has extended beyond the limits of the uterus itself, and that our prognosis, as far as a radical cure by operation is concerned, must be *valde dubia aut pessima*. This ignorance on the part of the public must be overcome before we can ever hope for any material improvement in our surgical results. In this matter every physician should consider it his duty to help dispel the dense ignorance of the masses by education. Great progress has already been made in this respect in Germany by such gynecologists as Winter, Dührssen, and others, who by public lectures, magazine articles, and circular letters of instruction to midwives, are meeting with great success in reducing the mortality from uterine carcinoma by education of the masses.

BRITISH MEDICAL JOURNAL.

March 16, 1907.

1. Thoracic Aneurysm. By F. OLIVER.
2. Aortic Disease. By G. RANKIN.
3. The Surgical Aspects of Hemophilia, with Especial Reference to Two Cases of Volkmann's Contracture Resulting From This Disease. By F. W. H. GROVES.
4. Cor Trilobulare Biatritum. By J. D. MANN.
5. On the Use of Calcium Salts as Cardiac Tonics in Pneumonia and Heart Disease. By Sir L. BRINTON.
6. Delayed Chloroform Poisoning. By J. C. RENTON.
7. Chronic Peritonitis Causing Elephantiasis. By J. BERNSTEIN and F. W. PRICE.
8. The Relation of Diet to Thyroid Activity. By A. D. FORDyce.
9. Note on Class Incidence of Cancer. By D. HERON.
10. Insanity, Its Causes and Increase. *London Lectures*. By G. H. SAVAGE.

1. **Thoracic Aneurysm.**—Oliver tells us that thoracic aneurysm is much more common among men than among women, those affected being commonly in the early part of the prime of life. It is during the strenuous part of a man's life that the diseased aortic wall yields before the strain. In at least one half the cases syphilis is the principal cause; add to these the ones due to muscular strain and alcohol, and you have the origin of almost all the cases. In nearly all cases there has been some preexisting disease of the walls of the aorta, of the middle coat in particular. Mediastinal tumors and malignant disease of the lungs and spine are the conditions most frequently mistaken for thoracic aneurysm. One of the earliest symptoms is pain in the chest, not always well defined or localized, usually worst at night, and aggravated by exertion. Added to this are accentuated ringing cardiac second sound and absence of albuminuria, in a healthy looking man, and the existence of thoracic aneurysm is very probable. Among the physical signs dulness on percussion and pulsation over a limited area are very important. When to these are added vascular bruits the diagnosis is complete. When the aneurysm arises just above the aortic valves, it may escape detection until it causes death by rupturing into the pericardium. Most fre-

quently thoracic aneurysm presses on the descending side of the first part of the arch of the aorta. Aneurysm on the ascending portion of the aorta, arising from the posterior wall give rise to serious symptoms, as they press upon the trachea and esophagus and interfere with respiration and deglutition. "Tracheal tugging" is most marked in such cases. Aneurysms of the descending portion of the thoracic aorta often cause erosion of the vertebrae, with excruciating pain. As regards treatment, rest in bed and quietude are essential, accompanied by a restricted diet. Cases where there is also aortic regurgitation are less amenable to treatment than the ones where that complication exists. Potassium iodide gives the best results of any drug, and it frequently relieves pain and paroxysmal dyspnea. There is nothing to be gained by administering very large doses. But there are few real cures recorded.

3. **Hæmophilia.**—Groves reports three cases of hæmophilia which exhibit some of the surgical aspects of the disease, especially the rare condition known as Volkmann's contracture. This contracture of the fingers is caused by pressure on the muscles of the forearm, depriving them of blood. Some of the fibres of the delicate and highly organized striated muscle then die or undergo rigor mortis, and are replaced by fibrous tissue or, rarely, by bone (myositis ossificans). This causes contracture, wasting, and pseudoparalysis. There is also some actual shortening of the bones which is difficult to account for; it may be due to lessening of the blood supply to the bone. From a surgical point of view the treatment of hæmophilia may be summarized as rest and pressure. When the joints become swollen they should be firmly bandaged and kept at rest until the effusion subsides. It is by neglect of this treatment that the ligaments become stretched and weakened, and the changes of osteoarthritis. For the external bleeding do nothing but keep the patient in bed. No remedies, local or general, have any effect upon the hæmorrhage, and therefore it should be left alone and attention turned solely to treating the patient's general condition. If this rule was always followed from the commencement of the bleeding, probably many lives would be saved.

5. **Calcium Salts in Pneumonia.**—Brunton calls attention to the tendency to cardiac failure in the epidemic of postinfluenzal pneumonia now prevalent in England. Such cardiac failure may, he thinks, be to some extent averted by the free use of calcium salts, which have a tonic action on the heart. The only harm it is likely to do is to increase the coagulability of the blood, but this is small, compared to the risk from cardiac failure. It is given in five to ten grain doses every four hours, simply dissolved in water. As it is very deliquescent it can only be kept in solution. It has a very disagreeable saline taste, but this can be very well covered by saccharine, one twentieth of a grain of which is sufficient for every ten grains of the calcium chloride. Encouraging results have also been obtained in cases of cardiac disease, where the ventricular wall appeared to be losing power. It is quite possible that the great benefit frequently observed from the use of milk diet in cases of heart disease may be due, in part at least, to the large quantity of calcium salts the milk contains.

6. **Delayed Chloroform Poisoning.**—Renton reports two cases of delayed chloroform poisoning in adults. The first case was that of a woman, aged twenty-six years, who was operated on for appendicitis. Vomiting persisted after the operation, and the patient died five days afterward. The second case was also that of a woman, who was aged twenty-eight years, and was operated upon for pyloric stenosis. She died four days after the operation. Post mortem the changes noted corresponded with those seen in other cases of late chloroform poisoning, which point to the action

1. *On the Heart, Liver, Kidneys, etc.*

8. **Diet and the Thyroid Gland.**—Fordyce has studied the effects of various diets on the thyroid glands of rats, and finds that the variations in structure are constant within narrow limits and corresponding to the diet employed. In milk fed rats the vesicles are large and well filled with colloid material. The gland of a rat fed on bread and milk shows the vesicles to be markedly smaller and to contain less colloid. The glands of wild rats occupy a median position.

9. **Cancer.**—Heron's studies of cancer show that the cancer rate is highest among both men and women where (1) the birth rate is lowest, (2) where the proportion of professional men in the population is highest, and (3) where most domestic servants are kept. In other words, cancer appears to be always correlated with higher social status.

LANCET.

March 17, 1907.

1. *On Infective or Toxic Conditions of the Nervous System (Goulstonian Lectures, I).*

By E. F. BUZZARD.

2. *The Renal Function in Its Relation to Surgery (Hunterian Lectures, I).*

By J. W. T. WALKER.

3. *The Diagnosis and Localization of Cerebral Tumors (Lectisomian Lectures, III).*

By C. E. BEEVOR.

4. *Insanity, with Special Reference to Prognosis (Morrison Lectures, III).*

By A. R. URQUHART.

5. *The Medical Treatment of Congenital Pyloric Stenosis.*

By G. A. SUTHERLAND.

6. *On Tertiary Syphilitic Fever and the Visceral and Other Changes Connected With It.*

By F. P. WEBER.

7. *A Radiographic Survey of One Hundred and Seventy Cases Chemically Diagnosed as "Colles's Fracture."*

By R. MORTON.

8. *Note on the Use of Acetosalicic Acid in Rheumatic Endopericarditis.*

By E. C. B. IBOTSON.

9. *The Role of the Blood Plasma in Disease.*

By H. CAMPBELL.

1. **Acute Infection of the Nervous System**—Buzzard, in the first of his Goulstonian lectures, deals with certain acute infective diseases of the nervous system, the leading characteristic of which is acute paralysis. A rapidly developed motor paralysis, involving the whole, or nearly the whole, of the voluntary musculature, is the important and conspicuous feature. Cases answering to this description may be classified under the following titles: (1) Acute anterior poliomyelitis; (2) Landry's paralysis; (3) acute toxic polyneuritis; and (4) acute ascending or diffuse or disseminated myelitis. As regards the acute toxic changes in the cells, the histological appearances are not different from those produced by other influences, and no poison can be said to evoke an anatomical cell change which is different from that evoked by other poisons. There are two definite channels or paths by which bacteria or their toxins may reach the central nervous system and be disseminated within it. These are the blood and the lymph. The blood supply of the central nervous system is so arranged that the richest vascularization is associated with the presence of the most active elements or ganglion cells, whereas the more passive conducting paths are content with a somewhat poorer portion. The gray matter of the cord with its rich capillary network and especially that of the cervical and lumbosacral enlargements, is more exposed to circulating toxins than the white matter. Emboli in the cord are rare, owing to the tortuosity and small calibre of the arteries. When embolic infarcts do occur in the cord they are found both white and gray matter, perhaps with a little preference for the latter, owing to the larger calibre of the anterior spinal artery. As regards the lymphatics the writer makes the following deductions: 1. That organic and inorganic substances when present in the lymph spaces of nerves

tend to be carried centralwards towards the spinal cord and meninges, and especially through the posterior spinal roots. 2. Entry into the spinal cord is made chiefly along the various septa within the lymph channels of the radial vessels and along the anterior, but more particularly the posterior roots. 3. That the same substances within the spinal cord and its membrane appear to travel upwards mainly between the meninges and along the central canal. 4. The changes within the cord resulting from its bacterial or toxic infection through these lymph channels are somewhat patchy and irregular, affecting the gray and white matter alike, with a special incidence on the posterior columns. 6. The morbid histological processes consist of toxic changes in ganglion cells, blood extravasations, small round cell infiltration of the tissues and perivascular sheaths, and parenchymatous degeneration of the nerve strands.

5. **Congenital Pyloric Stenosis.**—Sutherland's paper deals with the medical treatment of congenital pyloric stenosis by means of dieting and gastric lavage. The aim of such treatment is to remove any source of irritation in the stomach which may maintain pyloric spasm, and to keep the stomach free from any irritating food material, digested or undigested. It is not to be supposed that even in marked cases the pylorus never relaxes. The gravity of the affection lies in the fact that it does not do so enough to allow of the passage of food in sufficient quantity for the nutrition of the infant. The aim of the treatment is to restore the function of relaxation of the pylorus which has been in abeyance, owing to the more powerful action of the constrictor muscular fibres. Although the stomach is dilated and large, yet small feedings are called for in order to secure complete digestion. Two or three ounces are sufficient for a meal, and in bad cases one ounce may be advisable. The number of meals must be increased; a month old infant must be fed every two hours day and night, and in bad cases where only one ounce is given, every hour by day. Hunger usually awakens the child with great regularity. The proteids and fats are the parts of the food which are most difficult to digest. If good breast milk is available it is the best food, but the fats should not be more than three per cent. Ordinary modified cow's milk does not work well, as a rule, peptonized cow's milk without added cream being much better. Malt extract, raw meat juice, and grape juice may be given in addition. The stomach should be washed out once a day for a prolonged period, and in bad cases it may be required twice a day. It is a simple process in infants and leads to no discomfort. It should be done when the stomach is ordinarily empty—i. e., two hours after a meal. The washing should show a small amount of soft flocculent material, tending to get less in amount with each washing. If much material is washed out, or undigested curds, it indicates that the food is not properly digested and will maintain the pyloric spasm. The signs of progress are as follows: 1. The vomiting ceases. 2. The bowels act naturally. 3. The stomach peristalsis becomes less marked and gradually passes off. 4. The discomfort, pain, apathy, and whining of the infant are removed. 5. The nutrition is improved. A common complication is diarrhoea, due to the bowels having been out of use for some time. The best treatment is to reduce the amount of food by one half. The use of antispasmodic drugs, such as opium and the bromides, has not proved of the slightest value. In marasmic infants whose tissues are dried up, the use of saline solutions, both subcutaneously and by rectum, has seemed beneficial.

LA PRESSE MEDICALE.

March 6, 1907.

1. *The Spleen in Organic Heart Disease.*

By ERNEST BARIE.

2. Social Hygiene: The Work of Bacteria in the Care of Children. By V. BUE.
3. A Modification of the Hypodermatic Syringe. By P. DELOSSES.

1. **The Spleen in Organic Heart Disease.**—Barie has measured and examined the spleen in 216 cases of heart disease, in seventy-nine after autopsy, in one hundred and eighty-seven by percussion and phonoscopy. He found the spleen larger than normal in twenty-three cases, smaller than normal in four, and the seat of infarction in thirteen cases out of the seventy-nine autopsies.

March 11, 1907.

1. Souvenirs of the Battle of Mukden: Penetrating Wounds of the Skull and Brain. By J. J. MATIGNON.
2. Clinical Exploration of the Colon. By J. OKINCZYC.
3. Rapid Diagnosis of Tuberculous Suppuration. By R. ROMME.

1. **Penetrating Wounds of the Skull and Brain.**—Matignon presents some very interesting statistics and photographs of very serious penetrating gunshot wounds of the head inflicted at the battle of Mukden. The mortality from such wounds made by bullets of small calibre he gives as 32.34 per cent., that from similar wounds inflicted by artillery shells as 55 per cent., both remarkably low from the point of view of generally preconceived ideas in regard to the deadly nature of penetrating wounds of the brain.

2. **Clinical Exploration of the Colon.**—Okinczyc continues his former article on this subject with what may be ascertained by the introduction of a rectal bougie and by radiography.

March 13, 1907.

1. The Ultramicroscope and Ultramicroscopical Objects. By A. COHEN and H. MOUTON.
2. Facial Neuralgia and Radiotherapy. By G. HARET.
3. The Intestine May Be Dull. By SAVARIAUD.

2. **Facial Neuralgia and Radiotherapy.**—Haret says, with regard to the treatment of epileptiform neuralgia, that radiology holds the first rank among the medications which may be employed, that it may bring about very remarkable cures and ones which last longer than those secured by other methods of treatment. When internal medication has failed radiotherapy should be tried before recourse is had to surgical intervention, as it is always inoffensive if methodically applied in the correct dosage. Radiotherapy has the greater chances of success in cases in which the pains of the epileptiform neuralgia radiate from one or more clearly localized points. Very frequently the first radiotherapeutic treatment causes a temporary exacerbation of the pain, but in such cases the treatment should not be abandoned, because such an exacerbation is often the prelude to a definitive amelioration.

3. **The Intestine May Be Dull.**—Savariaud reports three cases in which there was dullness on percussion over the intestine instead of tympanites, as would naturally have been expected. The first case was one of contusion of the abdomen in which there was dullness over the iliac region due to a spasm of the intestine. The second case was one of intestinal occlusion associated with an encysted ascites. The third was a case of intestinal occlusion with dullness over the abdomen due to the fact that the loops of intestine were filled with liquid, and contained no gas.

LA SEMAINE MEDICALE

March 6, 1907.

Decapsulation of the Kidney in the Treatment of Eclampsia.

By Professor R. DE BOVIS.

Decapsulation of the Kidney in the Treatment of Eclampsia.—De Bovis discusses the literature on this subject, and is inclined to doubt the efficacy of this procedure in this disease.

BERLINER KLINISCHE WOCHENSCHRIFT

February 28, 1907.

1. Concerning the Magnet Operation in Ophthalmology. By J. HIRSCHBERG.
2. The Statistics of Intestinal Tuberculosis. By J. ORTH.
3. Concerning the Registration of the Contractions of the Left Auricle in a Case of Adams-Stokes Disease. By G. JOACHIM.
4. New Method for the Determination of the Sugar in the Urine. By J. HARET.
5. Some Considerations Regarding Leukemia and "Hämoklonien." By M. MÜHLMANN.
6. Hypermetropia and Its Determination Without Skiascopy. By LYRITZAS.
7. Some Remarks in Regards to the Importance of Woman's Milk in the First Days of Life. By SALGE.

1. **The Magnet Operation.**—Hirschberg successfully removed a piece of iron from within the eye twenty-seven years ago, and has since then performed the operation 347 times. The most interesting part of his statistics is that of the eight years between 1896 and 1903, during which he performed the operation sixty-four times and secured good and permanent vision of the injured eye in thirty-six cases, or 56 per cent. In twenty-three patients of these thirty-six cases the vision secured was very good, from one half to one. In nine the fragment of iron was removed from the vitreous, in twenty-seven from the retina, twenty-two were fresh cases, fourteen were old. In six of the sixty-four cases, nine per cent., the form of the injured eye was preserved, but the sight was lost. In twenty-two of the sixty-four cases, 34.5 per cent., the injured eye had to be enucleated. In the great majority of these twenty-two cases the fragment was very large, or the eye was lost from cyclitis or sepsis. In four of the sixty-four cases the magnet failed to remove the foreign body. He reports two interesting cases operated on in 1906 and 1907.

3. **Registration of the Contractions of the Left Auricle in a Case of Adams-Stokes Disease.**—Joachim describes a case of this disease met with in a man, forty-six years of age, and presents the coincident registration of the arterial and venous pulse, which show the venous waves to have been much more frequent than the arterial. Both pulses were almost perfectly rhythmic, but absolutely independent of each other.

6. **Hypermetropia and Its Determination Without Skiascopy.**—Lyritzas describes his method of examination of patients with hypermetropia, and does not consider the use of skiascopy essential for its exact determination.

March 4, 1907.

1. Chemotherapeutical Studies of Trypanosomata. By P. EHRLICH.
2. The Technics of Bronchoscopy. By G. GOTTSSTEIN.
3. The Cause of the Proliferation of Cancer and Sarcoma in Man. By M. SCHÜLLER.
4. The Assumed Ætiological Signification of Sarcocactic Acid in Eclampsia of Pregnancy. By J. DONATH.
5. Erroneous Interpretation of a Physical Condition of the Chest in Children. By H. NEUMANN.
6. A Case of Quinine Amaurosis. By W. SEELIGSOHN.
7. The Physical Treatment of Tabes Dorsalis. By F. LUTZAS and E. KINDER.

2. **The Technics of Bronchoscopy.**—Gottstein describes the bronchoscope and the manner of its introduction with care not to injure the epiglottis or the vocal cords. After the tube has been introduced the illumination may be obtained either by means of the head mirror or by means of an electroscope.

3. **The Cause of the Proliferation of Cancer and Sarcoma in Man.**—Schüller asserts that he has discovered parasites upon the action of which depend the development and proliferation of carcinoma and of sarcoma in man.

4. **The Assumed Ætiological Significance of Sarcocactic Acid in Eclampsia of Pregnancy.**—Donath considers this acid to be harmless, to have no pathogenic

to be a reflex phenomenon of pregnancy, but to be a secondary product of the muscular spasm.

5. Erroneous Interpretation of a Physical Condition of the Chest in Children. Neumann describes a condition of dullness and bronchial breathing at the apex of the right lung, very rarely of the left, with prolonged expiration, but without râles, which has often led to a diagnosis of pulmonary trouble. He ascribes these physical signs rather to an enlargement of the bronchial lymphatic glands, particularly those which extend from the hilus of the lung to the bifurcation of the trachea, and when there is also mediastinal dullness, to swollen mediastinal lymphatic glands. The condition of healed tuberculous processes in the lungs which may produce the physical signs of dullness and bronchial breathing without râles may be said not to exist in children. The swelling of the bronchial glands is usually tuberculous in its nature.

6. Quinine Amaurosis.—Seeligsohn reports a case in which a woman, thirty-six years old, took six grammes (92.12 grains) of quinine within three days and then suddenly became deaf and blind. Hearing returned within twenty-four hours, but the first trace of light perception returned ten days later and it was about two months before her vision completely returned. The fundus exhibited a picture similar to that seen in embolism of the central artery of the retina followed by that of atrophy of the optic nerve. The visual field, when it could first be taken, was concentrically contracted, then gradually enlarged until in the course of two months it was normal for white. A marked and permanent injury of color perception remained. The reaction of the pupil to light and accommodation which was at first completely lost gradually became normal, but somewhat decreased again during the following year.

7. The Physical Treatment of Tabes Dorsalis.—Tobias and Kindler consider in this, their first paper in a series, the effects which may be obtained by diet, massage, and gymnastics. They say that there is no special diet for tabetics, but by attention to the diet of the individual patients certain benefit can be obtained. Massage is of benefit in the first place in the general disturbance of the organism, and in the second place to some symptoms of the disease. General gymnastic treatment is indicated only in initial cases.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT.

March 12, 1907.

1. Concerning the Stringed Electrometer and Its Use in Electrophysiology. By CREMER.
2. Concerning the Course of the Urobilinuria in Typhoid Fever. By RUEN.
3. Concerning Cysticerci in the Fourth Ventricle as the Cause of Sudden Death. By VERSE.
4. Concerning Microscopic Worms (Rhabditides) in the Stomach of a Person Suffering from Ozæna. By FRESE.
5. Cerebrospinal Meningitis and Its Treatment by Bier's Stasis and Lumbar Puncture. By VORSCHÜTZ.
6. Concerning the Treatment of Hay Fever. By AVELLIS.
7. One Hundred and Seven Labors in Half Narcosis from Scopolamine and Morphine. By BASS.
8. A New Word in regard to the Support of the Perineum. By TOFF.
9. Hæmostix, an Instrument With Which to Obtain Blood for Diagnostic Purposes. By SCHÜTTER.
10. Concerning External and Internal Anthrax. By LENGFELNER.
11. Concerning the Treatment of Cancerous Growths as an Advance in Radiotherapy. By STREBEL.
12. Concerning the Treatment of Labors with Scopolamine and Morphine. By HOCHHEISEN.
13. The Treatment of Impaction of the Presenting Shoulder with Great Distention of the Lower Segment of the Uterus. By LANGE.

1. The Stringed Electrometer.—Cremer finds the stringed electrometer more useful in electrophysiology

than the quadrant electrometer or the capillary electrometer for the investigation of the origin of the demarcation current in muscles and nerves, of the electrotonic current in nerves, and of the polarization current in animal organs. Furthermore, he says that sounds may be analyzed by it with the aid of a microphone and transformer.

3. Cysticerci in the Fourth Ventricle as the Cause of Sudden Death.—Verse reports two cases of sudden death, in each of which a cysticercus was found in the fourth ventricle on autopsy.

4. Microscopic Worms in the Stomach of a Person Suffering from Ozæna.—Frese reports the case of a girl, sixteen years old, who was under treatment for ozæna and also gastric trouble. On account of the latter her stomach was washed out and numerous microscopic worms were found in its contents. These disappeared after two months of systematic washing of the stomach. No worms were found at any time in the nasal secretion. No parasites or eggs and no Charcot's crystals were found in the stools. He gives a very full description of the parasites. They were always found mixed with the pus cells and mucus from the nose.

5. Cerebrospinal Meningitis.—Vorschütz reports five cases of this disease treated by means of Bier's stasis and lumbar puncture with only one death.

7. One Hundred and Seven Labors in Half Narcosis from Scopolamine and Morphine.—Bass states that the pains of labor may be assuaged in the great majority of cases by injections of scopolamine and morphine. In many cases the labor is protracted by this means, but usually without detriment to mother or child. He met with no injurious after effects upon the mother.

10. A Case of External and Internal Anthrax.—Lengfeller gives the history of a case in which the primary lesion was an anthrax pustule on the side of the neck with secondary anthrax lesions in the lungs and intestines.

THE MILITARY SURGEON.

April, 1907.

1. Some Phases of Army Recruiting Work. By HENRY I. RAYMOND.
2. A Consideration of Recent Views on the Medical Department in Naval Warfare. By JOHN CROPPER WISE.
3. An Economical Plan for a Consumptive Sanatorium, with Description of a New Tent House. By PAUL M. CARRINGTON and J. ROSS THOMAS.
4. A Case of Circumcision by Dog Bite. By CHARLES R. BROWNE.
5. Surgery at the First Aid Station. By HENRI NIMIER.
6. Medical Phases of the Manœuvres of the Ohio National Guard in 1906. By EDMUND CONE BRUSH.
7. A Sanitary Scuttle Butt. By MANLEY F. GATES.

4. A Case of Circumcision by Dog Bite.—Browne reports the following case: The patient, a boy of thirteen, was attacked by a large retriever which rushed upon him, knocked him down, and then seized him by the front of his trousers including the penis in the bite. The dog was at once attacked and driven away by two other boys or the injuries might have been more serious than they were. The boy walked home, a distance of over a mile, after the accident, but on arrival fainted from loss of blood. The author saw him about half an hour after the accident when he found him faint and pallid from loss of blood and shock. On removing the trousers and cleaning off the clots which obscured the nature of the wound he found that the cutaneous part of the foreskin (with the exception of a narrow band around the meatus and a triangular portion on the under surface of the penis which ran up to and included the frenum) had been torn away from about the level of the corona glandis. The mucous membrane alone, of what had been a long and tight prepuce, covered the glans. Having cleaned

go to the wound and ascertained the nature of the injury as completed the circumcision begun by the dog.

7. **A Sanitary Scuttle Butt.**—Gates observed the pernicious use of unwashed drinking cups at ship's scuttle butts and he worked out a device which was installed on the U. S. S. *Charleston*. It consists of a bubbling spring or fountain for each faucet of the ordinary ship's scuttle butt. This fountain is composed of two turned brass funnels arranged concentrically, one within the other, the outer being at the base two and three fourth inches, the inner two inches in diameter, with its base projecting one fourth inch above the outer funnel. The inner funnel connects at its apex, by a small pipe, with the scuttle butt faucet which is of an automatically closing type, preferably the "rabbit ear" pattern. The outer funnel has a shank which fits and screws into the upper arm of a one-inch cross. The lower arm of this cross is closed by a brass screw plug. This plug is perforated and tapped to receive from above the stem of the inner funnel which passes axially through the shank of the outer funnel and the upper arm and body of the cross, but leaves a clear space about it until it reaches the plug; while from below it receives the pipe leading from the faucet. The fountains are connected with each other, the last one with a drain pipe leading to a feed tank. When the faucet is opened a cone of water rises from one half to three fourth inches above the level of the inner funnel. In drinking, by slightly protruding the lips, all risk of contact of the mouth with the funnel is avoided. If carelessly used only the outer, skin covered, surfaces of the lips touch the funnel. A man about to drink instinctively opens the spring faucet before he approaches his lips to the top of the mound of water, and in this way water that might have touched the lips of a person previously drinking, as well as any dust or foreign substance that may have reached the water, is carried over and discharged with the first gush of the fountain.

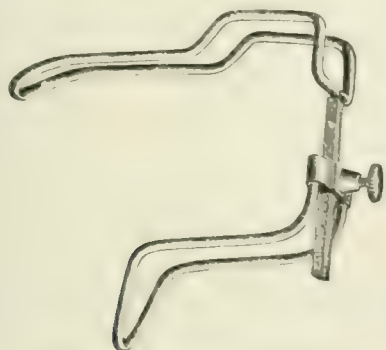
New Inventions.

A NEW SELF-RETAINING TONGUE DEPRESSOR

By ARTHUR J. HERZIG, M. D.,

Surgeon in Chief of the Eye and Ear Department, Harlem Dispensary, Visiting Ophthalmologist, Sydenham Hospital, etc.

In presenting this instrument to the profession, I hope to do away with the common obstruction and in-



Soft Retaining Tongue Depressor.

terference with the surgeon's work, of the patient's holding his own tongue. This is necessary in post-nasal and laryngeal operations. I dare say any number of surgeons have met with the experience of having the patient let go of his tongue, just when ready to do the operation, and have to start all over again. Also the common experience of having the patient

raise the dorsum of his tongue and so put up an impassable barrier to the surgeon's instrument. The use of this instrument does away with these two objectionable factors. Its use is also suggested in all electro-cauterizations of the tonsils. The instrument is readily sterilized and adjusted. The lower portion goes under the jaw and thus holds the instrument in position. Once the instrument is in position, the patient's tongue is as helpless as though he had none. To make a simple tongue depressor out of it one only has to reverse the upper portion. It is necessary to place a piece of gauze on the tongue before applying the instrument. In sensitive throats it is well to cocaineize the dorsum of the tongue and the throat to prevent gagging.

If the instrument will accomplish these purposes in other hands as well as it has in mine, my object in presenting it to the medical profession will have been fulfilled.

2040 SEVENTH AVENUE.

Proceedings of Societies.

AMERICAN SOCIETY OF SANITARY AND MORAL PROPHYLAXIS

Meeting of February 14, 1907.

The President, Dr. PRINCE A. MORROW, in the Chair.

This meeting was held under the auspices of the Committee on Treatment, of which Dr. Samuel T. Armstrong was chairman.

PROPHYLAXIS BY TREATMENT

What Can Treatment Do for the Prophylaxis of the Venereal Diseases?—Dr. HERMANN G. KLOTZ read this paper (see page 633).

How Can Prophylaxis by Treatment in the Case of the Venereal Diseases Best Be Obtained?—This was the title of a paper by Dr. JAMES PEDERSEN (see page 637).

What Are the Facilities for Treatment Open to the Venereal Patient in the Dispensaries and Hospitals of New York.—Dr. A. D. MEYBORN read this paper (see page 639).

The Importance of Systematic Education of Hospital and Dispensary Patients Afflicted With Venereal Disease.—Dr. FOLLEN CABOT discussed this phase of the subject. He stated that the education of the general public in the prevention and cure of venereal diseases was one of the most difficult and complex problems of the day. The fact, however, that the subject was being so generally agitated was a most encouraging sign, and would certainly bear fruit. The public must be taught that diseases commonly disseminated by coitus were also frequently conveyed from one person to another by chance contact, and that knowledge could easily be given in hospital and dispensary practice.

He held the firm opinion that methods for the purpose of educating the public and eradicating the erroneous beliefs now firmly rooted in the public mind that those who kept free from illicit sexual contact were in no danger of contracting venereal diseases should be largely undertaken through systematic instruction of hospital and dispensary patients. They were the ones who needed it most. As progress was made in this work, a demand would gradually arise for common sense laws to protect the people from these very prevalent diseases. In carrying on the work of education, we should bear in mind the history of prostitution, and meet the conditions we found in a practical way. In spreading a knowledge of these general facts, physicians, in their intimate relation to the patient, could probably do more than any other class of

men or women. For various reasons, however, they had not done so much as they should, especially in hospital and dispensary practice.

Eight years ago the speaker had suggested the use of printed slips to be given to patients suffering from venereal disorders. Since that time he had introduced similar slips or leaflets into his clinic at the Presbyterian Hospital, and more recently the method had been approved by the executive committee of the Postgraduate Hospital. He hoped soon to have the system introduced into his service at the City Hospital, and he believed that it had already been of much value. He regarded it as an important adjunct to the patient's treatment.

The leaflet for those suffering from gonorrhœa was as follows:

Gonorrhœa is a local contagious disease which is cured by the physician's pronouncement. To insure a cure and to prevent complications, as lumpy, stricture, swollen testicles, etc., the following rules should be observed:

1. During the first few weeks walking should be limited. When the discharge is profuse you should keep off your feet as much as possible.

2. Do not use alcohol in any form, as it always prolongs the disease. Drink milk, tea, and from six to eight glasses of water during the day.

3. Avoid all sexual relations until you have been pronounced cured by your physician, as the disease may be given to a woman even after the discharge has apparently ceased. When it is present you should avoid sexual excitement, as erections always prolong the disease.

4. Always wash the hands after handling the parts. The discharge, if carried to the eyes, will cause blindness.

5. Sleep alone, and be sure that no one uses any of your toilet articles, particularly towels and wash cloths.

6. Never lend your syringe to any one, and as soon as you are well destroy it.

7. Be sure that the bowels move every day. If they are inclined to be constipated, take a dose of Rochelle salts before breakfast.

8. Do not use mustard, pepper, horseradish, or stimulating sauces on your food.

The instructions to those suffering from syphilis were as follows:

Syphilis is a constitutional disease. It is "in the blood." Local remedies and taking medicines for a few months will not cure it.

It should be treated for three years.

The effects of this disease are far reaching, and if treatment is neglected much trouble and suffering may be caused, not only to yourself but to others.

The following rules must be observed during the first year:

1. Sexual intercourse should not be indulged in.

2. Alcohol in all forms should be avoided, as it always aggravates the disease.

3. Do not smoke or chew tobacco.

4. Sleep alone.

5. Under no circumstances should any one be allowed to use your toilet articles as towels, brushes, combs, razors, shaving brushes, etc.

6. No article that has been in your mouth should be used by others, as tooth brushes, tooth picks, pencils, pipes, cigars, cigarettes, forks, spoons, drinking cups, etc.

7. You must not kiss any one, especially children.

8. Brush your teeth night and morning and keep your mouth clean.

9. If you have bad teeth, have them attended to by a dentist, and be sure to tell him that you have syphilis, so that he can take necessary precautions and avoid the possibility of infecting others.

10. Acids in food and drink should be limited.

Dr. L. DUNCAN BULKLEY said he knew of no more practical way in which the work of this society could be carried on than by adopting the suggestion of Dr. Cabot in regard to the proper education of the masses as to the dangers that attached to the venereal diseases, and their method of propagation.

With that purpose in view, Dr. Bulkley offered the following resolution for adoption:

Resolved, that the Society of Sanitary and Moral Prophylaxis earnestly recommends that the State Board of Charities require of all dispensaries and hospitals:

1. Accurate registration of all cases of venereal disease.

2. Distribution to all venereal patients of leaflets descriptive of the means necessary to cure themselves and to prevent inoculation of others. Carried.

Dr. MEWBORN said that one very striking way of bringing this subject before the attention of the pub-

lic was to quote the statistics of the number of cases treated in our hospitals and dispensaries. From personal experience, he knew that it was a very difficult matter to obtain these data, and he suggested that, inasmuch as the dispensaries were under the control of the State Board of Charities, the society should make every effort to urge that body to take such action as would compel those institutions to furnish definite information regarding the number of venereal cases treated by them, and that such information be embodied in their annual reports.

Dr. FREDERIC BIERHOFF suggested that instead of the society giving a sample of this form of leaflet to the hospitals and dispensaries for their guidance, the leaflets themselves should be furnished to these various institutions for free distribution. He could not imagine a more practical way of spending the funds of the society. This method was now followed by the German Gesellschaft Zur Bekämpfung der Geschlechtskrankheiten, in Germany, which had been founded for the same purpose as this society.

Dr. SAMUEL T. ARMSTRONG said that the matter under discussion was a very important one, and was well worthy of the attention of the society. The New York State Board of Charities, under chapter 368, laws of 1899, was empowered to make all necessary regulations for the control of dispensaries, and if that body decided that the hospitals and dispensaries should provide their venereal patients with a leaflet of instruction such as had been suggested, those institutions would be obliged to obey. The speaker thereupon moved that a committee of three be appointed by the president to look into the question and draw up suitable leaflets for the purpose of submitting them to the State board as printed advice recommended to be given to patients affected with gonorrhœa, venereal ulcer (chancroid), and chancre, and by such means to aid in preventing the spread of venereal diseases.

Dr. L. W. BREMERMAN called attention to the frequency with which venereal patients were treated by druggists. Such cases almost daily came under the observation of the physician, and on account of the injurious effects that often followed such unskilled treatment, the speaker thought the society should take some action to invoke the law covering the illegal practice of medicine, which fully covered that point.

The PRESIDENT said the point brought up by Dr. Bremerman had already received the consideration of the Committee on Education and a subcommittee had been appointed to present the matter to the Pharmaceutical Association. In connection with the work of that subcommittee, he had had an opportunity to interview a number of prominent pharmacists on the subject, and they had promised to take the matter up, and, if possible, introduce this much needed reform themselves. In spite of the law to the effect that druggists were not allowed to prescribe in this or any other class of disease, the practice of prescribing on venereal diseases was very common. While the law on the subject was plain, it was a difficult matter to enforce it. The speaker said that during his long experience at New York Hospital, fully thirty-five per cent. of all venereal patients who came there for treatment had already been under the care of either a druggist or an advertising quack. In those cases, complications were especially frequent.

The better element among the pharmacists did not approve of this form of counter prescribing, and the question would be brought up at an early meeting of the Pharmaceutical Association, at which meeting a representative of this society would be present. The State Pharmaceutical Association of Illinois had also recognized the existence of this evil, and at their last annual meeting they had not only placed themselves on record against it, but had pledged their cordial

cooperation with and support of the work of this society.

He regretted that Dr. Bulkley's resolution made no mention of the responsibility of the Board of Health of the city in the matter of issuing literature of an educational character in connection with the prophylactic work in which this society was engaged. About two or three years ago the Health Department sent out over 400,000 circulars for the purpose of enlightening the public in regard to the dangers of contracting tuberculosis and the means by which that disease was spread. During three successive régimes of the Board of Health he had approached the proper authorities, and urged them to take some similar action in regard to the spread of venereal diseases, and, although he had always received their cordial personal endorsement, the department as such had done nothing. In certain other localities, this attitude of the health authorities, toward this subject did not prevail. The Indiana State Board of Health had issued printed slips of an exactly similar nature, setting down the rules for limiting the spread of tuberculosis, syphilis and gonorrhœa, and efforts were made to distribute them in every hospital and dispensary in the State of Indiana.

Mr. O. F. LEWIS, of the Joint Application Bureau of the Charity Organization Society and the Association for Improving the Condition of the Poor, said he wished to refer to some significant figures that had come to his attention in his investigation of the common lodging houses of the city. In the boroughs of Manhattan and Brooklyn, according to the statements of the Board of Health, there were 130 lodging houses, which give, at prices ranging from ten to twenty-five cents, between six and seven million lodgings yearly. In very few of these common lodging houses did the beds or bedding receive daily or even frequent cleaning. It was also probable that many of the beds were occupied by persons who were afflicted with venereal diseases. The work of this society might perhaps be extended to an investigation of this possible source of infection, with a view to its prevention so far as possible by the health authorities.

Dr. BOLESŁAW LAPOWSKI said the dispensaries could do more towards the prophylaxis of venereal diseases by treatment if the patients were seen at an early stage. At present, this class of patients rarely visited the dispensaries until the disease was far advanced; they did not like going to the dispensaries, and postponed doing so as long as possible. In order to overcome this objection, dispensary treatment must be made more attractive; they must be treated more considerately and interrogated singly in regard to their ailments, instead of in groups and in the hearing of other patients, as was usually done. Furthermore, the number of patients which a dispensary physician could satisfactorily treat during his hours of service should be limited.

Book Notices.

Abdominal Pain. Its Causes and Clinical Significance. By A. ERNEST MAYLARD, M. B., B. S. (Lond.), Surgeon to the Victoria Infirmary, Glasgow, etc. Second Edition (Revised). Philadelphia: P. Blakiston's Son & Co., 1906. Pp. xiv+301.

It is with some misgivings that one takes up a volume of 300 pages devoted exclusively to the consideration of a single symptom, even as important a symptom as abdominal pain. It is somewhat as if one were to write a book on anasarca or pyrexia. At first glance it seems artificial and illogical to thus dissociate a prominent symptom from the other phenomena with which it is inseparably united clinically. And, yet, as

one proceeds with the scholarly volume of Dr. Maylard this hasty criticism is completely disarmed, for there are here evidences of the mature judgment and large experience of an able operator and skilled diagnostician in the difficult field of abdominal surgery. In addition to numerous valuable original observations of his own, the work is further enriched by ample references to the literature of the best modern authorities, and there is a generous appreciation of the work of American surgeons. Among the latter who are quoted are Bryant, of New York, and Finney and Halsted, of Baltimore. From the standpoint of American neurology too great an importance, perhaps, is attached to Head's theories of areas of referred pain. There are well written chapters on the nerve supply of the abdominal parietes and viscera, and a useful practical feature for the general practitioner is to be found in the carefully prepared tables of diagnosis.

The Practice of Obstetrics. Designed for the Use of Students and Practitioners of Medicine. By J. CLIFTON EDGAR, Professor of Obstetrics and Clinical Midwifery in the Cornell University Medical College; Visiting Obstetrician to the Emergency Hospital of Bellevue Hospital, New York, etc. Third Edition, Revised. With 1,279 Illustrations, including Five Colored Plates and 38 Figures Printed in Colors. Philadelphia: P. Blakiston's Son & Co., 1907. Pp. xx-17 to 1071.

This edition of Dr. Edgar's excellent work has been somewhat reduced in bulk—by about a hundred pages—although much new matter has been added. That the book has not suffered by this condensation is a proof of the care with which it has been conducted. Much of the text has been wholly or in great part rewritten, and the following new material has been added: Appendicular inflammation complicating pregnancy, tapeworm complicating pregnancy, fibroma mollescentum gravidarum, hæmatoma of the vulva, lactation atrophy of the uterus and breasts, brachial birth paralysis, vaginal incision and drainage, and new history charts for institution work.

The book is unexcelled in mechanical appearance, and we regard it as one of the best treatises on obstetrics in any language.

A Textbook of the Practice of Medicine. For Students and Practitioners. By HOBART AMORY HARE, M. D., B. Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia, etc. Second Edition, Revised and Enlarged. Illustrated with 131 Engravings and 11 Plates in Colors and Monochrome. Philadelphia and New York: Lea Brothers & Co., 1907. Pp. 1132.

Though this new edition of Dr. Hare's great work shows evidences throughout of having been subjected to a very careful process of revision, much of the new material is quite naturally related to subjects in tropical medicine, matters which within the last few years have assumed interest for American physicians. All of Dr. Hare's writings have been welcomed by the medical profession, and the fact has been due to their excellence both in substance and in style. His *Practice* is no exception, and it will doubtless maintain its popularity for many a year to come. The mechanical appearance of the volume is very creditable to the publishers.

BOOKS, PAMPHLETS, ETC., RECEIVED

Transactions of the College of Physicians of Philadelphia. Third Series. Volume XXVIII, 1906.

Insanity Cured by a New Treatment. Details of Twenty-one Cases. By C. W. Suckling, M. D. (Lond.), Birmingham. Birmingham: Cornish Brothers, Ltd., 1907.

Les Autoplasties. Lèvres, joues, oreilles, tronc, membres. Par Ch. Nélaton, agrégé à la faculté de médecine, chirurgien

de l'École de Médecine, et de l'Université de la Faculté, chirurgien des hôpitaux. Avec 201 figures dans le texte. Paris: G. Steinhil, 1907.

Miscellany.

Rat Fleas. A very timely and useful note appears in the Special Plague number of the *Journal of Hygiene* by the Honorable N. C. Rothschild on the species of fleas found on rats, *Mus rattus* and *Mus decumanus*, in different parts of the world. This question has now become as important in preventive medicine as a knowledge of the various species of mosquito, and much more work is needed in the bionomics of fleas before it can be said that we know enough about them. *Ceratophyllus fasciatus* is the flea usually found on *M. decumanus* in Europe, and the common house mouse, *mus musculus*, occasionally harbors it, though its usual flea is *Ctenopsylla musculi*. As *Mus rattus* is a rare animal on the British Isles, Mr. Rothschild has not had opportunity to examine many, but as usual found its flea to be *C. fasciatus*. The commonest flea in warm countries is *Pulex cheopis*; it was formerly called *P. pallidus* by Taschenberg in 1880. The flea described by Tiraboschi as *P. murinus* is identical with the Indian rat flea *P. cheopis* (Rothschild). The flea described in connection with plague outbreaks in Sydney and Brisbane by Tidswell and called *P. pallidus* is now shown to be identical with *P. cheopis*; also Rothschild finds that the ship rat fleas described by Gauthier and Raybaud are really *P. cheopis*. It also appears that the flea called by Herzog *P. philippinensis* is identical with *P. cheopis*, and many specimens of this flea have also been received from South America.—Through *The Indian Medical Gazette*.

The Harveian Oration.—The Harveian Oration for the year 1906 will be memorable as a display of ripe erudition and wise insight into the evolution of the human intellect. It was delivered by Dr. William Osler, who brought to the task a mental equipment peculiarly fitted for its successful treatment. Year after year the annual panegyric upon Harvey and his great discovery has taxed the ingenuity of the keenest minds in the medical profession, and the time has long gone by when it was possible to say anything new upon the man himself. His great work, however, remains a monumental work for all ages. Inasmuch as the discovery of the circulation of the blood laid the foundation of all modern pathology, the Harveian lecturer, by a judicious application of that truism, is enabled to review the whole field of medical progress. One of the keynotes struck by the lecturer of 1906 is tersely expressed in the remark of Locke, himself a physician, to the effect that "Truth scarce ever yet carried it by vote anywhere at its first appearance." The frame of mind that three hundred years ago for a time overwhelmed Harvey with a flood of neglect, ridicule, and contempt has hitherto been the rule in the history of scientific achievement. In the present generation two striking instances may be cited in the widespread opposition which met Koch's discovery of the bacillus of tubercle and Lister's aseptic surgery. As Dr. Osler pointed out, both these truths were in the latent possession of scores of workers, but it remained in each case for the genius of a single mind to evolve the brilliant demonstration. At the same time he added the comforting reflection that the times are changing with regard to the receptivity of fresh discoveries. In support of that proposition, he contrasts the cordial welcome of the pallid spirochæta with the chilly reception of the tubercle bacillus. "We are better prepared to-day, and a great discovery like that of Shaudinn is immediately put to the test by experts in many lands, and a

verdict is given in a few months. We may have become more plastic and receptive, but I doubt it; even our generation—that great generation of the last quarter of the nineteenth century—had a practical demonstration of the slowness of the acceptance of an obvious truth in the long fight for the aseptic treatment of wounds." Receptivity of new ideas, indeed, becomes difficult to most men after attaining middle age, and it is difficult to estimate the amount of mischief done by those in authority who still cling to the erroneous views of their earlier life. The progress of truth is slow, but in the end its triumph, in spite of all difficulties, is inevitable, a statement that applies to all spheres of human activity. This slowness of general acquiescence has probably proved fatal to many a great intellect, with all the finely tempered and emotional qualities that as a rule accompany genius. In presenting a graphic picture of Harvey's life, the lecturer threw into high relief the blindness to things at their feet that may affect even the most illustrious observers. This tendency is illustrated in the case of Harvey himself by his refusal to recognize the truth of the lymphatic circulation. No less interesting is the failure of so acute a man as Fabricius, an enthusiastic teacher and investigator, to grasp the inwardness of the study on which his pupil, Harvey, was destined later to found an undying reputation. The mystery of this oversight is expressed by Dr. William Osler in the following fine passage: "How Fabricius, a man who did such work—how a teacher of such wide learning and such remarkable powers of observation, could have been so blinded as to overlook the truth which was tumbling out, so to speak, at his feet, is to us incomprehensible. But his eyes were sealed, and to him, as to his great predecessors in the chair (at Padua), clear vision was denied. The dead hand of the great Pergamite lay heavy on all thought, and Descartes had not yet changed the beginning of philosophy from wonder to doubt." There can be little doubt that many such mysteries await the evolution of medicine into the position of even a fairly exact science. Meanwhile it would be well to apply the moral of the Harveian orator, and to ask ourselves from time to time whether we may not be rejecting obvious truths and closing our ears to the gospel of unrecognized prophets in our midst.—*Medical Press and Circular*.

Chicago Not the Only Jungle.—A recent issue of the *London Medical Press* (November 21, 1906) writes that: "Ever since the Chicago sensations shook the foundations of belief in preserved food, we have contended that it is the merest hypocrisy for Englishmen to cast stones at the Americans in the matters of the inspection of food supplies and the conditions under which food is prepared. In a book published last week under the sensational title of 'The Soul Market,' the authoress, Miss Olive Malvery, has a vigorous fling at several provision concerns in this country. We are not prepared to support or to deny her assertions as regards the particular ones attacked, but we may say in general terms that the 'revelations' as to the conditions under which the hands work, the general want of ordinary cleanliness, the putrid state of meat used for preserving, and the decayed condition of fruit used for jam, are exactly what may be expected in a country that regards the production of food as a matter beneath its notice. Miss Malvery tells, for instance, of a London meat packing factory in which tongues and pork, used for pressing and making brawn, were so putrid that they fell to pieces, the smell they emitted being shocking. In times of pressure, she says, the staff was replenished by relays of tramps from the gutter and riverside, whose bodily condition was offensive beyond description. As the entire staff of meat inspectors of the Port of London, into which some

half a million tons of meat are annually imported, is but eight, what can be expected? The facts related in 'The Soul Market' call for a rigorous inquiry."

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, verified by clinical and placar, have been reported to the Surgeon General, United States Public Health and Marine Hospital Service, during the week ending March 7, 1907.

Places	Date	Cases	Deaths
Georgia—Augusta	Mar. 12-26	11	
Illinois—Chicago	Mar. 16-23	9	1
Illinois—Galesburg	Mar. 9-23	9	
Illinois—Springfield	Mar. 7-14	1	
Illinois—Danville	Mar. 13-27	3	
Illinois—Stark County	Jan. 21-Mar. 7	6	
Indiana—Culver	Feb. Mar. 13	275	
Indiana—Elkhart	Mar. 16-23	4	
Indiana—Indianapolis	Mar. 10-24	9	
Iowa—Dubuque	Mar. 18	63	
Iowa—Pella	Feb. 2-Mar. 23	63	
Iowa—Spencer	Jan. 8-Mar. 14	5	
Kansas—General	Jan. 1-31	126	
Louisiana—New Orleans	Mar. 9-23	35	2
Louisiana—Shreveport	Mar. 9-16	1	
Massachusetts—Boston	Mar. 16-23	1	
Michigan—Cantonville	Feb. 29	36	
Michigan—Detroit	Feb. 9-23	12	
Minnesota—General	Jan. 28-Mar. 11	295	
Minnesota—Winona	Jan. 9	1	
Minnesota—Winona	Mar. 16-23	2	
Mississippi—Natchez	Feb. 2-Mar. 16	12	
Missouri—St. Joseph	Mar. 16-23	15	
Missouri—St. Louis	Mar. 16-23	1	
New Jersey—Newark	Mar. 16-23	1	
New York—Binghamton	Mar. 16-23	1	
New York—New York	Mar. 16-23	3	
North Carolina—Charlotte	Mar. 9-23	1	
North Carolina—Greensboro	Mar. 9-16	1	
Ohio—Cleveland	Mar. 15-22	1	
Ohio—Hamilton	Feb. 9-16	9	
South Dakota—Sioux Falls	Mar. 9-23	2	
Texas—Galveston	Mar. 15-22	1	
Texas—Williamson County	Mar. 15-22	1	
Georgetown—Georgetown	Dec. 16-Mar. 23	75	1
Virginia—Richmond	Mar. 9-23	2	
Washington—Spokane	Mar. 2-16	26	1
Wisconsin—Milwaukee	Mar. 9-23	11	
Wisconsin—Wausau	Mar. 9-16	1	

Smallpox—United States

Philippine Islands—Manila	Feb. 2-9	1 on S.S. Bon Yek
Algeria—Algiers	Feb. 1-28	2
Brazil—Rio de Janeiro	Mar. 2-9	2
Brazil—Rio de Janeiro	Mar. 24-Mar. 31	4
Chile—Copiapo	Feb. 25	1
Chile—Iquique	Feb. 25	1
Chile—Hogaza	Jan. 26-Feb. 2	6
Colombia—Cartagena	Mar. 2	1
Ecuador—Guayaquil	Feb. 25-Mar. 2	4
Egypt—Cairo	Feb. 25-Mar. 4	1
France—Marseilles	Feb. 1-28	230
France—Paris	Feb. 23-Mar. 9	14
Germany—Bremen	Mar. 2-9	1
Great Britain—Bristol	Feb. 25-Mar. 10	5
Great Britain—Cardiff	Feb. 23-Mar. 2	1
Great Britain—Cardiff	Mar. 2-9	2
India—Bombay	Feb. 12-26	10
India—Calcutta	Feb. 9-16	41
India—Madras	Feb. 16-22	1
Italy—Naples	Mar. 9-16	2
Mexico—Tijuana	Feb. 24-Mar. 10	2
Mexico—Aguascalientes	Mar. 9-16	10
Mexico—Jalisco	Mar. 8-15	1
Mexico—Mexico	Dec. 29-16	66
Mexico—Mexico	Jan. 27-16	44
Netherlands—Rotterdam	Mar. 2-9	1
Portugal—Lisbon	Feb. 23-Mar. 9	11
Russia—Moscow	Feb. 9-Mar. 2	3
Russia—Odessa	Feb. 23-Mar. 2	7
Russia—Riga	Mar. 2-9	6
Russia—Warsaw	Feb. 2-9	3
San Salvador—San Salvador	Feb. 9-16	2
Spain—Barcelona	Feb. 18-Mar. 10	7
Spain—Cadix	Feb. 1-28	6
Spain—Savilla	Feb. 1-28	28
Spain—Valencia	Feb. 23-Mar. 2	1

Smallpox—United States

Louisiana—Mississippi River	Mar. 20	1 on S.S. Camosato, from Cuban and Mexican ports
Texas—Galveston Quarantine	Mar. 22	3 on S.S. from Cuba

Smallpox—Foreign

Brazil—Rio de Janeiro	Feb. 16	1
Brazil—Rio de Janeiro	Feb. 24-Mar. 3	1
Ecuador—Guayaquil	Feb. 23-Mar. 2	1
Mexico—Paraje Nuevo	Mar. 3-9	1
Peru—Callao	Feb. 17-19	1

Smallpox—Foreign

Philippine Islands—Manila	Feb. 2-9	10
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Smallpox—Foreign

India—Bombay	Feb. 12-26	1
India—Calcutta	Feb. 9-16	41
India—Madras	Feb. 16-22	1
India—Rangoon	Feb. 2-9	1

Smallpox—Foreign

Australia—New South Wales, Kempsey	Jan. 29	1
Australia—New South Wales, Sydney	Jan. 2-Feb. 2	12
Australia—Queensland, Brisbane	Jan. 19-Feb. 2	9
Australia—Queensland, Port Douglas	Jan. 19-Feb. 2	4
Brazil—Rio de Janeiro	Feb. 16-23	11
Brazil—Rio de Janeiro	Feb. 16-Mar. 3	1
Chile—Antofagasta	Feb. 25	1
Egypt—Assiut Province	Feb. 25	12
Egypt—Bahia Province	Feb. 23-27	10
Egypt—Beni Souef Province	Feb. 23-24	20
Egypt—Ismaia	Feb. 25-26	1
Egypt—Gharbi Province	Feb. 8-27	1
Egypt—Kerchi Province	Feb. 26	1
Egypt—Minieh Province	Feb. 27	1
Formosa—General	Jan. 1-7	165
India—General	Feb. 9-16	27,784
India—Bombay	Feb. 12-26	2,411
India—Calcutta	Feb. 9-16	8
India—Rangoon	Feb. 2-9	7
Mauritius	Jan. 24-Feb. 14	27
Peru—Chapen	Feb. 14	1
Peru—Chiclayo	Feb. 14	1
Peru—Chosica	Feb. 14	1
Peru—Lambayeque	Feb. 14	1
Peru—Lima	Feb. 14	3
Peru—Pacasmayo and San Pedro	Feb. 14	1
Peru—Trujillo	Feb. 14	1
Peru—Arequipa	Feb. 14	1
Russia—Crestadt	Mar. 5	1

Smallpox—Foreign

Public Health and Marine Hospital Service:

List of changes in the Station and District Surgeons and other commissioned officers of the United States Public Health and Marine Hospital Service, for the seven days ending March 7, 1907.

BANKS, C. E., Surgeon. Order granting leave of absence for fourteen days, from February 21, 1907, expires.

CARROLL, P. M., Surgeon. Granted leave of absence for three days, from March 23, 1907, under paragraph 180 of the Regulations.

COLLINS, G. L., Assistant Surgeon. Granted leave of absence for one day.

FOX, C., Passed Assistant Surgeon. Granted leave of absence for one month, from March 20, 1907.

GUTHRIE, M. C., Assistant Surgeon. Relieved from temporary duty at the Government Hospital for the Insane, Washington, D. C., and directed to proceed to Ellis Island, N. Y.

HOLT, E. M., Pharmacist. Relieved from duty at Wilmington, N. C., and directed to proceed to New Orleans, La., for duty at the New Orleans Quarantine Station.

JACKSON, J. M., JR., Acting Assistant Surgeon. Granted leave of absence for eleven days, from March 14, 1907.

LAGRANGE, J. V., Pharmacist. Relieved from duty at Boston, Mass., and directed to proceed to Savannah, Ga., reporting to the medical officer in command for duty and assignment to quarters.

LONG, H. D., Assistant Surgeon. Relieved from temporary duty at the Government Hospital for the Insane, Washington, D. C., and directed to rejoin his station at Ellis Island, N. Y.

LUMSDEN, L. L., Passed Assistant Surgeon. Granted leave of absence for one month, from March 18, 1907, on account of sickness, with permission to leave his station.

McKAY, M., Pharmacist. Relieved from duty at Savannah, Ga., and directed to proceed to the Gulf Quarantine Station, reporting to the medical officer in command for duty and assignment to quarters.

- PETRUS, W. J., Assistant Surgeon General. Granted leave of absence from March 27, 1907.
- PORTER, J. Y., Sanitary Inspector. Directed to proceed to Pensacola, Fla., for special temporary duty.
- SMALL, E. M., Acting Assistant Surgeon. Granted leave of absence for eight days, beginning April 15, 1907.
- STANTON, J. G., Acting Assistant Surgeon. Granted leave of absence for three days, from March 20, 1907.
- STONER, G. W., Surgeon. Granted leave of absence for four days, from March 18, 1907, under paragraph 189 of the Regulations.
- THURSTON, E. J., Pharmacist. Relieved from duty at Gulf Quarantine Station and directed to proceed to Mobile Quarantine Station, reporting to the Medical Officer in Command for duty.

Board Convened.

A board of medical officers was convened to meet at Seattle, Wash., March 28, 1907, for the purpose of making physical examination of an alien. Detail for the board: Assistant Surgeon H. G. Ebert, Chairman; Acting Assistant Surgeon F. R. Underwood, Recorder.

Army Intelligence:

Official List of Changes in the Station and Duties of Officers serving in the Medical Department of the United States Army, for the week ending March 30, 1907:

- GILCHRIST, HARRY L., Captain and Assistant Surgeon. Granted leave of absence for one month.
- JONES, PERCY L., Captain and Assistant Surgeon. Now on leave of absence from Fort Preble, Me., will, upon expiration of his leave, proceed to Jamestown Exposition Grounds, Va., and report to the commanding officer. Jamestown Encampment, for duty as assistant to the chief medical and sanitary officer.
- LYNCH, CHARLES, Major, of the General Staff. Will proceed, at the proper time, to Boston, Mass., for the purpose of delivering a lecture on April 17, 1907, to the medical officers of the Massachusetts Volunteer Militia.
- MILLER, E. W., First Lieutenant and Assistant Surgeon. Left Cuba *en route* to the United States, to avail himself of twenty days' leave of absence.
- MORRIS, SAMUEL J., First Lieutenant and Assistant Surgeon. Now on duty at Fort Washington, Md., will furnish such medical attendance at Fort Hunt, Va., as may be needed during the absence of Contract Surgeon Hart.
- ROCKHILL, E. P., Captain and Assistant Surgeon. Reported at Army General Hospital, Presidio of San Francisco, Cal., from Manila, P. I., for treatment.
- SMITH, LLOYD L., First Lieutenant and Assistant Surgeon. Ordered to proceed from West Point, N. Y., to Fort Monroe, Va., for temporary duty.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending March 30, 1907:

- BELKNAP, J. L., Assistant Surgeon. Detached from duty with the Marines in Cuba and ordered to the *Kentucky*.
- BOGAN, F. M., Passed Assistant Surgeon. Detached from duty at the Naval Recruiting Station, Baltimore, Md., and ordered to attend a course of instruction at the Naval Medical School, Washington, D. C.
- BROWN, E. M., Passed Assistant Surgeon. Detached from duty under the Department of Government and Sanitation, Canal Zone, Isthmus of Panama, and ordered to the Bureau of Medicine and Surgery, Navy Department, for special duty.
- BROWN, H. L., Assistant Surgeon. Detached from duty with Naval Recruiting Party No. 3, and ordered to attend a course of instruction at the Naval Medical School, Washington, D. C.
- BUTLER, C. ST. J., Passed Assistant Surgeon. Detached from duty at the Naval Hospital, San Juan, Porto Rico, and ordered to attend a course of instruction at the Naval Medical School, Washington, D. C.
- FARWELL, W. G., Assistant Surgeon. Detached from the *Worden* on April 15th and ordered to the *Lancaster*.
- HAMMAR, A., Pharmacist. Ordered to the Naval Hospital,

New Fort Lyon, Colo., for such duty as may be assigned.

- HALLOWAY, J. H., Passed Assistant Surgeon. Detached from duty with the Naval Recruiting Party No. 4, and ordered to the *Indiana*.
- MAY, H. A., Assistant Surgeon. Detached from the *Indiana* and ordered home to await orders.
- MUNSON, F. M., Assistant Surgeon. Detached from the Naval Proving Ground, Indian Head, Md., and ordered to attend a course of instruction in the Naval Medical School, Washington, D. C.
- RYDER, C. E., Passed Assistant Surgeon. Detached from duty at the Naval Recruiting Station, Omaha, Neb., and ordered to the *Vermont*.
- SCHALLER, W. F., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., April 3rd, and ordered to the *Brooklyn*.
- SCHWERIN, L. H., Acting Assistant Surgeon. Detached from the Naval Hospital, Norfolk, Va., and ordered to the *Worden*.
- SHOOK, F. M., Assistant Surgeon. Detached from duty at the Naval Hospital, Mare Island, Cal., and ordered to duty under the Department of Government and Sanitation, Canal Zone, Isthmus of Panama.

Births, Marriages, and Deaths.

Married.

AYER—BOYD.—In New York, on Tuesday, April 2nd, Dr. James C. Ayer and Mrs. May Hancock.

PEAKE—SIMPSON.—In Clinton, South Carolina, on Sunday, March 17th, Dr. Theodore Peake and Miss Mary Simpson.

STEINER—KILLIAN.—In Philadelphia, on Wednesday, March 24th, Dr. Samuel Steiner and Miss Rebecca Killian.

Died.

BARKSDALE.—In Hardy, Mississippi, on Saturday, March 9th, Dr. Warren F. Barksdale, aged seventy-seven years.

BARTOW.—In Three Bridges, New Jersey, on Thursday, March 28th, Dr. George Warren Bartow, aged sixty-three years.

BICKEL.—In Atlantic City, New Jersey, on Wednesday, March 27th, Dr. S. D. Bickel, of Norristown, Pa.

BONTECOU.—In Troy, N. Y., on Wednesday, March 27th, Dr. Reed Brockway Bontecou, aged eighty-two years.

BROWN.—In Lynn, Massachusetts, on Thursday, March 21st, Dr. Charles R. Brown, aged seventy years.

CLARK.—In Philadelphia, on Thursday, March 28th, Dr. Samuel Clark.

CRAWFORD.—In Davenport, Illinois, on Sunday, March 24th, Dr. J. P. Crawford, aged fifty-one years.

DUDLEY.—In Philadelphia, on Monday, March 25th, Dr. Pemberton Dudley, aged sixty-nine years.

EUBANK.—In Ottoman, Virginia, on Tuesday, March 26th, Dr. Robert Fuller Eubank, aged forty-eight years.

FULLER.—In Los Angeles, California, on Thursday, March 21st, Dr. William H. Fuller, of Brooklyn, N. Y.

GLASGOW.—In St. Louis, Missouri, on Friday, March 22nd, Dr. William Carr Glasgow, aged sixty-two years.

LUPTON.—In Martinsburg, West Virginia, on Sunday, March 24th, Dr. Janney Lupton, aged twenty-seven years.

MACGREGOR.—In New York, on Monday, March 25th, Dr. Robert Stuart MacGregor, aged thirty-eight years.

MADAMS.—In Wichita, Kansas, on Tuesday, March 19th, Dr. Charles E. McAdams, aged sixty-one years.

MCCARTHY.—In San Francisco, California, on Friday, March 15th, Dr. W. D. McCarthy, aged forty-six years.

MOORS.—In Buffalo, N. Y., on Sunday, March 24th, Dr. Alfred A. Moors, aged seventy-five years.

MORCOM.—In New York, on Saturday, March 23rd, Dr. Charles F. Morcom.

ROAKE.—In Winfield, Pennsylvania, on Friday, March 22nd, Dr. Levi Roake, aged eighty years.

ROOT.—In Whitehall, N. Y., on Wednesday, March 20th, Dr. Henry Root.

New York Medical Journal

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WHOLE No. 1480.

Original Communications.

SOME OF THE LESIONS OF THE MIDDLE EAR DUE TO INFLUENZA.*

BY GORHAM BACON, M. D.,
New York.

In the brief space of time allotted to me this evening I shall only attempt to refer in a general way to ear complications occurring in influenza.

From the statistics of the New York Eye and Ear Infirmary, it is interesting to note that thirty years ago there were but twelve, or at most, twenty mastoid operations performed during the year at that institution, while in 1889, the year that the influenza made its appearance, the number increased very suddenly. In 1897 there were one hundred and sixty-one, and in 1905 five hundred and fifty-five operations. Although I have made allowance for the increase in the whole number of patients admitted each year, we are forced to the conclusion that the influenza plays a very important part in acute inflammation of the middle ear. Formerly it was exceptional for both mastoid processes to be involved simultaneously, but during the past few years such an occurrence has been frequently observed.

Children seem to be affected more frequently with acute inflammation of the middle ear than adults, and the pain is often very slight even in severe cases. A child will complain of a sore throat and will have a moderate temperature. On examining the pharynx the physician may or may not find the tonsils involved. Very likely there will be simply a redness of the pharyngeal wall. During the day the child will perhaps complain of a slight earache which will be relieved by the application of dry heat or the instillation of drops into the ear. On the following day or so the child may begin to cough, the temperature will then rise to 104° F. or 105° F., and the patient will show all the evidences of a severe cold. The pulse becomes rapid, the child is dull and listless. On pressing over the mastoid process, there is apt to be marked tenderness over one or both sides. An examination of the ear will generally reveal a dull red, bulging membrana tympani on one side, and possibly a commencing inflammation on the other. After making a free incision in the bulging membrane, there may escape a considerable amount of serum or pus or, what happens more frequently, the discharge will be serosanguinolent, very sticky in consistence, and scanty, while on

the following day the discharge may be so copious that it becomes necessary to change the cotton or sterile gauze in the auditory canal very frequently. A sticky serosanguinolent discharge is very characteristic of influenza otitis, and it is in these cases that the temperature in children is apt to be high, while the pain is usually slight and in some instances may be absent.

In examining the pus or serum removed from the middle ear, one generally finds a mixed infection, but if the disease is of a severe type, it is generally due to the presence in large numbers of the streptococcus or the pneumococcus. The staphylococcus, however, may be the cause of a very severe inflammation.

After incising the drum membrane in such a case as I have described, what usually follows? Either the temperature falls and the discharge, at first serosanguinolent, becomes purulent, runs its course for from ten days to three weeks and then ceases with a disappearance of all mastoid symptoms, or else tenderness on pressure over one or both mastoids becomes much more marked, while the temperature ranges from 101° or 102° F. to 104° or 105° F.

It is in this class of cases that the otologist ought to be especially careful as to the administration of an anæsthetic for the purpose of incising the drumhead for, with a simple bronchitis present, it is not always wise to anæsthetize a little patient for fear of setting up a pneumonia. It is always best in very young children to incise the drumhead without an anæsthetic, but if one has to use anæsthesia in an older child, I generally prefer chloroform. Of late I have been administering ethyl chloride, but with each of these anæsthetics one must be very cautious. After incision of the drumhead a high temperature may be due entirely to mastoid involvement or to a deep seated or central pneumonia which may not present any well marked physical signs for two or three days.

I remember the case of an infant, fifteen months old, which I saw in consultation, when the temperature was high, and both drumheads were red and bulging. As the patient had some bronchitis I made the incision without an anæsthetic. There was a free discharge from both ears, but the temperature did not decline. The chest was carefully examined by several experts, but no evidences of a central pneumonia were detected until the third day. The question of opening the mastoid antrum on each side was, of course, considered before the development of the pneumonia, but fortunately it was not done.

* Read before the New York Academy of Medicine, February 7, 1907.

A knowledge of the nature of the infection is, to my mind, of great importance, for in cases of mixed infection from the middle ear, we can afford to delay the mastoid operation, while in cases of virulent infection it is not generally wise to wait long, especially if the mastoid is tender on pressure and the temperature remains elevated in spite of a free discharge from the middle ear.

Then, again, when both mastoids are involved, it is a fact that the infection may be of a different type on each side. In one tympanum the infection may be mixed and a slight one, while in the other the streptococcus or pneumococcus is very abundant. In such a case which came under my observation, after opening both mastoid processes, the patient had a distinct chill on the day following the operation, as well as other well marked symptoms of sinus thrombosis. As I found a virulent streptococcus infection on one side and a mixed one on the other, I opened the sigmoid sinus on the side in which the streptococcus was present, and removed a septic thrombus. There evidently was no involvement of the other sinus, as the patient made a prompt recovery.

We have generally been taught that the temperature shows marked variations in cases of sinus thrombosis, but I have seen cases in which the temperature has remained high continuously and the existence of a central pneumonia had been suspected.

As influenza otitis is apt to be of a severe type, it is always wise to make an early incision in the drum membrane, even if there is but little bulging, and especially so if the temperature is high and there is any tenderness over the mastoid process.

It is very difficult to formulate any definite rules as to the time to operate in cases of mastoiditis following the gripe. As a general rule, however, the operation should be performed early if the temperature remains elevated after the drumhead has been incised, and particularly if the discharge is free and the patient has well marked symptoms of mastoid disease. In addition to a knowledge of the nature of the infection, it is most important to make frequent examinations of the blood to determine whether the leucocytosis is increasing or decreasing, and what relative changes are taking place in the cell percentage.

I wish to call attention to the fact that in some cases of mastoiditis an operation can be avoided by making not only one, but several incisions in the drumhead. As the discharge is apt to be sticky at first in these cases, the tendency is for the opening in the drumhead to close early.

After mastoiditis, the most frequent complication following an influenza otitis is septic thrombosis of the sigmoid sinus. In operations on the mastoid cells, I believe that it is most important not to expose unnecessarily the normal sigmoid sinus, for cases have been reported of sinus thrombosis which probably developed from inadvertent exposure of the sinus during a mastoid operation. Koerner explains this pyæmia as being due to an irritation of the sinus from the introduction of gauze, so that a parietal thrombus is developed, and he warns especially against this danger.

Besides thrombosis of the sigmoid sinus, the attention of otologists has of late years been directed

to a primary phlebitis and thrombosis of the jugular bulb, which occurs more particularly in children. As the jugular bulb lies just below the floor of the tympanum, it is easy to understand how infection can travel readily from the middle ear directly to the jugular bulb, and cause a phlebitis or thrombosis without involvement of the mastoid cells. The infection, which is usually due to the streptococcus, is carried by direct absorption, or by means of the small veins and lymphatics. Brain abscess, serous and purulent leptomenigitis, are occasional complications of influenza otitis.

The time is too limited this evening to more than refer to influenza otitis and its complications.

47 WEST FIFTY-FOURTH STREET.

THE OCCURRENCE OF ATYPICAL PHAGOCYTIC CELLS IN THE CIRCULATING BLOOD.

BY MARY W. ROWLEY, M. D.,
Boston.

The varieties of white cells found in normal or pathological blood are polynuclear leucocytes,

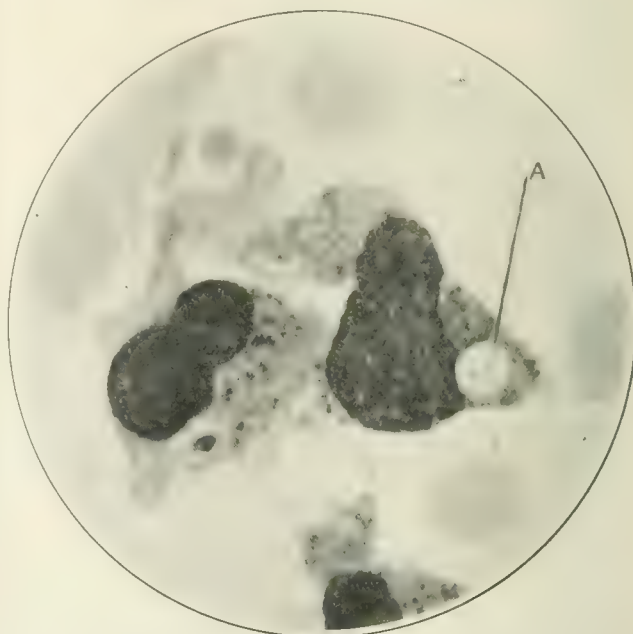


FIG. 1.—Lymphatic leucæmia, showing two of the large atypical cells; A, a red cell engulfed. $\times 2,000$.

lymphocytes, eosinophiles, mast cells, and myelocytes.

In the blood of a patient with tertian malaria and in that of three cases of lymphatic leucæmia, I have found cells quite different from those mentioned. In size and shape they vary much, but as a rule they are much larger than any of the usual blood cells. They are sometimes round in shape and sometimes irregular in outline with protoplasmic processes, as is shown in Fig. 1. Here also you may see pieces apparently broken off resembling blood plates in staining reaction. They may have one or more nuclei (Fig. 1). The nuclei contain a fine reticular net work (a suggestion of which is seen in the nuclei of the cells in Fig. 1) and in the majority of cells are kidney shaped.

In staining reaction (Wright's modification of

Leishman's stain) they resemble the large lymphocyte, the nuclei staining a reddish purple, and the protoplasm various shades of dusky blue. There are occasionally reddish spots scattered in the pro-

found in exudates into the serous cavities, in the spleen, and elsewhere—the so called "endothelial cells."

I wish to express my appreciation of the encour-

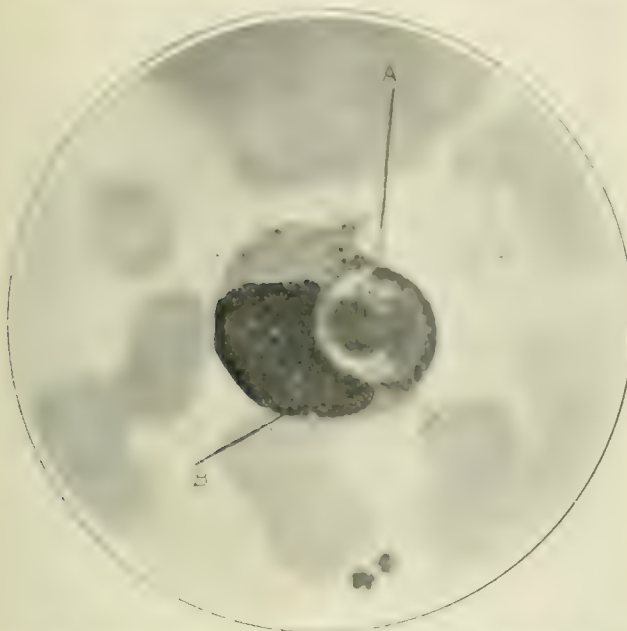


FIG. 2. A, polynuclear leucocyte engulfed in a cell; B, cell nucleus. $\times 2,000$.

toplasm (enclosures?), but in the majority of cells there are no distinct granulations.

That these cells may act as phagocytes is shown in Figs. 1, 2, and 3, where they are seen engulfing



FIG. 4. Lymphatic leucemia mitoses in a cell, of the type described. $\times 2,000$.

agement and help given me by Dr. Richard C. Cabot, who has looked over the specimens mentioned and identified the cells as phagocytic. The photographs were made by Mr. Willard C. Greene, of Boston.

190 MARLBOROUGH STREET.

TWO NEW DRESSINGS. FIRST AID AND PERMANENT, FOR FRACTURED CLAVICLE.*

By RUSSELL BELLAMY, M. D.,
New York,

Captain and Assistant Surgeon in Charge, Squadron A, Cavalry,
N. Y. N. G.

It is due to the inspiration and courtesy of one of the greatest living experts, if not the first, on fractures, Professor Lewis A. Stimson, that I am able to present and demonstrate these methods for handling one of the commonest fractures—that of the clavicle. It is to this leader that my thanks are extended, especially for allowing me the privileges of pursuing the greater part of my surgical clinical study for the last seven years at the House of Relief.

Pilcher, of Brooklyn, in referring to clavicular fractures, expresses it best when he says: "Those dressings which are *effective* are *intolerable*, while those which are *tolerable* are *ineffective*."

In an experience covering the care and observation of hundreds of fractures of all varieties, some of which were seen in the cavalry and polo field in less than five minutes after they had occurred, I realized three years ago that those giving greatest discomfort, annoyance, suffering, and subsequent deformity and, I believe, impairment of the shoulder

* Demonstrated before a meeting of the Society of the Alumni of Bellevue Hospital, held in April, 1906, at the New York Polyclinic, and to the staff of the Ruptured and Crippled Hospital.

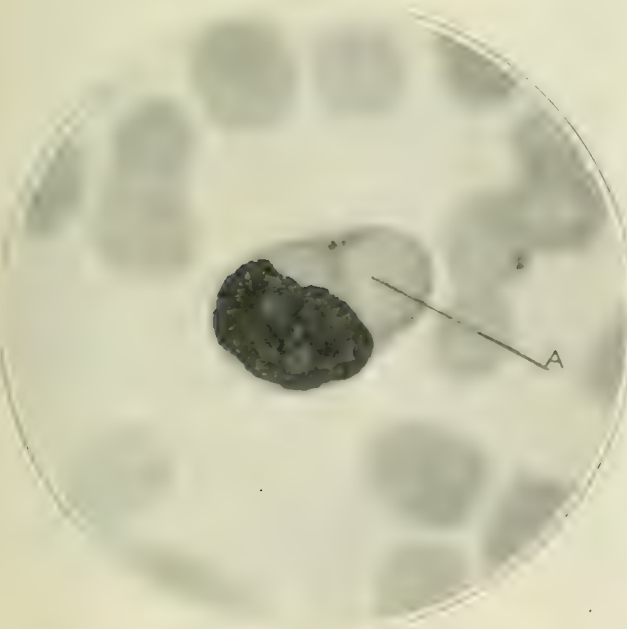


FIG. 3.—Tertian malaria cell of the smaller type; A, a red cell engulfed. $\times 2,000$.

a polynuclear leucocyte and erythrocytes. Fig. 4 shows mitosis, a cell probably identical with those described above.

As to the nature of these cells I feel in doubt. They resemble to some extent one of the elements

joint (to say nothing of the humiliation experienced by a young girl when she first wears her décolleté gown) were those of the collar bone. The American pioneer, Professor Hamilton, gave a charming account of this fracture. The late Professor Lewis A. Sayre quoted from him and other authorities



FIG. 1.—Normal left clavicle, superior surface (Gray's Anatomy).

when he described his use of adhesive plaster in a simple dressing for fractured clavicle, now known to every surgeon in every land.

By reference to Professor Hamilton's exhaustive work on *Fractures and Dislocations* we find that he has devoted eight pages of short quotations from fifty-seven different authors, running from the days of Hippocrates to the present time, in order to confirm the accuracy of his own observations; viz., that "fracture of the clavicle is almost always

oblique fracture of the middle third of the clavicle, with all the bandages imaginable, we cannot prevent deformity." Dr. Wales says: "A fracture outside of the coracoclavicular ligament will be attended with a posterior displacement of the external fragment, which will unite with anterior angular deformity in spite of best treatment. As a general rule it may be stated that, though the reduction is so easy, yet in those cases of complete oblique fracture of the adult it will be impossible to retain it by any apparatus whatever, and union will therefore occur with some degree of overlapping or deformity." M. Mayor, of Lausanne, thinks that up to the present time no successful treatment has been devised, and recommends treatment without any apparatus, the patient lying in the horizontal posture on the back, which he says will give the most perfect union. Many of the most eminent surgeons of the present day, being dissatisfied with all the different apparatus and bandages devised, have adopted the views of M. Mayor, and treat some cases of fractured clavicle by what is called the "postural treatment"; viz., lying on the back, with a pillow between the shoulders, until union has occurred. This treatment, besides being exceed-



FIG. 2.—Deformity specimens from the Anatomical Museum of Cornell University, Medical Department.

followed by deformity, whatever may be the perfection of the apparatus or the care of the surgeon." . . . "Hippocrates has observed that *some degree of deformity* almost always accompanies the reunion of a fractured clavicle. All writers since his time have made the same remark. Experience has confirmed the truth of it." Velpeau says: "In

ingly irksome to the patient, for it involves the necessity of a continuous horizontal posture for a number of days, will frequently result in non-union of the fragments if the fracture is in the outer third of the bone, the frequent contractions of the deltoid and trapezius muscles preventing the fractured extremities from remaining in quiet apposition.

The story is told by some waggish surgeon (then physician to a lady in waiting, an old maid, in the

make arrangements for a relay of doctors, who, by digital pressure, might keep the fragments from moving. The author of this fascinating story, I



FIG. 3.—W. B. Coley's case of sarcoma of left clavicle following union of fractured clavicle—neglected treatment.



FIG. 4.—Back view. Author's first aid treatment, showing gantlets as used for fulcrum. Trooper Squadron A, Cavalry, N. G. N. Y.



FIG. 4, a.—Author's dressing for fractured clavicle. First aid.



FIG. 4, b.—Trooper, side view, safety pin holding forearm up.

last century), that this priggish miss, when told of the liability of her presenting to the beaux a deformed neck when next seen at a dance, commanded her medical attendant, after he had ordered her to bed with a pillow placed between her shoulders, to

regret to say, neglects to tell how long the fragments were held in place, and especially does he neglect to relate the result and describe the lady's appearance on her return to the ball room.

About three months ago, while lecturing before

the Carolyn Club, a delightful philanthropy organized by two well known women, for the Society of First Aid to the Injured, I, as if by chance, discovered the only practical first aid dressing for the collar bone. The Esmarch bandage was in my hands, when suddenly we found it over the shoulders and under the arms of one of the young women. Immediately the dressing was dedicated to this club and its followers, and it has been taught to the troopers of Squadron A. The Esmarch bandage is held with the sharp angles in either hand, the base

I trust will prove useful, for it certainly holds the injured shoulder upward, outward, and backward.

Nearly three years ago it occurred to me suddenly that the time had arrived when something must be done to relieve the misery of the patients sent to the clinic by other physicians and treated there by our own staff. It was very rare to have a patient return with the fracture dressed as when he left the hospital. Usually they loosened or tore the dressings off at night, and those keeping the bandages in place related rather pathetic stories of

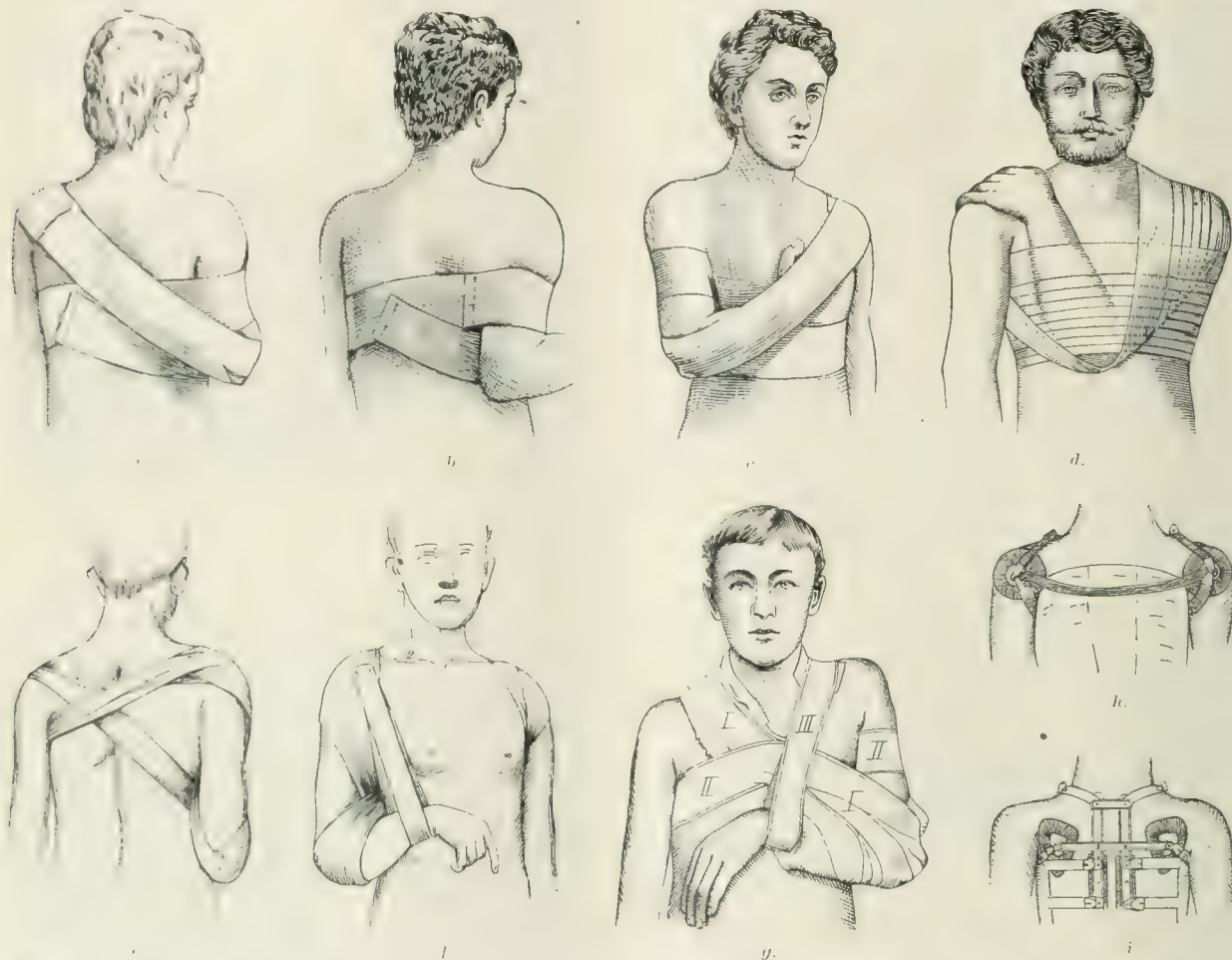


FIG. 18. a, Sayre's method (after Agnew); b, Sayre's adhesive plaster dressing, first piece; c, Sayre's adhesive plaster dressing, second piece; d, Velpeau's dressing; e, Moore's method (from Wyeth's *Textbook on Surgery*); f, Moore's method (from Wyeth's *Textbook on Surgery*); g, from *Handbuch d. prakt. Chirurgie*, 2. Aufl., IV Bd., Hoffa; h, Whitman's apparatus for holding the shoulders back, front view; i, Whitman's apparatus for holding the shoulders back, rear view.

of the triangle being up, and the fracture is reduced by the usual method, except that I apply the second position of my friend and learned teacher, Professor Theodor Kocher, for subcoracoid dislocation of the shoulder. By this movement, it can be seen, the pectoralis major and its clavicular attachment is tightened by the bicipital ridge on the humerus being turned outward and backward, the forearm being rather acutely flexed and drawn well up and the sleeve held in place by a safety pin. The bandage is left broad for the uninjured shoulder, while it is folded for a *point d'appui* for the outer extremity of the injured clavicle; a pad, a fulcrum of gantlets or gloves, is placed in the lower interscapular space, and the ends of the bandage are tightly tied over it. This dressing is not uncomfortable and is handy, and

the miseries experienced, especially if the weather was hot.

Gray tells us in a foot note: "The clavicle is the most frequently broken of any single bone in the body." He also states that those animals which have claws have clavicles, and it was either after reading this or observing the clawlike effect of my hand as I grasped the shoulder in reducing the deformity of the fracture that I determined upon the claw shape of the adhesive plaster as a salient point in my dressing.

Should the surgeon be sufficiently interested in treating this most neglected fracture, he will review his anatomy and some day examine on the cadaver the attachments of this bone with its six muscular and eight ligamentous attachments; and I believe

that he will agree with me that a deformity must to a greater or less extent impair the function of the nearest shoulder joint in years to come; and a deformity of considerable importance must prevent the unfortunate patient's ever being able to attain athletic importance in upper extremity work. Although I have seen many old fractures of the clavicle, many with horrible deformities, it has never been my good fortune to see one involving and subsequently injuring the brachial plexus.



FIG. 6. Author's dressing for fractured clavicle. Bandage A.

Professor Stimson states that "displacement and shortening, however, are the rule; only those cases apparently are exempt in which the line of fracture is transverse, and there is no displacement at first. The amount of shortening may vary from a fraction of an inch to one and even two inches, and it may be displaced by angular displacement or by overriding or by both."

At present I am treating a little girl who has sustained her third fracture in the same bone by falling down stairs twice and once from a bench

in Central Park. She has considerable deformity, but as she is only five years old and my dressing is holding her shoulder in place, I hope that she will lose considerable of the deformity.

Ossification of the coracoclavicular ligament has been observed in several cases after fracture in the outer third.

That sarcoma may follow a neglected fracture is shown by the photograph of a patient lent me by Dr. W. B. Coley. I have seen this patient and taken his history, which Dr. Coley will publish later. He has collected only seven cases of sarcoma of the clavicle, and two of these followed fracture. Before



FIG. 6. a. Author's dressing for fractured clavicle. Bandages A and B.

I devised my own method, I thought those shown in Fig. 5 the best.

My permanent dressing consists of five parts:

1. A strip of moleskin plaster, cut to resemble a claw, a little smaller than the size of the patient's hand, extending into a strap of the size of the wrist; this claw is to be stuck to the skin about one inch in front of the tip of the injured shoulder, and should extend at an angle across the back, over a fulcrum between the scapulæ, well around the front of the chest, thereby holding the shoulder backward and outward.

2. A strap about two inches wide (of course de-

pending on the size of the patient) will, when folded, encircle the tip of the elbow and be attached to the front and back of the chest, elevating the shoulder about an inch higher than the opposite one, and the hand of the injured side will be free and rest over the upper part of the front of the chest.

3. A strap of similar width, i. e., a fixation strap, which will cover the lower part of the elbow and extend around the chest so as to hold the arm in a position simulating Kocher's second position for dislocated shoulder, thereby tightening the pectoralis muscle and holding the inner fragment in place.

4. A triangular pad of cotton and gauze sufficiently large to keep the arm at the proper angle when hanging by the side; this angle can best be judged by noting the uninjured arm and shoulder.

5. A pad of cotton and gauze (interseapular pad) sufficiently large to act as a fulcrum, for the strap (Fig. 2) where it crosses. When the dressing is properly ap-



FIG. 6. *b.* Author's dressing for fractured clavicle. Bandages A, B, and C.

plied the shoulder will be drawn upward, outward, and backward, positions imperative if the fragments are properly approximated. In using zinc oxide adhesive plaster, its gauze covering should be stripped from the plaster only where it is to adhere. In studying my dressings Professor Stimson was good enough to suggest that the skin be tightly drawn before applying the plaster, so as to counteract the subsequent elasticity and prevent tissue shrinkage.

If possible, patients should be examined every day for a week, every other day the second week, and then every third day until discharged. The sad results so often found in many varieties of fractures I believe to be due primarily to the stereotyped and apparently careless way in which they are handled. A maltreated fracture certainly acts as a living monument to the doctor, whether he is physician or surgeon. It is advisable to always have new pieces of moleskin or zinc oxide plaster cut



FIG. 7. Dislocation of right clavicle in a child of five years. Author's dressing on when photographed.

and ready to apply it necessary. In removing the dressing the old plaster can easily be removed with alcohol. In putting on an extension bandage, so necessary in children or delirious patients, use strict nomenclature with plaster of Paris, and begin just in front of the tip of the injured shoulder.

I have applied my dressing in a large number of cases with absolute success. The warm reception given this dressing by many of the most prominent surgeons, including especially Virgil P. Gibney, John A. Wyeth, and Alexander Lyle, and the lengthy study by L. A. Stimson, and the agreeable encouragement of many of the younger members of the profession, I can gladly say, have fully repaid me for all the time, study, and experimenting I have done in perfecting it.

I am under great obligations to all the staffs, professional, nursing, and official, at the House of Relief for their courtesy and kindness while I was working out these ideas. I maintain that my method gives comfort, simplicity, and diminution of deformity.¹

20 WEST THIRTIETH STREET.

ANEURYSMOTOMY FOR ABDOMINAL ANEURYSM. REPORT OF AN UNSUCCESSFUL CASE, WITH AUTOPSY.*

By JAMES C. MASON, M.D.

Boston, Mass.,

Surgeon in Chief, Carney Hospital.

The successful treatment of aneurysm of the abdominal aorta is most unsatisfactory, and it is in the hope that an occasional case may be relieved temporarily or permanently that the writer would offer the suggestion contained herein. Ever since Matas so brilliantly demonstrated the cure of peripheral aneurysm by suture of the endothelial walls it has seemed to the writer that if the same principle could be applied to abdominal aneurysms we might possibly save occasionally a patient whose outlook under ligation, wiring, or other treatment is so doubtful.

Provided we could deal with a dilation of the aorta, lateral or anterior, without involvement of too many important branches it is within the range of possibility that we should compress the sac close to, and parallel with, the main trunk, with rubber covered clamps, open the sac and suture its lining surfaces together with successive rows of some absorbable material which would for the time being at least control further sac formation. We have a number of times ligated or packed the aorta in cases of aneurysm, but never with more than temporary relief. We have not tried wiring, though it has occasionally been successful in the hands of others. Ligation has been only temporarily successful. Most cases of aneurysm come late, if at all, to the surgeon. Almost every one that the writer has seen has been treated as a spinal caries, a rheumatoid arthritis, or for some intraabdominal lesion causing dyspepsia. Not until large dissecting, pulsating tumors have formed have they come to the surgical clinic. If now it were permitted to examine these aneurysms

early, some might, when there was still but a small sac, and this sac were found to lie in such a position that it could be clamped and sutured the writer believes that such a case could be successfully operated on. This same method may be applicable to similar aneurysms elsewhere where the surgeon would hesitate to sacrifice an important organ like the kidney, or to open and suture the artery as laid down by Matas.

The case is reported merely as a suggestion, but the writer feels that the suturing can be depended upon to control leakage temporarily and on the basis of Matas's investigations. Adhesion of a few hours will probably insure permanent union. In a second case in which we opened the abdomen to try this method the sac was so enormous and so tense that no clamp would compass the base without serious damage to the wall, and the operation was abandoned, the patient dying shortly afterwards from prolonged starvation and distress.

CASE.—John M., thirty-nine years old, had always been a hard worker in the lumber business and was an expressman. He was not alcoholic, and there was no history or evidence of syphilis. He came to me in May, 1906, by Dr. C. F. Painter who, two years before, had treated him with a plaster jacket for symptoms of spinal disease. This treatment was continued for nearly a year with great relief and the jacket was discontinued. Before this time he had been troubled with "stomach symptoms" and with pain extending into his groins and lower regions which had induced surgeon to remove his appendix. He had hoped until the jacket was applied, and although he was able to discard the latter yet his dyspeptic symptoms did not entirely disappear. He described the pains as girdle-like, sharp and cutting and starting in the dorsal region. The pain might last for a few minutes or an hour, and was worse in the morning. Rest and restricted diet modified the pain after the removal of the jacket. From the very first, three years before I saw him, the pain would at times shoot into the hips and along the outer side of the thighs to the knees, and he would complain of soreness and lameness of the lower extremities. About eight months before I saw him he took a trip to Jamaica and derived great relief from his dyspepsia, but the pains in the lower limbs continued and recently they would shoot so severely into his hips that he would drop in the street. Within the last year he had become aware of a pulsating tumor in the abdomen, which had lately caused him some discomfort. He was sent at once to the Carney Hospital for observation and was placed on restricted diet, as recommended by Osler, and potassium iodide.

Examination showed a visibly pulsating tumor in the epigastrium, dull on percussion, its lower edge coming three and a half fingers' breadth above the umbilicus. The tumor was somewhat tender and large vessels were heard on auscultation. Otherwise a tall, thin, muscular man, he appeared perfectly healthy. Under treatment the force of the pulsation diminished, and the tumor decreased about half an inch in diameter by rough calculation. He felt so much better and so little could be offered him surgically that he went home, but returned five and a half weeks later, suffering severely from pain and so much weaker physically that he was willing to risk anything for relief.

Operation was performed under chloroform-ether anæsthesia. On opening the abdomen in the epigastrium the aneurysm was found pushing forward above the stomach, with the pancreas resting on its lower portion. From the lower third the celiac axis passed downwards, backwards, and to the right, flattened against the aneurysm. This, together with the right

* Read before a meeting of the Southern Surgical and Gynecological Association, held at Baltimore, Md., November 29, 1906.

phrenic artery, was ligated and cut. The pancreas was then freed from the sac, and the retroperitoneal tissues were pushed back from the front and sides of the tumor. At the upper pole the sac was as thin as paper and was torn, exposing a yellowish, soft, fibrinous tissue. At the time it seemed, and I hoped, that the upper portion was a false aneurysm, and that I could find an opening in the true sac, which could be dealt with by clamp and suture. I therefore explored with finger towards the celiac opening, but this was followed by a gush of blood which could be easily controlled by digital pressure. A rubber covered stomach clamp was then passed paralleled with the aorta and close to its anterior wall so far as could be estimated, and the bulky sac clamped. It was necessary to place a small sharply curved protected clamp at the upper part of the tumor to control the oozing from the rent just made. The tissues posterior to the forceps were then freed laterally, it being possible to work with comparative comfort. It then appeared that there was a mass of extravasation in the left loin with scarcely any pulsation; this apparently was a false aneurysm connected with that higher up. The only hope now lay in the possibility of controlling any opening in the main sac by our sutures, though it was felt that the chances were small. Ligation was out of the question, because the upper limit of the tumor touched the diaphragm. Therefore the sac controlled by the long clamp was opened lengthwise and some whitish clots turned out, leaving a smooth endothelial surface which was sutured face to face with three rows of continuous lock-stitch chromic gut. On removing the clamps the sutured line was dry, but above at the torn place where the wall was too thin and friable to allow suturing there was bleeding, which was controlled by reapplying the clamp. So far as could be told there was no leakage at the suture line, and had that been the only place for possible hæmorrhage I felt that the abdomen could have been safely closed. Up to the last few moments the pulse had been slow and quiet, but with the loss of blood from the tear and the replacement of the clamp, it increased rapidly in rate and lost volume. The clamp was left *in situ* and an iodoform wick packed about it, the abdominal wound being closed except for these. After ligation of the celiac axis there seemed to be no evidence of interference with the blood supply to the stomach. At the close of operation the veins became engorged, but this might easily have come from exposure and handling. The patient was put to bed in marked shock and was given salt solution and adrenalin. The Crile suit could not be applied on account of the projecting clamps. There was continuous oozing of blood and the patient died during the night.

Autopsy at the Carney Hospital twenty-four hours post mortem, by Dr. S. B. Wolbach, of the pathological department of Harvard Medical School:

Body of a well nourished, well developed, and powerfully built white man, 182 cm. long. Rigor mortis complete. Post mortem lividity marked. Pupils equal, $\frac{1}{8}$ mm. No œdema.

Abdominal Cavity: The abdominal fat is 2 cm. deep. The edges of the opening in the gastrohepatic omentum are tied off with catgut sutures. The stomach is displaced slightly downwards, the clamp and wicks rest upon the anterior surface and cross the lesser curvature about 4 cm. from the pylorus. The liver is slightly displaced upwards and to the right. The jaws of the clamp enclose a mass of tissue 8 cm. long, and at the top where it mushrooms over, 1 cm. wide. Along the top are several stumps of tissue ligated with coarse catgut, besides a line of lock stitch, continuous catgut sutures. The whole surmounts a tumor mass lying upon the vertebræ and bordered on each side by crura of the diaphragm. The right crus is pulled forwards by

the tissue included in the clamp. There is 400 to 500 c.c. of liquid blood in the flanks. The great omentum below the operation wound is colored dark red, with extravasated blood. The appendix is missing, the cæcum is adherent anteriorly to the peritonæum, otherwise there is no indication of an operation. The site of the appendix is perhaps indicated by a few folds running to the mesentery of the ileum from the cæcum. The mesenteric nodes are not remarkable.

Pericardial Cavity: Normal.

Pleural Cavity: The left apex is adherent posteriorly by a few fibrous adhesions. The whole of the right upper lobe is adherent at the apex and posterior border by firm, fibrous adhesions.

Heart: Slightly large. Estimated weight, 350 grammes. Myocardium is firm, uniformly brownish red color. Valves and endocardium are normal. Coronary arteries show an occasional soft yellowish patch. The beginning of the aorta is thickly studded with small elevated white and yellowish areas, no calcification.

Measurements: Pulmonary valve, 8.0 cm.; tricuspid valve, 14.0 cm.; aortic valve, 9.0 cm.; mitral valve, 11.0 cm.; thickness, left entrance wall, 2.0 cm.; right ventricle wall, 0.5 cm.

Lungs: The left apex is puckered posteriorly and the pleura slightly thickened, otherwise negative except for post mortem settling of blood. The whole upper lobe of the right lung has scattered throughout caseous foci, 2 to 6 mm. in diameter, separated by normal lung tissue. At the apex is a larger caseous focus, 2 cm. in diameter, just beneath the pleura. The remainder of the lung is negative except for post mortem settling.

Spleen: Elastic, firm, capsule slightly wrinkled. Estimated weight, 250 grammes. On section the pulp is very dark red and firm enough to give a smooth surface. The Malpighian bodies are just visible as gray points. Trabeculæ not visible.

Liver: Estimated weight, 1,600 grammes. Normal in size and consistency. Color is pale reddish brown, with delicate paler grayish mottling indicating lobular outlines. Gallbladder and gall ducts are normal.

Gastrointestinal Tract: Normal.

Kidneys: Normal in size. Estimated weight, 350 grammes. Cortex averages 0.6 to 0.7 cm., is pale. Glomeruli easily visible as glistening points. Pyramids pale red. Pelvic fat not increased. No cysts. The capsule strips with considerable difficulty in places removing granules of kidney tissue.

Adrenals: Normal.

Bladder and Ureters: Normal.

Prostate and Genitalia: Normal.

Thoracic Dust: Patent normal.

Aorta: The aorta is continuous above and below with a tumor mass over the lower dorsal and upper two lumbar vertebræ, and included between the crura of the diaphragm. The aorta was removed by stripping from the vertebræ as far as possible from above and below until points were reached where it became firmly adherent to the spine (the upper level of the twelve dorsal and the middle of the body of the third lumbar). These vertebræ were sawn about two thirds through and the intervening vertebræ split off in the frontal plane. The aorta was then opened from behind by sawing through the vertebræ and continuing the incision upwards and downwards. Over the twelfth dorsal, first and second lumbar vertebræ is an aneurysmal sac, 14 cm. long and 13 cm. inside greatest circumference. The first and second lumbar vertebræ are excavated for a depth of 2 to 3 cm. The articular fibrocartilage is only slightly eroded anteriorly. The cavities in these two vertebræ are filled with firm, grayish red clot. The general shape of the sac is fusiform and at the level of the first lumbar vertebra there projects anteriorly a second sac, 3 cm. deep and 4 cm. in diameter. The anterior surface of this sac, viewed

from the inside, has a vertical slit 4 cm. long, the edges of which are enclosed in the pedicle clamp. The aneurysm contains but a small amount of clot, most of which lies against the vertebra where the eroded bone forms the posterior wall. The small anterior sac contains fresh, dark red clot. The aorta above and below the aneurysm as well as the aneurysm is thickly covered with wrinkled elevated white and yellow patches, thicker above the aneurysm than below. There is no calcification. The common iliac arteries are very slightly sclerosed, the left one has one small patch only, the right has several large patches. The inferior mesenteric and renal arteries are patent. At the orifice of the left renal arteries is a conical bulging of aneurysm wall, about 1 cm. in diameter and depth. The celiac axis and phrenic arteries are included in the tissue between the clamp. The superior mesenteric artery is free, but flattened by obliquity of its origin, and is filled with grayish clot. The origin of the phrenic arteries, celiac axis, and superior mesenteric arteries are covered in the aneurysm by firm, friable grayish clot.

Abdominal Diagnosis: Aortic aneurysm (abdominal); arteriosclerosis; pulmonary tuberculosis; absence of vermiform appendix; old appendix operation cicatrix; operation wounds (fresh); chronic fibrous pleuritis.

Note.—Since reading this paper, I see that Lozano, of Saragossa, has attempted to close by internal suture an aneurysm of the bifurcation of the aorta. The sutures controlled hæmorrhage from the sac, but fatal hæmorrhage took place from the proximal portion of the aorta. He operated in November, 1905.

173 BEACON STREET.

THE DIAGNOSTIC AND PROGNOSTIC VALUE OF ENUMERATION OF THE NUCLEI OF THE NEUTROPHILIC LEUCOCYTES, AND THEIR RELATIVE PHAGOCYTIC POWER.

(Preliminary communication.)

By D. M. KAPLAN, M. D.,

From the *Brooklyn Hospital*.

New York.

Thanks to Pappenheim, whose extensive work on the white blood corpuscles is well known, we are enabled to-day with more certainty than heretofore to classify the white blood corpuscles and give each form a more or less definite genetic interrelationship.

According to Pappenheim the neutrophilic cell is no more nor less than a metamorphosed and specialized myelocyte, one of its characteristics being phagocytosis in the larger sense, the myelocyte being represented in the blood stream by the transitional cell, which, in turn, is formed from the large lymphocyte.¹

It seems very possible that the opinion of Pappenheim is the correct one, for some of the neutrophilic cells formed from the myelocytes have a morphology and microchemistry close enough to the myelocytes to justify such a conclusion.

As is well known the nuclear polymorphism of the neutrophile cells extends all the way from a mononuclear form to a form having two or more parts, even to six (a few seen by myself). Inspired by the work of Pappenheim and others, and feeling the necessity for further work along these lines, and not finding anything in the literature

which goes beyond the classification and enumeration of these elements, Arneth undertook upon himself the task of gaining a closer insight into these individual representatives of the neutrophile cells and studied the relationship of the mononuclear, binuclear, trinuclear, etc., neutrophile cells in various diseases. According to Pappenheim and Arneth the cell closest to the myelocyte is the neutrophile cell with one nucleus, which may be indented, bent, dwarf-sac shape, etc., however, not yet divided into two separate parts, and being closest to the myelocyte is most likely the youngest representative of the polymorphnuclear cell in the blood stream.

In his work on the various neutrophilic leucocytes Arneth introduces a few new terms which fill a gap rendering the reading of his work ever so much more interesting.² In the changes of the nucleus from the "mono" to the polynuclear form Arneth uses for the nucleus of the youngest and least changed relative of the myelocyte the term karyospheric nucleus:



Myelocyte

Polymorphnuclear neutrophils

When the cell advances in age there is a tendency to form lobes. The individual lobes may overlap or be connected by one or more strands varying in thickness. Such cells are said to have karyolobic nuclei:



In this paper the nuclei which were connected by very delicate strands of nuclear substance were classified by me into the two nuclear and three nuclear forms, as the case may have been. The karyolobic nucleus advancing in age actually breaks up into distinct two, three, or four nuclear forms, such cells were called by Arneth karyorhexis, the term so used not carrying with it a degenerative meaning:



In the extensive work which Arneth carried out he found that, although in some cases the neutrophilic count as well as the number of white blood corpuscles were normal, the results of his investigations compelled him to classify such findings among the abnormal blood pictures, for the quantitative nuclear variations were so different from the normal picture that his conclusions were justified.

To properly name such conditions, for we know that in measles, mumps, typhoid, etc., we usually meet with a diminished number of white cells, or hypocytosis—and there are no doubt other pathological conditions of an infective nature where hypercytosis is absent—Arneth introduces the

¹ Pappenheim, *Atlas der Menschlichen Blutzellen*, pp. 16, 24, and 25.

² *Die Neutrophilen des Menschen*, Blutkörperchen, 1902, 9.

term of "iso" for the normal quantitative nuclear picture, and "aniso" for the abnormal nuclear picture. So that we may have a normocytosis, or a normal white blood count, with an iso or normal, or an aniso or abnormal nuclear count. We may also have, as can be clearly seen, an iso hypercytosis, and an anisohypocytosis, all depending upon quantitative nuclear determinations.

In the cases of hypocytosis found in measles, mumps, etc., an iso hypocytosis was never found, on the contrary, an aniso hypocytosis; in other words, a diminution in the number of white blood cells, the quantitative nuclear count deviating very much from the normal picture. (For purposes of elucidation a few characteristic tables in this paper will be headed by their appropriate designations, as suggested by Arneth.)

The fundamental utility of Arneth's conclusions as they appear to me are as follows: That a definite prognostic, and more or less diagnostic use can be made from estimating the percentage of the various forms of nuclei of the neutrophilic cells. Such conclusions naturally depending upon a number of counts.

As observed by Arneth, the cells predominating in number are those containing two and three nuclei. Next in number are the cells with four nuclei, then with one nucleus, and least in number are the ones with five nuclei. In pathological states where there may be either a normo, hypercytosis, or hypocytosis, the number of "twos" and "threes" diminish, and the number of the "ones" markedly increases. A noticeable diminution of the three nuclear forms takes place and a complete absence of the fours and fives is observed, giving the picture of an aniso, normo, hypercytosis, or hypocytosis, the latter depending upon the quantity of white blood corpuscles to a cubicmillimetre of blood.

It must be mentioned here that the number of "one" nuclear neutrophiles, according to Arneth, is rather low for normal bloods, for I have found and will show in tabular form, that the "one" nuclear forms occur in greater numbers than was observed by the pioneer of this sort of work. My findings also coincide with those of Knowatski,³ whose normal average is here given:

1	2	3	4	5
24	45	25	5	1

The latter observer also made observations with the nuclear count on blood from puerperal sepsis cases with a view to prognosis.

To settle in my mind the question of the normal average, I counted one hundred cells from normal individuals, my assistant, Dr. Felberbaum, to whom I wish to express my thanks at this juncture for his intelligent cooperation, also counted one hundred cells independently. The counts were compared and an average made. The results were as follows:

1	2	3	4	5
20	40	35	5	1

Mr. R., laboratory assistant.

1	2	3	4	5
18	30	35	15	2

Mr. W., orderly.

1	2	3	4	5
18	30	35	15	2

Dr. R., port 2, 1906
1906, 1906, 1906

Dr. D. M. K.

1	2	3	4	5
25	46	25	3	1

Mr. G., orderly.

1	2	3	4	5
29	54	14	3	

Mr. R., laboratory assistant, on another day.

1	2	3	4	5
27	52	18	3	

Mr. G. (most likely functional tortipelvis).

1	2	3	4	5
35	50	13	2	

Dr. E., during childhood, suffered from tuberculosis of cervical glands.

1	2	3	4	5
34	55	10	1	

Miss O'B., nurse.

1	2	3	4	5
22	41	26	10	1

Mrs. S., suffering from fermentative dyspepsia.

The number of white blood corpuscles in the persons mentioned was normal, the entire picture, therefore, is that of an iso normocytosis.

The normal average as found by Arneth is much less for the "one" nuclear forms and by far greater for the "four" and "five" nuclear forms, as the following tables tend to show:

1	2	3	4	5
1	21	48	23	4

Dr. A.

1	2	3	4	5
6	39	30	17	2

At present I am not in a position to say why the differences between the counts of Arneth on the one hand, and those of Knowatski and myself on the other hand, are so great. It may be that the triacid stain used by Arneth did not stain the finer strands of nuclear substance, thus diminishing the number "ones" and correspondingly increasing the number "twos" and "threes," whereas the fluid used by myself—a modified Jenner—is markedly karyophilic and brings out with great sharpness any nuclear structure, and stains granules with unmistakable clearness.

The use a diagnostician may make of these findings are still very meagre and need a good deal of further elaboration. However, as far as prognosis is concerned, I am prepared to prove the utility of the nuclear count, for in the beginning of a disease there is a rapid rise of the "one" nuclear cell, which as the disease progresses for the worse still further increases in number, and as the malady becomes stationary these cells tend to retain a definite numerical uniformity. As the disease process tends to subside the "one" nuclear forms relatively diminish in number and the "twos" and "threes" increase. The hypercytosis may have disappeared long ago, but the "one" nuclear neutrophiles are still increased during convalescence, oscillating up and down. The normal picture is not regained until after many weeks.

To illustrate this point, as well as the prognostic value of such counts, the following cases are suggestive:

CASE I.—Patient R., a porter, had never been sick before.

December 23, 1906: He felt chilly, was sickly looking, had rough breathing and slight impairment of resonance over left apex, temperature 97° F., pulse 72, respiration 24, was put to bed.

December 24, 1906: Pulmonary signs had cleared up and erysipelas developed on the face. At 12 m., T. 102.6, P. 82, R. 24.

Blood Count: Hb. 100 per cent.
R. B. C., - - - 4,640,000
W. B. C., - - - 16,200

Nuclear Count:
1 2 3 4 5
71 28 1

(This schedule shows an aniso hypercytosis.)

Urine: A trace of albumen and a few hyaline casts were found; later on an excess of indican.

December 27, 1906: Patient felt better. T. 98.4, P. 84, R. 24.

Blood Count: Hb. 95 per cent.
R. B. C., - - - 4,820,000
W. B. C., - - - 16,800

Nuclear Count:
1 2 3 4 5
58 35 6 1

January 3, 1907: Patient felt much better. Urinatus was gone.

Urine: No albumin, no casts.

Nuclear Count:
1 2 3 4 5
52 42 5 1

January 6, 1907: Patient resumed work, but was still weak.

W. B. C. 8,400.

Nuclear Count:
1 2 3 4 5
51 45 4 1

(This schedule is an example of an aniso normocytosis.)

January 14, 1907: W. B. C., 8,600.

Nuclear Count:
1 2 3 4 5
43 44 10 3

Patient was doing well and performed his duties.

January 23, 1907: Dermatitis returned, patient had chills and fever, and was put to bed.

W. B. C., 13,000

Nuclear Count:
1 2 3 4 5
80 17 3

January 26, 1907: After appropriate treatment patient felt much better.

Nuclear Count:
1 2 3 4 5
59 35 6

February 2, 1907: T. P. and R. normal. Patient was almost cured, and was allowed to go about.

W. B. C., 10,400.

Nuclear Count:
1 2 3 4 5
52 41 6 1

(Compare this count with the count of January 3, 1907.)

February 6, 1907: Patient felt very well, appeared healthy and robust, and was permitted to resume work.

W. B. C., 8,200

Nuclear Count:
1 2 3 4 5
36 49 14 1

CASE II.—Mrs. K. J. suffered for the last thirty years from locomotor ataxia.

February 6, 1907: Patient was attacked over entire right side from sixth rib in axillary line to upper one third of thigh, extending posteriorly to about two inches from spinal column, anteriorly to about three inches from umbilicus, with a severe erysipelatous dermatitis.

Blood Count: Hb. 75 per cent.

R. B. C., - - - 3,400,000

W. B. C., - - - 7,800

Nuclear Count:

1 2 3 4 5
80 15 2 4

Aniso normocytosis.

Dermatitis and general debility treated locally and internally.

February 8, 1907: Patient was doing slightly better. Dermatitis was less angry looking and less painful. T. P. and R. correspondingly better. Patient could not sleep nights on account of constant retching, although she did not bring up anything, even after ingestion of food.

February 9, 1907: Patient was attacked over left trochanter with a trophic ulcer, surrounded by an area of erysipelas about 16 inches in circumference.

W. B. C., 22,100; cells swollen, nuclei pale, neutrophilic granules dark (basophilic degeneration).

Nuclear Count:

1 2 3 4 5
82 17 1 4

Patient felt very badly, pulse hardly perceptible, 140 per minute, temperature 102.

February 10, 1907: Patient was attacked over entire body and choking sensation, which persisted for forty-eight hours, exitus took place.

CASE III.—Mr. Bvn. General condition was chronic specific meningomyelitis.

February 12, 1907: Erysipelas developed on left cheek, involving eye.

W. B. C., 13,800.

Nuclear Count:

1 2 3 4 5
70 26 3 1

February 13, 1907: W. B. C., 11,800.

Nuclear Count:

1 2 3 4 5
60 33 6 11

February 15, 1907: Patient was slightly better.

W. B. C., 10,800.

Nuclear Count:

1 2 3 4 5
70 26 3

February 16, 1907: Disease process attacked the scalp.

W. B. C., 11,000.

Nuclear Count:

1 2 3 4 5
67 20 4

February 18, 1907: Edema of scalp was marked. Temperature normal.

W. B. C., 9,600.

Nuclear Count:

1 2 3 4 5
76 23 1

February 20, 1907: Patient felt very much better.

W. B. C., 8,800.

Nuclear Count:

1 2 3 4 5
49 41 9 1

February 22, 1907: W. B. C., 7,200.

Nuclear Count:

1 2 3 4 5
58 17 5

Bath was given.

February 24, 1907: Patient was transferred to general wards from isolation rooms.

W. B. C., 7,200.

Nuclear Count:

1 2 3 4 5
44 43 12 1

CASE IV.—Mr. Brd. The general condition of patient was advanced pulmonary tuberculosis.

February 22, 1907: Patient had chills all day, loss of appetite, restlessness.

February 23, 1907: Face on left side was swollen.

patient suffered from a purulent conjunctivitis. Dermatitis was typically erysipelatous.

W. B. C., 11,800.

Nuclear Count:

1	2	3	4	5
74	28	4		

February 24, 1907: Right side of face became involved.

W. B. C., 26,800.

Nuclear Count:

1	2	3	4	5
77	18	4	1	

February 25, 1907: Condition was slightly better, but patient was very weak. There was also loss of appetite, and a severe cough commenced.

W. B. C., 17,200.

Nuclear Count:

1	2	3	4	5
82	16	2		

February 26, 1907: Patient was attacked with an otorrhœa, and the tuberculosis of lungs and larynx was very much aggravated. She could not swallow and had difficulty in taking fluid diet.

W. B. C., 21,600.

Nuclear Count:

1	2	3	4	5
84	12	3	1	

February 27, 1907: Patient could not swallow and was moribund; dyspnoea was very great.

W. B. C., 12,600.

Nuclear Count:

1	2	3	4	5
88	11	1		

February 28, 1907: Exitus at 9 a. m.

It is more than plain that as the disease subsides the "one" nuclear neutrophiles diminish in number, and as the first case shows there is a prompt increase with a reinfection. The value of such counting in a case of erysipelas, where improvements in the process, extension or reinfection, can be easily diagnosed, is not of as great a value as would be the case with a more obscure infectious disease. At any rate, by observing the behavior of the nuclei in a case like erysipelas would give us a clue as to the condition of the patient where the infectious process is of a more obscure nature. To be able to tell from the beginning what the patient suffers from by counting the percentage of nuclei is too remote a subject, as we could not tell in the first patient whether he would develop a pneumonia or any other infectious disease. We certainly could not predict an erysipelas on the first day of the chill. However, one thing is certain, and that is: No matter what the number of white blood corpuscles per cubic millimetre may be, the nuclei of the neutrophiles apparently behave in a constant and regular manner in infectious processes, or in any condition where the organism is below par, so that we have a delicate hæmic gauge whereby to distinguish an infectious process in low par states where a hypercytosis may be absent.

Naturally when one notes the marked increase in the one nuclear forms, the next thing is to assign to these cells a definite function. So far only theories were advanced, such as the bone marrow throws into the circulation young forms to meet the demand, and that the older four and five nuclear cells die; or that the disease paralyzes the further development of the cells, arresting their growth at the two nuclear and three nuclear stage, and as the

disease subsides they again gradually attain their normal full grown forms. What becomes of the four and five nuclear forms? They are most likely broken down, finally being deposited in the various repositories of the body, i. e., lymph glands, liver, spleen, etc.

To gain a more definite insight into the individual values of these different cells, I placed test tubes containing one c.c. of defibrinated blood, plus one half c.c. of a *Staphylococcus pyogenes aureus* suspension into the thermostat for one half hour at 37° C., and observed how many bacteria the one nuclear, two nuclear, etc., cells were capable of taking up. Smears were made and stained with my modification of the Jenner stain (the making of this stain will be published at a future date). Previous to placing the blood in the thermostat an ordinary enumeration of the nuclei was made.

Mr. G. Normal Nuclear Count:

1	2	3	4	5
25	46	25	3	1

Phagocytosis and Nuclear Count:

Number of nuclei:	1	2	3	4	5
Per cent. of each variety:		32	30	28	10
Number of staphylococci in all cells:		160	135	126	18
Average to a cell:		10	9	9	3.6

Mr. W. Normal Nuclear Count:

1	2	3	4	5
26	50	22	2	

Phagocytosis and Nuclear Count:

Number of nuclei:	1	2	3	4	5
Per cent. of each variety:		30	46	26	4
Number of staphylococci in all cells:		162	161	91	9
Average to a cell:		8.75	7	7	4.5

Mr. N. Normal Nuclear Count:

1	2	3	4	5
38	46	13	3	

Phagocytosis and Nuclear Count:

Number of nuclei:	1	2	3	4	5
Per cent. of each variety:		44	34	22	
Number of staphylococci in all cells:		726	489	280	
Average to a cell:		34.57	22	25.4	

Mr. X. Phagocytosis and Nuclear Count:

Number of nuclei:	1	2	3	4	5
Per cent. of each variety:		46	40	14	
Number of staphylococci in all cells:		344	208	73	
Average to a cell:		14.86	10.4	10.4	

One can at a glance see from these schedules that the one nuclear cell is capable of carrying more *Staphylococci pyogenes aurei* than the two and three nuclear forms, and that the four nuclear forms carry least of all; this in a way suggesting the youth and vigor of the one nuclear cell, as well as the phagocytic power of the twos and threes, and places the four nuclear neutrophils among the older cells, which, together with the fives, are least capable of protecting the organism, thus partially explaining the opportune increase of the one nuclear forms. It is also apparent from the phagocytosis

and nuclear count that there is a slight increase of the one and three nuclear forms, and a corresponding diminution of the twos, as compared with the normal nuclear count of the same individual.

Whereas, the bone marrow cannot be held responsible for this change, although in itself very slight, still one is at a loss to explain this phenomenon, suggesting, however, the probability that there are many other factors affecting extravascular neutrophils which must be considered in work of this kind. It may be that the two lobes of the two nuclear forms reacting to the noxious presence of the *Staphylococcus pyogenes aureus* tend to coalesce (karyoagglutination) the divided parts of the nucleus becoming karyoblastic, thus giving the impression of a one nuclear cell. Some other twos again become further developed, giving rise to an increase in the three nuclear forms.

(Work along these lines is in progress.)

ONE HUNDRED AND THIRTY-EIGHTH STREET
AND BROADWAY.

THE MAIN POINTS IN THE CLINICAL HISTORY AND DIAGNOSIS OF RENAL CONGESTION AND THE MORE COMMON FORMS OF NEPHRITIS UNACCOMPANIED BY PYURIA.*

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Since 1827, when Richard Bright's classical paper on diseases of the kidney appeared, there has been a constant effort on the part of pathologists and clinicians to fathom the relation between certain sets of symptoms on the one hand and certain pathological changes in the kidney on the other. Bright's own idea was, that there was primarily a nephritis of one type or another which caused the dropsy, albuminuria, etc., and was sometimes accompanied by cardiac and other symptoms, which he viewed somewhat in the light of complications.

Rokitansky in 1842 recognized eight forms of nephritis and was the first to describe amyloid or waxy kidney. Nine years later Frerichs assigned the variations in the pathological conditions found in kidney disease to different stages of inflammation.

1. *Hyperæmia*, where kidneys are enlarged and extravasation of blood takes place in Malpighian tufts, tubules, and stroma, and the tubules are filled with coagulated material, the epithelium itself being unchanged.

2. *Exudation*, where congestion diminishes, while exudation is much increased and found in tubules and intercellular tissue, here becoming organized later into new connective tissue. The epithelium becomes degenerated and granular, or is entirely desquamated. The tubules are filled with granular or fatty cell tissue or with hyaline material.

3. *Atrophy*, where the kidneys decrease in size to approximately normal or less, the surface becomes nodular, cortex thinned, and whole kidney hard to the touch. The tubules are dilated and filled with cell detritus or have been emptied and are collapsed. Malpighian bodies are atrophied and sclerosed or fatty.

The following year, 1852, Johnson divided ne-

phritis into desquamative and nondesquamative forms, each with several subdivisions, and considered seven varieties in all.

Traube, in 1856, described chronic passive congestion as an entity entirely apart from the hitherto recognized forms of Bright's disease.

Virchow, in his *Cellular Pathology*, contended that in Bright's disease either the tubules, Malpighian bodies, or interstitial tissue, are especially involved, and called these types, respectively, parenchymatous, amyloid, and interstitial nephritis.

Stewart, Dickinson, Klebs, who described glomerulonephritis, Weigert, and many others contributed the results of their studies and advanced classifications based thereon.

Gull and Sutton, in 1881, showed that general arteriocapillary fibrosis is associated with contracted kidney, and that a general arteriosclerosis may exist and give symptoms without any discoverable lesions in the kidneys. They concluded that this form of Bright's disease is one of the general arterial system rather than of the kidneys especially.

Many others have written from the point of view that nephritis is an event in a more general disease, and classify purely on a basis of morbid anatomy.

This introduction, brief as it is, is sufficient, I think, to show that, as Delafield¹ says, authors have looked at the disease from two points of view, that of the symptoms and that of the lesions. Some regard Bright's disease as a nephritis with attendant symptoms; others as a disease of some other tissues in the body with which a nephritis may or may not be associated. From our study of sections of diseased kidneys we can appreciate that great variation in symptoms is made possible by differences in the intensity of the pathological process going on in any one kind of tissue (e. g., tubules) in a kidney, and how completely the clinical picture may change when that inflammation subsides and another element is involved. Again, when we consider that it is probably rarely that but one kind of tissue is affected, and that almost countless variations in degree and kind of involvement may exist, it is evident that Stengel² was right when he said: "It is hopeless to attempt a classification based on minute differences in the pathological findings."

It is the method of arriving at a correct clinical diagnosis that especially interests the physician and the patient who is depending upon him. Usually we cannot directly examine the kidneys, so we must arrive at our diagnosis from a consideration of the patient's symptoms, noting as carefully such evidence as we can get from the physical, chemical, and microscopical study of the urine as we do the condition of heart, arteries, retina, nervous, or digestive systems. I call especial attention to the study of the urine because of the widespread interest aroused last year by Cabot's³ decrying its value as well as by the appearance of Emerson's⁴ scholarly and dispassionate presentation of the results of study of all cases of nephritis seen in the wards of Johns Hopkins Hospital, more than five hundred of which came to autopsy. Cabot's paper is ultraradical and contains

¹ Delafield, *Lectures on the Practice of Medicine*.

² Stengel, Albuminuria in Nephritis and Bright's Disease.

Journal of the American Medical Association, January 6, 1906.

³ Cabot, R. C. The Diagnosis of Renal Functions. *New York Med. J. C.*, May 12, 1906.

⁴ Emerson, Charles P. *Chronic Nephritis*. *Journal of the American Medical Association*, January 6 and 13, 1906.

* Read before a meeting of the Society of the Alumni of the Postgraduate Hospital, held on January 15, 1907.

some statements so sweeping as to carry their refutation with them. Stengel² says (and Emerson, Councellman, and others agree): "Taken in conjunction with the general symptomatology accurate examinations of the urine are indispensable." Emerson gives a carefully prepared report of actual conditions found, and his conclusions are of great value. In spite of many failures to recognize nephritis during life and some diagnoses of nephritis which were demonstrated at autopsy to have been wrong, his opinion coincides with Stengel's. His report on waxy casts alone should be enough to convince the most skeptical of the value of microscopical examinations of the urine. Quoting verbatim from his paper: "In our thirty-six cases in which they (waxy casts) occurred, all but three were cases of pronounced nephritis, chiefly chronic." Is not a bit of evidence that means nephritis in nine out of ten cases worth looking for?

While stating that the most brilliant display of casts is in nonnephritic conditions (that is, when there is a temporary disturbance without serious permanent lesion) he says: "Casts, however, are of much importance in following a case of nephritis or other renal disturbance. For them to be present temporarily and then to disappear entirely means, no matter how alarming their number and variety may have been, a temporary and probably harmless disturbance; for them to continue days, weeks, or months, no matter how insignificant the onset of the trouble, means chronic nephritis; and for them to remain two years, means, it is said, an incurable case. In a case of nephritis, for the number to diminish and to include hyaline and finely granular casts means a subsidence of the acute process, while the reappearance of the epithelial coarsely granular and bloody casts means a flare up." This preliminary defense of urine examinations may not seem necessary; but it can do no harm to fortify ourselves a bit lest we absorb too much of Cabot's pessimism. My own opinion of the value of urine examinations is based on the experience of such men as Emerson and Brooks⁶ and approximately five thousand personal examinations. More than one thousand of these have been made in my capacity of assistant to Dr. Edebohls, at whose operations, as well as at my own, I have often had the living kidneys under my sight and touch to prove the correctness or error of my diagnosis.

In making urinary examinations the specimen should be part of a twenty-four hour collection. The whole quantity should be preserved in a clean covered vessel of some kind, and should be thoroughly shaken or stirred so that the sediment will be equally distributed throughout the urine when a sample for examination is taken out. The addition of a few drops of chloroform after each voiding will usually prevent too much decomposition and will not interfere with the chemical tests usually employed.

There are four broad types of Bright's disease that give a sufficiently sharply defined symptom complex to make a diagnosis possible in a majority of instances. These are: (1) Acute nephritis; (2)

chronic parenchymatous nephritis—(large white kidney); (3) chronic diffuse nephritis—(secondary contracted kidney); and (4) chronic interstitial nephritis—(arteriosclerotic kidney). We will also consider the kidney of (1) chronic passive congestion, and (2) amyloid infiltration.

CHRONIC PASSIVE CONGESTION.

The most common ætiological factors are: (1) Chronic heart disease; (2) pulmonary disease, especially chronic emphysema; (3) long continued pressure on vena cava or renal veins by tumors, pregnant uterus, or ascitic fluid; (4) excessive mobility of the kidney. The first three factors mentioned need no comment. The fourth, excessive mobility, I wish to especially emphasize, since mobility of the right kidney particularly is of such common occurrence, especially in women; Edebohls⁷ statistics showing that the condition is present in fully twenty per cent. of all women. Inasmuch as chronic passive congestion is often followed by a more or less severe chronic nephritis, it is important that a movable kidney, even if otherwise giving no symptoms, be anchored or kept still in some way if the urine continually shows evidences of congestion.

The clinical symptoms of simple chronic passive congestion itself are confined to the urine, but in any given case we may have also the symptoms of a primary disease. In a typical case the urine is diminished in quantity; dark, of high, or at least normal specific gravity. The albumin varies from a faint trace to considerable, varying in heart cases with condition of compensation. Total solids are normal. Microscopical examination shows hyaline casts, rarely granular, innumerable mucous threads and cylindroids, a few isolated red cells, occasional leucocytes, a large amount of urates, and often uric acid and calcium oxalate crystals. Hypertrophy of heart and œdema do not occur unless as part of primary disease. Uræmia occurs extremely rarely if at all.

The diagnosis is made from the urinary findings. The large numbers of mucous threads and cylindroids, often forming a perfect network, together with a few hyaline casts and red cells and trace of albumin in a urine of high specific gravity make a fairly distinctive picture.

ACUTE NEPHRITIS.

This, as the name implies, is an acute inflammation of the kidney. Inasmuch as at autopsy all grades of injury to the renal structures are found, from slight cloudy swelling to the severest grade of diffuse inflammation with exudation and extravasation of blood, it is not surprising that the clinical evidences of the morbid processes are equally manifold; hence the variation in urinary findings as well as in general symptoms. To my mind it is pedantic to say, as some do, that the mild transitory cases should not be called acute nephritis, but should be designated as renal irritation, or given some other title which may give us a false sense of security. We call an acute inflammation of a bursa an acute bursitis, and whether it is a mild or severe case makes no difference in our nomenclature. An acute nephritis is essentially a short process; for custom decrees that any inflammation which persists beyond a

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certain reasonable amount, shall be classed as sub-acute, subchronic, or chronic. This quibbling may be all right for the pathologists, but not for the physician, who is caring for a patient having an acute infectious disease, and is watching for signs of kidney complication. The danger of overlooking an apparently slight impairment of kidney function in these cases becomes especially clear in view of Emerson's declaration that of one hundred and nine cases of acute nephritis thirteen unsuspected cases were found at autopsy; while of twenty-three cases where autopsy showed extreme parenchymatous degeneration without other evidences of nephritis, albumin and casts were present in small amount in several cases and entirely absent in two. Hence we see that in cases where acute nephritis is apt to supervene, even the slightest evidences of renal impairment merit our careful attention.

The most frequent causative factors in acute nephritis are: (1) Acute infectious diseases, especially scarlatina; (2) septic diseases, especially acute ulcerative endocarditis; (3) pregnancy; (4) exposure to wet and cold; (5) extensive burns; (6) acute poisoning; and (7) severe physical exertion.

In some cases epithelial degeneration is the principal anatomical result, while in others exudation is marked. The glomeruli are almost always more or less affected, and extravasation of blood may occur. Clinically, the acute nephritis may be so slight as never to give any recognizable symptoms other than a slight albuminuria and a few casts which disappear in a few hours or days, or it may be so severe as to completely overshadow any other condition which was receiving attention, and prove rapidly fatal.

The onset of a severe case of acute nephritis is usually sudden, and dropsy may occur within twenty-four hours; but occasionally the disease begins insidiously. The most characteristic symptoms in a well marked case are the urinary changes (Osler, Strümpell, and others). There may be at first complete anuria, but more frequently the urine is scanty, dark, cloudy (only if much fatty degeneration, dark reddish or port wine color if much hæmorrhage), and of high specific gravity. Albumin is usually abundant, urea, chlorides, and phosphates are much reduced. Microscopically we may find many hyaline, epithelial and blood casts, often granular and fine fatty casts, and in some instances a perfect shower of all kinds of casts, including coarse granular and waxy. On the other hand, sometimes with extensive involvement of the entire kidney structure casts may be practically absent, as was shown in some of Emerson's cases. Renal cells, often fatty, are usually abundant, and may be present in enormous quantities (so called acute desquamative nephritis). Red blood cells are almost invariably present in small or fairly large amount. Emerson never found the very great numbers of red cells usually credited to the hæmorrhagic form of this disease. Leucocytes are usually few, unless a true septic process exists in the kidney.

As regards symptoms apart from the urinary changes, chilliness or true chill may usher in the disease. Pain and tenderness in the kidney region, nausea, and vomiting may occur. Fever may or may not be present. It is more apt to be found in children than in adults. Anæmia is usually an early

and marked symptom. The pulse is often tense and full and at first may be slowed, but later is usually rapid. Hemorrhagic retinitis and nosebleeds may occur. There may be dilatation of the heart. Hypertrophy is usually absent, but may appear as case progresses toward chronicity. The one practically constant general symptom is dropsy. This may occur almost at once or after several days. It is usually first detected as puffiness of face or ankles. It may affect any or nearly all parts of the body in slight or extreme degree, and is most marked in cases following cold or scarlatina. Usually all parts of the body are involved to some extent, but in some cases œdema of the extremities may be slight, while hydrops of the body cavities is very pronounced, and vice versa. If ascites and hydrothorax are present, dyspnoea, severe bronchitis, or pulmonary œdema may appear, though this latter symptom is usually due to failing heart.

Severe vomiting often gives the first warning of uræmia, a very frequent symptom in the acute nephritis following scarlatina or exposure to cold, not so common under other circumstances. This unfortunate event may come at any stage of the disease, and in some cases a uræmic convulsion may be the first sign of trouble noticed. This is especially apt to be true in cases of pregnancy that have not been properly watched.

The diagnosis of acute nephritis in typical cases is easy. The marked urinary changes, rapid onset of œdema, and the history of the case usually give indubitable evidence of the source of trouble. Remember, however, that an acute exacerbation of chronic nephritis may give exactly similar urinary findings, so look carefully to the heart arteries and other organs before making a diagnosis. This applies especially to cases where the ætiology is obscure. The mild cases do not present so simple a problem, but the presence of albumin and even a few hyaline, epithelial, and blood casts means at least a mild acute process. If there is no evidence of chronic change in heart or arteries they must be watched, and any increase in arterial tension noted. Meanwhile the urine should receive equally careful examinations. All these things must be done if we are to get as early a warning as possible of impending trouble, otherwise we may be confronted by a case of uræmia which might have been prevented if the disturbance in kidney function had been recognized sooner.

CHRONIC Nephritis

Before taking up the chronic forms of nephritis we may as well admit at the outset that it is often impossible to make very accurate clinical diagnoses of the exact pathological changes which have taken place in a long diseased kidney.

The further we get away from the strictly parenchymatous types of nephritis the less we can depend upon the urine examinations alone to determine the actual pathological condition of the kidney, though they give us an approximate measure of its functional value. It is in these chronic cases particularly that a careful estimate of the changes in other organs and repeated examinations of the urine are necessary before venturing a positive diagnosis.

For clinical purposes we may divide these chronic cases into two classes: (1) Chronic parenchyma-

tous nephritis (large white kidney of Wilks); and (2) those usually accompanied by moderate heart hypertrophy, moderate, often intermittent, dropsy, and some evidence in the urine of parenchymatous change (chronic diffuse nephritis, secondary contracted kidney, small white kidney).

As contraction progresses in these cases the clinical picture approaches that of the third type associated with arteriosclerosis and great heart hypertrophy, chronic interstitial nephritis (arteriosclerotic kidney, contracted red kidney).

CHRONIC PARENCHYMATOUS NEPHRITIS.

This may sometimes occur as a sequel of acute nephritis, hence was considered by Frerichs and others of his time as "the second stage of Bright's disease." Later Wilks and others showed that the disease, as a rule, begins insidiously and exhibits a chronic character from the start; and that only occasionally, as after scarlatina, can an acute stage be recognized. Syphilis, tuberculosis, malaria, frequent exposure to cold and wet, and unsanitary surroundings are among the recognized ætiological factors. In many cases no assignable cause can be found. It occurs most frequently in young adults; occasionally in children, here usually following the acute nephritis of scarlatina or other infectious diseases. When following an acute nephritis, the symptoms of the acute process gradually merge into those of the chronic type. Of these symptoms I would mention especially persistence of the dropsy, marked anæmia, and a constant large amount of albumin in the urine. In addition, coarse granular fatty and waxy casts appear or are relatively greatly increased, and the epithelial cells are more uniformly fatty. Under other circumstances, with insidious onset, the disease may make considerable progress and the degeneration in the kidney may be marked before the condition is suspected.

Here the first signs of the disease noted may be of a general type; pallor, anorexia, headache, slight nausea, passing without much notice by the patient until puffiness of the face or eyelids or slight swelling of the ankles induce him to consult his physician, and these antecedent conditions are brought out in the course of examination. At first the dropsy may disappear after a night's rest, but later it becomes a constant and very distressing symptom. It involves the whole body and is especially pronounced in the serous cavities. Rarely dropsy is slight or even absent.

When the disease is firmly established the urine usually presents the following characteristics: The quantity is less than normal, often scanty, and varying between 250 and 750 c.c. daily. It is usually dark in color and of cloudy or smoky appearance. The specific gravity is normal or high, and total solids are diminished. Albumin is almost constant and very abundant, averaging eight tenths to one per cent. quantitatively, and running in reported cases (that of Bartels, for example) as high as six per cent. Microscopically, we find numerous casts of all kinds, especially coarse granular, fatty, and waxy. Fatty renal cells, the so called fat granule cells and fat droplets, abound. Red blood cells are found in small or (in the case of chronic hæmorrhagic nephritis) in large numbers.

There may be few or fairly numerous leucocytes. Urates are abundant.

In Emerson's experience the chronic hæmorrhagic type gives relatively few casts. My own experience in a case of that kind (in which I decapsulated the kidneys April 17, 1905, and will make further report at some future time) was precisely similar; but the urine passed the day after decapsulation showed myriads of casts of every kind. Brooks spoke of the specimen as "a museum of casts."

Regarding other symptoms, cardiac, arterial, and pulmonary changes may be noted similar to those mentioned under acute nephritis. Retinitis and uræmia occur fairly frequently, though not so often as in interstitial nephritis.

Many writers consider the lesser symptoms, such as headache, nervousness, occasional muscular twitches, and slight gastrointestinal derangements, as mild uræmic manifestations; and the more serious disturbances up to typical uræmic convulsions and coma as due to gradually increasing grades of the uræmic poisoning.

The diagnosis is easily made in typical cases. The history of the case, the marked pallor, œdema, and great quantities of fluid in the serous sacs, together with a decreased quantity of urine showing a large amount of albumin, coarse granular, waxy and fatty casts, and fatty renal epithelium, make a clinical picture that is fairly distinctive. It is important to remember, however, that the urine of acute nephritis may present similar physical and microscopical characteristics in occasional instances, though it is seldom that coarse granular and waxy casts will be present in any great numbers in an acute case. Acute exacerbations of an indurative (red or white contracted kidney) nephritis may, however, furnish the waxy and coarse granular casts that have been stored up in the tubules, so that here as in other atypical cases the general systemic condition must be taken into account, and repeated urine examinations made before giving a positive diagnosis.

CHRONIC DIFFUSE NEPHRITIS (Secondary Contracted or Small White Kidney).

This type of nephritis was formerly considered as always secondary to the chronic parenchymatous variety, hence was called the "transition between the second and third stages of Bright's disease." At the present time, however, many trustworthy observers consider that it may and usually does occur as a primary independent form. Roughly speaking, the anatomical condition is one in which parenchymatous degeneration and marked connective tissue proliferation go hand in hand. The kidneys may be enlarged or normal in size at the start, but gradually contraction takes place until finally it may be more extreme (as in Emerson's cases) than commonly found in the ordinary arteriosclerotic type.

The ætiological factors are the same as enumerated in chronic parenchymatous nephritis.

The symptoms vary approximately with the degree of contraction, and the clinical picture may be anything from that of chronic parenchymatous to chronic interstitial nephritis.

In a case seen at a fairly early stage the urine considered fairly typical would be about as follows: An increased or at least normal amount, pale, specific gravity normal or below that point. Total

solids diminished. Albumin usually moderately abundant, but often scanty. Microscopically, possibly all kinds of casts, more frequently the plain and epithelial hyaline and fine granular varieties. Also a few renal elements and almost invariably a few red blood cells. Later the urine usually becomes still more dilute. Albumin is found merely in traces or not at all, casts disappear, except hyaline and fine granular, and these are present in small numbers. A slight circulatory or other disturbance of the renal balance at any time may cause considerable albumin and a deluge of casts to appear. Emerson found that just before death from this form of nephritis an acute process often appears, with a diminished urine of high specific gravity and an increase in albumin and casts; while in other cases where it is not the renal symptoms which predominate at death the amount of urine passed may become enormous.

Of the general symptoms, dropsy is usually moderate in amount, often intermittent, and may almost or entirely disappear. When returning late in the disease it is usually the sign of an acute exacerbation or failing compensation in the heart. Changes in the arteries and hypertrophy of the heart are present in some degree almost invariably, and increase in intensity as the disease progresses. Uræmia with its various prodromata, especially severe headaches and gastric disturbances, almost always appears sooner or later unless the patient dies early in the course of the nephritis from some intercurrent disease.

Positive diagnosis in any but fairly typical cases is difficult, and many cases are not recognized at all or only at autopsy. When the condition follows chronic parenchymatous nephritis, an increase in the quantity of urine, practical disappearance of coarse granular, waxy and fatty casts and increase in hyaline and fine granular varieties, together with a lessening amount of albumin, while the dropsy and other general symptoms persist, allow the diagnosis of contracting kidney to be made with considerable certainty. In other cases the urinary symptoms alone are apt to be very misleading, and after perhaps a rather long period of observation the general symptoms furnish the key to the situation.

CHRONIC INTERSTITIAL NEPHRITIS (Arteriosclerotic Kidney, Primary Contracted Kidney, Indurated Red Kidney).

Whatever our attitude concerning Bright's disease as an entity in the types considered thus far, the late onset of this form of the disease with the almost invariable history of years of antecedent high arterial tension, arteriosclerosis, more or less disturbance of the heart, and interference with function in other parts of the body, the slow creeping character of the pathological process, and the trend of expert opinion almost force upon us the conviction that the chronic interstitial nephritis is usually but a part of a general degenerative process. This may be the result of defective metabolism, the constant presence of irritating substances in the blood, as in chronic alcoholism or gouty conditions, or part of the gradual impairment of the tissues of the body incident to advancing age. At any rate, it is said to occur but rarely before the age of twenty-five, occasionally between twenty-five and thirty-five, and

is frequent from forty to sixty. Many believe with Councilman, Osler, and many other authorities that there is practically always some evidence of interstitial and parenchymatous change in the kidneys by the time we reach the age of fifty. In chronic interstitial nephritis the morbid process is essentially a slow degeneration (with gradual replacement fibrosis) of the secreting structures and a marked increase in the connective tissue elements of the vessels and stroma generally.

The most prominent of the factors usually considered as causing or accompanying this type of nephritis are: (1) General arteriosclerosis; (2) chronic intestinal autointoxication; (3) alcoholism; (4) syphilis; (5) mental strain; (6) lithiasis; (7) gout; (8) lead poisoning; and finally (9) any disease or derangement of function in the body which results in the long continued presence of irritating substances in the blood.

The classical urine is very abundant (2,000 c.c. upwards), very pale, clear, of very low specific gravity (1.002 to 1.012), and the total solids (urea especially) greatly diminished. Albumin is scanty, usually but a trace, and may be entirely absent for long periods of time. Microscopically we usually find a few small plain and epithelial hyaline, occasionally fine fatty and granular casts. Often it is very hard to find any casts at all even in centrifuged specimens. There are usually a few isolated red cells often almost colorless (so called phantom cells), and rarely a few renal cells.

In such a kidney the disturbance caused by mild infectious diseases, such as a common cold, may give considerable, though usually transient, albuminuria and many casts of all kinds. In many cases, however, even with extreme degeneration of the tubular epithelium and marked contraction of the kidney the urine is absolutely normal, so far as we can judge; though without doubt observation for any considerable length of time would show some decrease in the average daily output of solids, and other evidences of disease. Large increase in albumin and casts may appear with failing heart. An acute process as a terminal event is less frequent in these cases than in the secondary contracted kidney.

General Symptoms.—Hypertrophy of the heart is almost invariably present in these cases, and often reaches an extreme grade. The left ventricle is particularly affected, but all parts may be involved. A persistent high tension pulse is one of the early and valuable symptoms. The arteries are almost invariably sclerosed, and miliary aneurysms with rupture in the brain are not infrequent.

Retinitis is the rule, and progressing dimness of vision may send the patient to the oculist who may thus be the first to diagnosticate the disease. Temporary blindness may occur without noticeable retinal changes.

There may be slight puffiness of the ankles, but dropsy is unusual except as an evidence of broken compensation. Bronchitis and other respiratory symptoms often occur, but the cases of pleurisy and acute oedema of the lungs or glottis usually mean heart failure. Intense itching, burning, and eczema of the skin are often seen. Ringing in the ears and other auditory symptoms are occasionally present.

Most common aetiological factors.	CHRONIC PASSIVE CONGESTION.	ACUTE NEPHRITIS.	CHRONIC PARENCHYMATOUS NEPHRITIS.	CHRONIC DIFFUSE NEPHRITIS.	CHRONIC INTERSTITIAL NEPHRITIS.	AMYLOID KIDNEY.
Quantity.	Diminished.	Scanty.	Usually less than normal.	Abundant or at least normal.	Usually very abundant.	Chiefly in cases with the type of a compensating phlogistic and a sub-acute.
Color.	Normal.	Dark, cloudy, or brownish.	Usually high.	Usually high.	Usually high.	Usually high.
Specific Gravity.	High if much congestion.	Diminished.	Diminished.	Normal or high.	Very pale, even.	Pale yellow, clear.
Total solids.	Normal.	Diminished.	Diminished.	Normal or high.	Very pale, even.	Abundant, often more than normal.
Albumin.	Usually slight; if due to heart trouble varying with condition of circulation.	Usually abundant.	Usually abundant.	Usually moderately abundant, but often scanty.	Usually scanty, often more than normal.	Usually abundant, often more than normal.
Microscopical Examination shows:	If urine casts, rarely granular, numerous, mucous, and cylindrical, low red cells and leucocytes, large amount of albumin, often in oval and circular casts.	Many hyaline epithelial and blood casts, often granular and cylindrical, low red cells and leucocytes, large amount of albumin, often in oval and circular casts.	Many hyaline epithelial and blood casts, often granular and cylindrical, low red cells and leucocytes, large amount of albumin, often in oval and circular casts.	Passing all kinds of casts, usually small, hyaline, granular, and cylindrical, low red cells and leucocytes, large amount of albumin, often in oval and circular casts.	Usually scanty, often more than normal.	Usually abundant, often more than normal.
Hypertrophy of heart.	Dependent upon primary disease; if present is especially marked in lower extremities.	Almost always absent; if present it develops as case progresses (Oster, Strumfeld, Brooks).	Usually present, or else develops as disease progresses (Oster, Strumfeld, Brooks).	Usually present.	Present almost without exception.	Absent except in amyloid contracted kidney.
Oedema.	Dependent upon primary disease; if present is especially marked in lower extremities.	Pronounced, seldom wholly absent; especially marked in scurvy and exposure to cold and wet; location varies; usually general.	Pronounced, especially as hydrops of body cavity.	Moderate, often intermittent; usually as hydrops of body cavity; principally, but also more or less swelling of extremities, after contraction of heart, unless a little of acute excretion of acute excretion of acute excretion.	Usually slight or none, but less manifestation of heart failure in the disease.	Usually present in some degree, occasionally marked or absent.
Uraemia.	Usually absent; certainly rarely, if ever, present.	Frequent, especially after scurvy and exposure to cold.	Moderately frequent.	Frequent.	Very frequent.	Usually absent except in contracted kidney.
Other prominent symptoms.	Venous congestion in other parts of body dependent upon primary disease; in movable kidneys, indigestion, nervousness, chronic appendicitis, dull pain in kidney region, constipation, etc.	Usual symptoms of primary disease; anaemia; rarely a haemorrhagic retinitis.	Marked pallor; anaemia, retinitis, bronchitis, and symptoms of pathological change in other organs.	Severe headaches, marked retinitis; other symptoms varying between those of chronic parenchymatous and chronic interstitial types.	Mild uraemic symptoms, such as headache and slight gastrointestinal disturbances in a long time present for a long time before acute uraemia becomes practically constant. Renal uritis is very frequent.	Usually little or no retinitis or arteriosclerosis except in contracted kidney. Enlargement of liver and spleen. Symptoms of primary disease.

preciable enlargement in uterine size, followed by decided bleeding with subsequent decrease in the size of the organ. Upon examination the fundus was found to be two fingerbreadths above the navel, cervix not obliterated, undilated and rigid. Pulse 100. Uterus was evacuated of two foetuses about four and a half inches in length with a mass of placental tissue and liquid blood. Convalescence normal.

CASE III.—Patient of Dr. C. M. Burk; she has had six children and one miscarriage. By history she was about seven months pregnant, but in all probability she was further advanced. A hæmorrhage had taken place in the early morning of the day of my first visit. Upon examination the cervix admitted index finger and was not obliterated at all. The membranes had been ruptured, and no pain was complained of at any time. Pulse 115, general condition good. There was marked downward bulging of anterior vaginal wall with decided tension and sensation of doughiness. This gave rise to a primary diagnosis of previal placenta, but was in reality not caused by the presence of placental tissue but by a collection of blood in the lower segment of the uterus. After admission to the Maternity Hospital dilatation of the cervix by bags was attempted, her condition seemingly admitting this conservative method, but within an hour her pulse rose to 150 and, the cervix having dilated to a sufficient degree an attempt was made to deliver at once by podalic version. The child was found to be so deformed, however, that turning was impossible and a mutilating operation was finally required (craniotomy with partial abdominal evisceration). Patient died a short time after completion of the delivery. There was no post partum bleeding. No post mortem examination was obtained.

To these three cases I now am in a position to add two more:

CASE IV.—Mrs. K., referred to me by Dr. Joseph Sailer. The patient was a thirty-five year old primipara, extremely nervous but well nourished. Pelvic measurements were normal. On the first examination the foetal movements and heart sounds were easily determined. The urine was free from albumin. Position of the child left occipitoanterior. Patient menstruated once and possibly twice after becoming pregnant. In July, at the time of the first examination the patient considered herself to be much nearer to term than my examination gave me reason to believe her to be. Her pregnancy progressed normally until the eighth of August, upon which date I was summoned as she believed herself in labor. The symptoms presented were pain in the epigastrium and dyspnœa. Foetal movements were greatly accelerated at this time but were not felt afterwards. The pain was continuous and almost entirely limited to the epigastrium. Great difficulty in breathing was complained of, but the patient's color was unchanged, her pulse was good and its rate normal. The chest examination showed nothing abnormal, but there was a slightly abnormal sensitiveness over the abdomen. The cervix was not dilated, but was partially obliterated. Introduction of the finger into the lower portion of the cervix gave rise to a moderate discharge of blood. Foetal movements and heart sounds absent. The symptoms presented up to this time were therefore those of slight bleeding, i. e., not more than attempts to dilate a pregnant cervix would explain, and pain, which was thought to be due to labor. Examination, however, at once revealed that the woman was not only not in labor but that she was probably not yet at full term. The character of the pains, moreover, was markedly different from that exhibited in the early stages of true labor, in that it was very severe, was without intermission, and was felt exclusively or at least most markedly in the epigastric region. Moreover, there

was no sign of a previal position of the placenta, the only other condition likely to seriously embarrass the diagnosis in so far as the occurrence of hæmorrhage is concerned, and therefore a probable diagnosis of premature detachment of the placenta could be assumed at a time when the patient was in good condition, and with this diagnosis in mind preparations could be made to watch the case with the greatest care in order that prompt interference might be practised if it should at any time be demanded.

The next day the patient reported that she had flowed a good deal during the night and this was substantiated by an examination of the dressings. No heart sounds or foetal movements were appreciable. She now gave a history that two days ago she received a fright while driving with her husband, and that she gave a start and thought that foetal movements ceased soon afterwards. She was driving in a runabout and passed under a railroad bridge just as a train passed over it. The horse was a very quiet animal and was not in the least disturbed by the noise, but the patient was much frightened momentarily. She did not jump out of the wagon, however, but remembers that she made a quick motion with her body. For the next four days there was more or less bleeding, and on the 18th of February labor came on, and a slightly macerated and undersized child was born. The cord was once around the neck. The placenta showed a large clot covering half of its surface and causing a marked depression of the maternal surface of the organ. Unfortunately the specimen was not examined for a considerable time, due to unavoidable causes, so that the report of the pathologist can not be accepted as final. Fatty degeneration was the only condition detected which was of course to be expected normally at term. As, however, the lesions are most usually found in the decidua, the blood collecting between the chorion and decidua, a microscopical examination would probably have resulted negatively. The macroscopical examination of the placenta showed an organ apparently normal in size and weight, but covered over one half of its maternal surface by a blood clot intimately connected with its tissue and which by its bulk had caused decided compression.

CASE V.—(Report furnished by Dr. J. Watson Martindale of Camden.) Dr. M. was called in the emergency and found the patient lying upon a couch with her clothing drenched with blood. The history given him was that the woman was in the eighth month of pregnancy and that while standing upon a chair in order to hang some pictures, she had become faint and that this was followed by the hæmorrhage.

The woman presented a very weak and rapid pulse and her appearance was blanched. Both these last mentioned symptoms were more marked than could be explained by even the decided amount of blood lost externally. The head was found to be presenting and the os would admit three fingers, the membranes were unruptured and there were no labor pains. Within a few minutes she had several syncopal attacks. Dr. Martindale at once ruptured the membranes and this maneuver checked the outflow of blood as the head entered the pelvis at once. The pulse now improved slightly, and the cervix was manually dilated and forceps applied, a dead child with a collapsed cord being easily delivered. The placenta was delivered with the child, lying in fact upon its buttocks. A tremendous gush of blood immediately followed, but there was no fresh bleeding from uterine atony, the organ con-

¹ The importance of the early tentative diagnosis in these cases is evidenced by a fatal unreported case occurring in a neighboring town, in which the patient, suffering from severe pain of the character described, but with no signs of external bleeding, was allowed to reach the stage of profound general exhaustion before the possibility of the true state of affairs suggested itself to her attendants.

tracting firmly at once. The patient died within an hour after being first seen.

Separation of the placenta from its normal situation above the contraction ring of Barbour, before the birth of the child, is a condition which occurs more frequently than is generally supposed. Fortunately it is often of a mild grade and does not occur until labor is far advanced and is thus attended with no bad results to either mother or child and indeed is often not diagnosticated. However, as shown by the cases reported here, it may be an accident fraught with the gravest danger to the child and also to the mother. Its early diagnosis is often so difficult, due in great measure to the insidiousness of its development, that it is well always to keep in mind the possibility of its occurrence, and it is with the idea primarily of impressing two of the earlier symptoms that this report has been made.

A word as to the ætiology of the condition may not be out of place. It may be briefly stated that the basic cause is an endometrial lesion resulting either in a less firm attachment between placenta and uterus, or in an increased tendency to rupture in the walls of the placental vessels in the area of the decidua basalis. It has also been found that structural kidney disease or even the so called "kidney of pregnancy" are associated more or less frequently with placental separation, and this may have a decided ætiological significance as explaining the development of hæmorrhage here as in other regions of the body. A certain percentage of cases may, it is true, be explained upon mechanical grounds; as those separations taking place after the birth of the first child in cases of twins, and also in some cases of hydramnion. These are, however, usually of less import than the previously mentioned ætiological class, as while the life of a child may be sacrificed in some instances, that of the mother is but rarely endangered. It is hardly needful to state that the great rôle ascribed by some authorities to trauma of a slight nature is not a tenable theory, except as injury may in rare instances act as an exciting cause.

The diagnosis of placental separation depends most usually upon a series of symptoms, none of which are characteristic of the condition when taken alone, until so much time has elapsed that the patient's life may be in great danger. It is therefore of the greatest importance that the practitioner be on his guard to detect early signs of trouble. It is manifestly better to be needlessly careful than to endanger life by waiting for a distinctive symptom complex to develop. The symptoms may be mentioned briefly as follows: Collapse; pain of a varying degree from a feeling of slight discomfort to that characterized as agony; absence or extreme weakness of labor pains; marked distention of the uterus (complete or partial concealment), well shown in Case II reported by me; a discharge of blood (absent rarely throughout, but when present may only become manifest too late to be of value); presence of an accessory tumor (not at all constant); serous vaginal discharge due to the expression of blood serum from uterine clots (seen in some cases of concealed bleeding and considered by Goodell as of probably greater fre-

quency than reports would indicate, since blood serum will pass where blood can not).

It is especially to be noted that the first symptoms observed may simulate an attack of flatulent colic. As in my previous paper I desire to emphasize the importance of pain of this nature occurring during the latter part of pregnancy. In a considerable number of reported cases mention is made of this symptom, the tendency primarily being to consider it due to indigestion or to labor. In both Goodell's fatal case and in my fourth case it was present to a marked degree.

The differential diagnosis is at times difficult between pain due to a prematurely separated placenta, acute indigestion and true labor. From acute indigestion (flatulent colic) it may generally be distinguished by its severity, while the differential diagnosis from the pains of labor is to be made by a vaginal examination, often disclosing the fact that the woman is not in labor, and also by its continuous nonremitting character. Moreover, the fact that the greatest intensity is felt in the epigastric region or just below and the absence of uterine contraction or advance of the fœtus will serve to sufficiently distinguish these aberrant pains from true labor. It is true that many cases do not show this symptom, but it is frequent enough to warrant its importance being born in mind. No woman developing pain of this type should be treated carelessly. In the vast majority of instances its presence is occasioned by a distention of the uterus, due to extruded blood at the placental attachment. In the fourth case reported in this paper its diagnostic import was very markedly shown, it being the only symptom elicited until a vaginal examination was made, when a very moderate amount of blood was indeed encountered, in no way sufficient, however, to establish even a tentative diagnosis. The conjunction of the two symptoms, namely the pain and the bleeding did, however, render the diagnosis highly probable, even in the absence of any constitutional signs. The importance of an early diagnosis need not be insisted upon, since it is manifest that if the attendant waits until the classical symptoms of the condition are in evidence, namely shock, palpable uterine enlargement or free vaginal bleeding, that the mother's life is placed in jeopardy, while on the other hand prompt recognition of a possible diagnosis based upon these early signs renders appropriate treatment possible, as soon as indicated.

Before considering the question of the proper treatment of these cases it is necessary to remember that no one form of procedure is applicable to all. In many instances the condition is of slight moment; indeed there is evidence that in some cases spontaneous cessation is possible before destruction of the fœtus has occurred. The points to be kept in mind, however, in discussing the subject are that we have no control over the bleeding until the child is delivered; that a seemingly mild case presenting no signs of constitutional effect on the part of the mother may suddenly become grave from an increase in the area of separation; that the amount of blood actually lost is not to be judged alone from the amount of external bleeding, and finally, that mild cases, often without constitutional

may be a source of great danger to the fetus.

In this class, the treatment of these cases it is well for the sake of clearness to divide them into two classes; first, those occurring during labor, and second, those occurring before its advent. In the cases of the first class, if labor is progressing satisfactorily there probably will not be any indication to interfere, except where necessary to save the life of the child. Here the method of treatment to be adopted will depend upon the stage of the labor at which the signs are first manifested. If early in the first stage it is my opinion that it is better to preserve the membranes and to insert a dilating bag, in order to hasten dilatation as much as possible. I personally would not feel justified in performing any major operative procedure in the interest of the child alone in such a case, since in my opinion the chances of success are too poor to warrant the increased maternal risk. Of course cases may occur, in which active interference is demanded for the safety of the mother, and here manual, or probably better instrumental dilatation must be done, with a subsequent forceps or version according to the indications. In cases in which the maternal life is threatened I would resort to craniotomy with less hesitation than ordinarily, as the chances are very greatly against the child being still alive under such circumstances.

On the other hand, the second group of cases, occurring before the advent of labor, quite frequently demand active surgical interference to save the mother's life. I would not be misunderstood as intending to imply that the methods advocated for the previous class may not often be adequate here also to meet the indications, in so far at least as the maternal life is concerned, but what I do desire to emphasize is the fact that placental separation, occurring before labor, may readily become a most urgent and anxious obstetrical accident. The cervix is closed, is not at all or but slightly obliterated, and is frequently found rigid throughout its length, this rigidity being often enhanced by the presence of scar tissue the result of old lacerations. Under such circumstances the choice of treatment becomes a very anxious question. In this group of cases I believe that all purely expectant treatment is out of place. Undoubtedly some cases of this type will pass to safety under the use of the tampon, together with the rupture of the membranes, but any one who trusts entirely to the nonoperative treatment of these severe cases will have cause sooner or later for regret. I believe that the tampon is only to be used as an emergency measure, while preparations are being made for other active treatment, and I am fully convinced that rupture of the membranes is to be avoided until dilatation has reached a point where further operative procedures are possible, particularly if the case is treated expectantly. If operative treatment is decided upon at the start the importance of the membranes as a dilating force may of course be dispensed with. In a case of this character presenting decided hæmorrhage, either external or internal, with or without constitutional signs of impending collapse, the cervix being found dilatable, it is proper to attempt its dilatation by the hand or better instrumentally with rapid deliv-

ery of the child afterwards if necessary. The point is, that no case is safe until dilatation has been secured, after that the expectant plan may have a place, but not before. If, however, the cervix should be found rigid and relatively undilatable, that is, that its dilatation would take longer than the exigencies of the case would warrant, the attempt must be given up and more rapid means of delivery resorted to. If the cervix is obliterated, at least above the portio vaginalis, deep cervical incisions, according to the Dührssen method, are justifiable, but if it be unobliterated no such means should be employed. Dührssen himself in his papers upon the subject makes it very clear that if there is not full obliteration of at least the supravaginal cervix, the case is not suitable for the deep incisions, but that a vaginal Cæsarean section should be substituted. We admit that vaginal Cæsarean section is very good treatment in a hospital with light, assistance, and a full armamentarium, and in the hands of an operator skilled in this method of attack, but we submit that even under these conditions fatalities have been noted from atonic bleeding after delivery, and that other cases have been saved from death only by prompt vaginal hysterectomy. We are, moreover, of the opinion that a man not skilled in major vaginal surgery will do better in these relatively rare cases of unobliterated rigid cervixes associated with alarming bleeding to perform the operation of abdominal Cæsarean section, as we do not consider that the comparative difficulty of the two operations is a matter admitting argument, particularly when the difficulty of obtaining proper assistance and light is considered.

My plea is, therefore, in brief: First, that aberrant pain and unexplained bleeding, even if slight, during pregnancy should always suggest the possibility that placental separation is taking place. Second, that such cases should be watched with the greatest care. Third, that as soon as the provisional diagnosis is moderately certain, an active interference should be practiced up to the point of the production of an amount of cervical dilatation sufficient for immediate delivery. Fourth, that in the rare cases in which the rigid unobliterated cervix is encountered, together with severe bleeding, that valuable time should not be wasted, but that either a vaginal or a classical Cæsarean section should be performed according to the predilections and circumstances of the operator.

—SOUTH FOLLEN H STREET—

MILK AS A CARRIER OF INFECTION.*

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While tuberculosis is the only disease which man and the bovine species have in common, cows' milk acts as a vehicle for the exciting causes of a number of man's most common disorders; and since these causes are for the most part not present in the udder, it follows that they must be introduced into the milk after it leaves the teats.

It is not my intention to attempt a discussion of the probable or possible causal relations of tubercu-

*Read before the Public Health Section of the New York Academy of Medicine, March 12, 1907.

has still to be ascertained, that it is not being sufficiently large and numerous to warrant the appointment of a number of inspectors to examine thirteen families and to take possession of nonbovine diseases in essentially contaminated milk.

It is now just a half century since it was first suggested that milk outbreaks sometimes be due to infected milk, the circumstances which led to the idea being the occurrence of thirteen cases of typhoid fever in seven of fourteen families supplied with milk from the same farm, the prior introduction of the disease into the household of the farmer by an infected domestic, and seizure of two of his children. The report of this outbreak excited no particular interest, and no other similar cases were reported during a period of ten years, when it fell to the lot of the same observer to record fifteen cases of scarlet fever in six of fourteen families supplied by a small farmer, whose four cows were milked by his wife, who, at the same time, was nursing a child fatally ill with the same disease. A few years later reports of outbreaks attributed to contaminated milk began to appear with considerable frequency, and before long the number grew to far more than a hundred, a very considerable proportion of which, it must be confessed, were based upon somewhat flimsy evidence, as is usually the case when incredulity and indifference concerning a departure from accepted ideas are succeeded by enthusiastic acceptance. Then it began to appear that milk supplies were indeed worthy of the attention of public authorities, and now in case of sudden, small outbreaks, the milk is often suspected at once; and the suspicion appears to have been justified in several hundred instances.

At present, it is known that the nonbovine diseases capable of being spread by milk include typhoid fever, dysentery, scarlet fever, diphtheria, and the group of diarrheal diseases which we miscall "cholera infantum." Excepting the last mentioned, the most important of these diseases, so far as the milk supply is concerned, is typhoid fever. In the public mind, outbreaks and epidemics of this disease are commonly associated with polluted drinking water, but where water supplies are properly guarded, as in Massachusetts, for example, they are more commonly found to be caused by contaminated food, and especially by that one which is most subject to pollution and which offers the specific organism the most favorable conditions for preserving its virulence and increasing its numbers—namely, milk. During the past two years, of eighteen local outbreaks of typhoid fever in different parts of Massachusetts, investigated under my direction, fourteen were traced to milk, and three to polluted, private, or semipublic water supplies; one could not be explained. In eleven of the fourteen outbreaks traced to milk, there was a history of typhoid fever at the place of production, and in the others there was none. With suitable State supervision of milk production, under which it would be unlawful, under heavy penalty, to ship milk from dairies where typhoid fever or other disease communicable through milk are known to exist, until the authorities are satisfied that it can be done with

entire safety, such outbreaks could be largely prevented; but under the most practicable and efficient supervision there will be milk borne typhoid outbreaks which cannot be traced to any antecedent case on the farm. This is because in every community in which typhoid fever is endemic there exist numbers of persons who are unconscious carriers and disseminators of the typhoid bacillus. Of nearly 1,500 patients with typhoid fever examined by a large number of research workers in various parts of the world, with reference to the presence of the specific organism in the urine, nearly one fourth (24 per cent.) yielded positive results. In many persons the bacilli persist for a long time after complete recovery, and they may be found in the feces as well, whether or not present in the urine. According to Kutscher,¹ about four per cent. of typhoid patients become chronic carriers. Among 482 convalescents from the disease, Klinger² found sixty-three with bacilluria and eight continued to excrete the bacilli six weeks after recovery. Among 1,700 persons he found twenty-three typhoid carriers, eleven of whom had no typhoid history. Kayser,³ tracing outbreaks to their sources, found in one dairy a boy of twelve who was a chronic carrier, and in another a woman who, with no history of typhoid, was excreting the specific bacilli. The milk which she handled communicated the disease to seventeen persons, two of whom died. Minelli⁴ examined 250 prisoners who had not been in contact with typhoid cases, and found one who had the bacilli constantly in his feces. Among the same number of inmates of an asylum for the insane in which the disease had existed to some extent for a number of months, Nieter⁵ found seven carriers. With regard to the time during which this excretion can continue there appears to be no limit. Levy and Kayser⁶ record the case of an inmate of an asylum who recovered from the disease in 1903, was believed to be the source of infection in an outbreak in 1905, and died in October, 1906, from the effects of an autoinfection from the gallbladder, from which, as well as from other parts of the body, the bacilli were isolated. Two cases are cited by Doerr,⁷ in which the bacilli were isolated from the gallbladder, seventeen and twenty years, respectively, after recovery, and Lentz⁸ reports one in which they were found constantly in the feces, even after forty-two years.

We have, then, carriers of the exciting cause of this disease who do not know that they ever have had it, in addition to those who apparently have completely recovered; and they may carry the infection as long as they may live. Such persons are, of course, to a certain extent a public menace, especially if they happen to be engaged in the handling of food products; but there seems to be no way of picking them out of the general population, nor for the present, at least, of excluding them from dairy work. The ideal protection of milk supplies would include a thorough examination of every person who handles the milk in any way, but those who

¹ Kutscher, *Zeitschrift für Bakteriologie*, 1903, 1, 177.
² Klinger, *Zeitschrift für Bakteriologie*, 1903, 1, 177.
³ Kayser, *Zeitschrift für Bakteriologie*, 1903, 1, 177.
⁴ Minelli, *Zeitschrift für Bakteriologie*, 1903, 1, 177.
⁵ Nieter, *Zeitschrift für Bakteriologie*, 1903, 1, 177.
⁶ Levy and Kayser, *Zeitschrift für Bakteriologie*, 1903, 1, 177.
⁷ Doerr, *Zeitschrift für Bakteriologie*, 1903, 1, 177.
⁸ Lentz, *Zeitschrift für Bakteriologie*, 1903, 1, 177.

have had experience in promoting public health legislation know that such perfection is many years away.

But even if this measure were possible, there still would be milk-borne outbreaks, for the farm water supply must also play a part occasionally. The proximity of the privy vault to the well in country districts is a subject of common observation and remark, and chemical analysis often shows that a drinking water of good appearance is nothing more nor less than concentrated, partially purified house sewage. That the soil under certain conditions may harbor typhoid organisms for a very long time in active condition, has been demonstrated repeatedly; and that in some waters the organisms find conditions favorable to long life has also been demonstrated. It appears, too, that extensively polluted water can be drunk habitually by some persons for years without apparent harm, an immunity having become established, while other persons, not accustomed thereto, are made sick by it. In case of specific contamination of such a water, it is conceivable that while those living on the farm may escape infection, some of the consumers of milk which has been handled in pails and other utensils that have been rinsed with the water, or which has been diluted therewith, may be seized. In one of the outbreaks investigated in Massachusetts in 1905, and traced to milk, it was shown that some months before the owner of the farm had been ill with typhoid fever, that neither he nor anybody else on the place was then excreting the specific bacilli, but that the water supply was grossly polluted by the contents of the privy vault.

If among those living on a dairy farm there happens to be a chronic typhoid carrier, a person actively sick with typhoid or one convalescent therefrom, there is abundant opportunity for contamination of the milk produced. The infection may be direct or indirect. The hands of the milker, who may be a chronic carrier or an ambulant victim or a late convalescent, may bear myriads of bacilli, even though not obviously soiled. The sick one may be a child, nursed by the mother, who empties the bedpan and helps, perhaps, in putting up the milk for distribution. Instances are on record where the chamber utensils and milk vessels were being washed at the same time in the same sink. The opportunities for infection of the milk at its source are too obvious to need extended discussion, and the same is true concerning the chance of infection while in the hands of the middleman and distributor.

The number of outbreaks of milk borne diphtheria recorded is far smaller than those of typhoid fever. The reason is not far to seek. In the first place, diphtheria is not a water borne disease and hence the water supply plays no part. Again, while a person may carry virulent diphtheria bacilli in his throat for a long time, he does not excrete them in his urine and feces, and has therefore far less occasion to infect his hands. That direct infection can and does occur, however, has been proved a number of times.

Concerning milk borne scarlet fever there has been more or less controversy, some maintaining stoutly that cows are subject to a teat disease capable of causing scarlet fever in man. The whole theory

of this connection is based upon the well known Hendon outbreak and a number of epidemics of sore throat; but the evidence is far from convincing. The Hendon outbreak was undoubtedly due to contaminated milk, but the contamination was by human rather than bovine agency, for it was shown that opportunity for such infection existed, and it appeared that the teat eruption was cowpox and not a form of scarlet fever. In a large proportion of the recorded outbreaks of milk borne scarlet fever, the evidence of direct infection is very convincing. Few such outbreaks have been reported in this country, but it is not unlikely that they occur fairly frequently. One reason why they are not more commonly studied is that their run is short; the explosion is sudden, and the decline equally so. The most extensive one studied in this country, so far as I am aware, is one which occurred in January of the present year, in Boston, Cambridge, Somerville, and Everett, in which cities there were reported during the first seven days of the year a total of sixty-three cases. During the next five days no fewer than 485 cases were reported—nearly one hundred per day—which number exceeded by thirty the number reported in the whole State during the first three weeks of January of the preceding year. The total number reported during the first three weeks of the present year from the four cities mentioned was 717.

The sudden onset suggested a common cause, and investigation showed the interesting fact that 84 per cent. of all cases reported up to January 20th, when the outbreak had practically ceased in each city, were in families supplied by a single large milk concern, which does a wholesale business as well. Between the milk sold in the wholesale trade and the outbreak, there appeared to be no connection whatever. The milk distributed to families was received at the company's place of business in Charlestown, where the cans were emptied into a large vat, from which it was drawn into jars and small cans. The contents of each can was tasted, as is the custom, before being emptied into the vat, so that any sour milk might be rejected. The possibilities of infection were several: At the farms, by the taster, by those who handled and bottled the milk, and by the drivers of the delivery wagons; and all of these possibilities were investigated. There appeared to be no cases of the disease at the farms nor among the families of those who mixed, handled, and bottled the milk, and although cases occurred in some of the households in which the drivers lived, there appeared to be no chance of infection of the bottled milk after it was loaded into the wagons. All of the men who handled the milk, fifty in all, were examined, and six had throats which were somewhat suspicious in appearance, but none showed any rash or abnormally appearing tongue. The man who did the tasting, however, yielded rather more positive evidence. His tongue had markedly prominent papillæ, and his young daughter had greatly enlarged tonsils and markedly prominent papillæ, and was desquamating on the legs and feet.

The operation of "tasting" as usually carried out is very objectionable, not to say disgusting. In this instance a spoon was used to convey the milk to the mouth, passing from can to mouth and then, without being washed, to another can and back to the

mouth, and so on through the entire lot. It was learned that a few days before the explosion the regular taster was absent and the person mentioned took his place for one day only.

That the milk was infected by him seems likely, and it is of interest to note that the greatest number of cases reported on any one day in Cambridge, Somerville, and Everett fell on the same day (January 9th), while the maximum in Boston came on the day following (January 10th). It happens that the retail trade of Cambridge, Somerville, and Everett is supplied with that which arrives in the morning of the day of delivery, while the supply for the Boston routes is held over until the following morning. Thus can be explained the fact that the height of the outbreak occurred one day later in Boston than in the other cities. If this may be accepted as an instance of milk borne infection, its value is chiefly in calling attention to the possibility of wholesale infection at the place of delivery as well as at the place of production.

A considerable number of outbreaks of septic sore throat have been traced in Great Britain to milk from cows with garget, but so far as I can recall no such instances have been recorded in this country. In one of the English outbreaks the number of victims exceeded 500. If the cause was garget, it seems strange that such outbreaks are not far commoner, since garget is the most common bovine disease.

When an outbreak of any of these mentioned diseases occurs the public is vastly excited and alarmed. If one or two persons die, so much greater the excitement. And yet, the mischief wrought by all of the recorded milk borne typhoid, diphtheria, scarlet fever, and other outbreaks together for the past fifty years is as nothing compared with the frightful waste of human life which is allowed to go on in a single season in many of our large cities by reason of public indifference as to the character of the milk supplied to bottle fed infants. There is something spectacular in a sudden explosion of scarlet fever or typhoid, but no particular interest appears to attach to the upcurve in infantile mortality which begins about April, proceeds gradually during May and June, suddenly shoots almost vertically in July and August and then takes a sudden drop with the advent of cooler weather. This violent fluctuation is caused by the enormous increase in that group of diseases which we know as epidemic diarrhoea and cholera infantum, infections due almost wholly to a polluted milk supply. If we take the death returns of any large city and throw out all cases of diarrhoeal diseases, we will find that the curve of infantile mortality from January to January does not fluctuate very much, even in the summer months; and if we count up those which we have thrown out, we will find that they constitute, during the period of warm weather, the majority of all reported. In the cities and towns of Germany with more than 15,000 population there were in March, 1905, less than 1,500 deaths of infants from diarrhoeal diseases; in April the number rose to somewhat more than 1,500; in May, to nearly 2,000; in June, to about 3,250; in July, to nearly 11,000; in August, to nearly 16,000; and then came a corresponding fall. If we may take the statistics of Berlin as in a way applicable to the empire as a whole,

less than 10 per cent. of these infants were breast fed. Taking it as 10 per cent., however, and adding to this an equal number of the bottle fed class as a stand off, we can see that had the general milk supply been ideally clean, more than 20,000 infant lives might have been saved in the months of July and August alone.

Are these enormous losses, which are going on almost everywhere, of no especial interest? They are, indeed, but not to those who can apply the remedy. They are of interest to public authorities who comprehend their obligations to the people; to a fair proportion of the medical profession; to a considerable number of philanthropists; and to an exceedingly small fraction of the public as a whole. It is the purchasing public that holds the key to the situation and can apply the remedy for all milk borne infections; it is the man behind the dollar who can secure insurance against milk sickness by refusing to give any of it for milk as ordinarily produced and sold, and by a willingness to give a little more of it for the right kind. But no, the extra few cents daily appears to be an insurmountable obstacle, even to those who are free even to wastefulness in other ways; and they are content to buy dirt of all kinds, including cow dung and pus, with their milk, secure in the thought that by heating the mixture for a few minutes it is made much safer to drink. It seems unfair to the public and, in a business way, especially unfair to the clean dairyman, that dirty dairies should be permitted to exist; but the public is apathetic and will do nothing, and it appears that the only way to ensure reducing milk borne infection is State and municipal regulation of dairies and distribution.

Correspondence.

LETTER FROM LONDON.

The Amalgamation of Societies.—The Royal Commission on Vivisection.—The End of Compulsory Vaccination.

LONDON, March 9, 1907.

A first step has at last been taken toward the amalgamation of the medical societies of London into one organic whole. It is not a very long step, however, for not a few societies still hold aloof. Among them is the Medical Society of London, the oldest body of the kind and by far the richest. Its refusal to join is to be regretted, but it is not altogether surprising that a society with a history of a century and a half, and possessing considerable wealth, should be indisposed to sink its identity in a new body to which at the same time it was expected to furnish the assurance of financial stability. The new society is not likely, at least for some time, to suffer from the proverbial evils of riches. But it is to have a royal charter, and, like Dogberry, will have everything handsome about it, including a fine name. It has decided to call itself the Royal Society of Medicine. This many are inclined to think a mistake. It will inevitably lead to confusion with the Royal Society, a confusion which that august body will naturally resent, but which, it is to be

encourage.

The Vivisection Commission has issued a substantial blue book containing the evidence given before it during the first three months of its inquiry. It is understood that there are many witnesses still to be examined, and it is considered probable that the commission will not issue its report till late in the autumn. The impression one gets from the evidence so far taken is that the antivivisectionists have not even the shadow of a case. The act of Parliament which was passed in 1876 as the outcome of a previous royal commission has been shown to be administered with due regard both to the prevention of cruelty to animals and to the necessities of scientific research. Care is taken that licenses to make experiments on living animals are given only to persons fitted for work of that kind by their scientific training. Vivisection can be practised only in public places registered for the purpose, and the laboratories are always open to inspection by government officials, who pay surprise visits from time to time and report any breach of the law or irregularity that comes under their notice. The inspectors for England, Scotland, and Ireland—all men of high standing in the medical profession—are unanimous in stating that, far from there being any cruelty, physiological and pathological investigators throughout the country are careful to save the animals they use not merely pain, but discomfort. The inspector for Ireland, Sir Thornley Stoker, ex-president of the Irish College of Surgeons, expressed disapproval of vivisectional demonstrations to students. In this there is reason to believe that he has the support of some other prominent surgeons, but the weight of scientific opinion here is on the other side. The representatives of the "antis" made a poor show, and were evidently surprised and not a little hurt at the handling they got. They had been accustomed to make wild and calumnious statements without contradiction, and the experience of being asked for definite particulars, dates, and references was as unpleasant as it was new to them. I learn on good authority that the commissioners were very favorably impressed by the evidence of Professor Starling, who is one of our leading physiologists. A great point is made on antivivisection platforms of the supposed fact that dogs cannot be properly anesthetized, and on the strength of this belief a bill forbidding experiments on dogs has been brought into the House of Commons. Professor Starling was most emphatic in his testimony as to the facility and completeness with which dogs could be anesthetized, and he affirmed that if experiments on these animals were prohibited, the science of physiology would practically be killed in England and pathological research would also suffer to a degree dangerous to the human race. Another favorite weapon of the "antis" is that curare is constantly used by physiologists, in defiance of the law, to prevent tortured animals giving any sign of suffering. It appears from Starling's evidence that the "hellish wourali," as Tennyson called it, is now very difficult to get, and that when it is got, it is apt to be impure and so poisonous as to make it useless. It is therefore little used and never without the ac-

companiment of anesthesia produced by means of the ordinary agents. On the whole, it does not seem likely that the commission will recommend any greater restrictions than those imposed by the existing act, which, on the testimony of the scientific witnesses, has not interfered with experimental research.

The British Demos is positively and aggressively antiscientific. With the advent of a government which depends for its existence on the fickle favor of the democracy, it was easy to foresee that a clamor would be raised for the abolition of compulsion in the matter of vaccination. The present law allows considerable liberty to the parent or guardian who pleads a "conscientious objection." He has merely to go before a magistrate and state that he has such an objection; having done this and gone through the further ceremony of paying a shilling, he is entitled to a certificate of exemption. It was intended that this provision, while safeguarding the rights of conscience, should prevent the merely careless parent from neglecting his duty to his child. It was expected that the result of it would be a considerable actual increase of vaccination with a corresponding decrease of the cheap martyrdom which cranks were only too willing to undergo for the sake of a little notoriety. These hopes were to a large extent fulfilled. Unfortunately, many of our unpaid magistrates are fussy and unable to resist any temptation to magnify their office. These jacks in office have made a point of browbeating the "conscientious objector," who, though a fool and generally a fool of a particularly pestilent kind, has his rights as a citizen. These impracticable magistrates have too often succeeded in making him a martyr on cheaper terms than was the case when he was fined or put in jail for his obstinacy. The antivaccinationists have worked up this grievance, and the consequence is that the government has promised to make things easier for the conscientious objector. But there is little doubt that the end of it will be that vaccination will cease to be compulsory. A recent debate in the House of Commons showed that the feeling of legislators on the side now in power was more or less hostile to vaccination. At the annual meeting of the National Antivaccination League, held on March 5th, it was decided to urge the government to bring in a bill repealing the penal clauses of the vaccination acts, withdrawing government support and patronage of the practice of vaccination, and abolishing all regulations or customs in the public services which penalized conscientious objectors to the practice. The Prime Minister has been asked to receive a deputation on the subject. Unfortunately, there is now no medical member of the House of Commons who can advocate the scientific side of the question with the knowledge and authority of Lord Playfair or Sir Michael Foster. On the other hand, there is a legislator, one Arnold Lupton, who poses as the champion of antivaccination and who has covered himself and his cause with ridicule. During the recent debate in the House of Commons he said it was surely a monstrous thing that the manhood and womanhood of the nation should be poisoned in the cradle by law. The most wicked invention was that of opening a vein, cutting

through the skin, and putting him at ease from a disease of view. The physician had waited for a long time and they were all proud of its history. They had read of Moses and David, of great conquerors, of Alexander and of the of Demosthenes and Cato of Nelson, Wellington, and Napoleon, and this country claimed the parentage of such men as Spenser, Shakespeare, and Milton. Did an honorable member believe that these men had been vaccinated? It may be said that this sapient person is the most effective orator on the side of vaccination there is now in the British Parliament.

Therapeutical Notes.

Ointment for Neuralgia.

R Cocaine,0.25 gramme;
Chloral,0.15 gramme;
Petrolatum,5.0 grammes.
M. f. suppositoria. Apply to the painful part and cover with a moist bandage if the neuralgia is periorbital or hemicranial.

Mouth Wash for Diabetics.—Croftan, in the *Clinical Review*, recommends:

R Tinct. opii,5vi;
Aque menth. pip.,3vi;
Alcohol,Oii.

M. Sig.: To be used as a mouth wash.

Or

For bleeding gums the following should be used:

R Tinct. opii,5vi;
Decocti althææ radicis,Oii.
M. Sig.: To be applied to gums.

Anthrax.

R Honey,20.0 grammes;
Extract of arnica flower,10.0 grammes.
M. Salve.

This salve is to be spread upon borated lint and applied to the carbuncle, protected by cotton. The application must be renewed every twenty-four hours. If the carbuncle has opened it is to be covered with small pieces of borated lint, saturated with a 3 per cent. carbolic acid solution, and then the salve to be applied. The carbuncle is to be cleansed every day with a 3 per cent. carbolic acid solution, and when free of pus iodoform gauze is to be used for lightly packing the cavity (Ströll).

Intermittent Tick Fever.—Kieffer, in speaking of intermittent tick fever, says of the treatment that quinine was administered in all the earlier cases without any apparent effect. He believes that it increases the subjective discomfort. It certainly has no beneficial effect either on the paroxysm directly or in the line of preventing its recurrence. But he is convinced that arsenic has a controlling and curative effect on the disease, particularly when used subcutaneously or intravenously. The subcutaneous injections are, in his opinion, distinctly to be preferred to the intravenous, but are apt to be followed by annoying burning which lasts from fifteen to thirty minutes. The best formula is Kobner's, and

if a little cocaine be added to it the burning will be prevented, thus:

R Tincture of aconite,
Codeine,
M. f. pil. No. L.

This solution should be sterilized, and is used in a dose of from 1 to 2 c.c. twice daily. After the acute phases the blood deterioration must be met by smaller doses of arsenic or by the administration of the ordinary iron preparations.—*The Journal of the American Medical Association*, April 6, 1907.

Bronchitis.

R Tincture of aconite,
Codeine,
M. f. pil. No. L.

S. One pill two to five times a day, if necessary one hour before or two hours after meals.

Alveolar Abscess.

R Sodium sulphite,4.0 grammes;
Water,160.0 grammes;
Syrup,30.0 grammes.

M. S. One tablespoonful every hour.

The pain will subside slowly after three to four doses.

Vomitus Gravidarum.

R Dissolve in alcohol,30.0 grammes;
And add
Syrup,30.0 grammes.

(Or:

R Cocaine hydrochloride,0.1 gramme;
(Or chloral hydrate,30.0 grammes);
Cinnamon water,ad 200.0 grammes.

M. S. Every two or three hours one tablespoonful.

Ascites.

R Fol. digital. pulv.,0.1 gramme;
Sacch. alb.,0.3 gramme.

S. Three times a day one powder. (Eichhorst.)

Arthritis.—As a prevention for an attack the following is prescribed:

R Colchicin,0.05 gramme;
Pulv. liquorit.,aa 1.5 grammes.

M. f. pil. No. X.
S. Two pills daily.

Hæmoptysis.

R Powdered opium,0.05 gramme.

M. f. pulv. No. V.
S. One powder every hour.

Besides every one or two hours ten drops of fluid extract of hydrastis in a teaspoonful of sugar. This is not to be prescribed in pregnancy (Ströll).

Suppositories for Hæmorrhoids.

R Ergot,0.2 gramme;
Morphine hydrochloride,0.01 gramme;
Cacao butter,1.5 grammes.

M. f. supp. No. X.

Zentralblatt für die gesamte Therapie, January, 1907.

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THE SCHOOL OF MEDICINE OF COLUMBIA UNIVERSITY.

Inasmuch as with this year the old College of Physicians and Surgeons, now the School of Medicine of Columbia University, enters upon the second century of its career, it is with perfect propriety that the *Columbia University Quarterly* devotes a considerable part of the space in its March number to matters connected with the medical school. The opening article, an address delivered at the beginning of the current session by Dr. L. Emmett Holt, is entitled *Medical Ideals and Medical Tendencies*. It is an exceedingly instructive article. The next article, by Dr. Frederic S. Lee, entitled *A Sketch of the History of the College of Physicians and Surgeons*, is in great part an abstract of a longer article by the same writer published in the *History of Columbia University* issued in commemoration of the one hundred and fiftieth anniversary, 1904, of the founding of King's College (the original name of Columbia).

The College of Physicians and Surgeons was opened in 1807 in a house in Robinson Street (now Park Place), and the faculty consisted of Nicholas Romaine, Samuel L. Mitchell, Edward Miller, David Hosack, Archibald Bruce, Benjamin De Witt, and John Augustine Smith. It is interesting to note that mineralogy was one of the subjects taught. The first class was graduated in 1811, and in that year the eminent Dr. Samuel Bard became the president of the faculty. A new and larger building in Barclay Street was soon occupied by the

college. Its subsequent housings were in Crosby Street, Twenty-third Street, and Fifty-ninth Street. It is at present quartered in the situation last named.

The third article, by Dr. Walter B. James, is a sketch of the connection of Dr. Samuel Bard with the faculty, with a portrait of Dr. Bard. Dr. Francis Carter Wood follows with an article on *The Department of Clinical Pathology*. In an article entitled *Medical Education in New York*, Dr. M. Allen Starr sets forth the advantages of New York as a place for medical study. We then come to an article not especially related to the school, entitled *The Progress of the Antituberculosis Movement in New York*, by Dr. James Alexander Miller. Dr. George S. Huntington furnishes the last of the contributed articles relating to the medical school, entitled *Teaching Museum for Undergraduates in Medicine*. In addition there are three appreciative editorial articles, *The One Hundredth Anniversary of the College of Physicians and Surgeons*, *The Quiz System in Medicine*, and *The Clinic in Medical Instruction*. The *Quarterly* has certainly been generous in devoting so much space to the affairs of the School of Medicine.

THE BASLE ANATOMICAL TERMS.

Official sanction does not necessarily guarantee perfect correctness in onomatology, and it does not seem to us to have done so in the case of the German Anatomical Society's list of terms preferred in descriptive anatomy, the *nomina anatomica*, adopted at a meeting held in Basle a few years ago, wherefore the nomenclature is sometimes called by the abbreviation "BNA." Nevertheless, the society did an important work in its preparation and adoption and one that on the whole is reasonably sure to work great improvements in textbooks of anatomy, in which it will doubtless be largely followed.

A great service has been performed by Professor Barker, of Baltimore, in preparing the list, together with the English equivalents, for the use of American physicians.¹ The book consists of twelve pages of introductory matter, 202 pages (though numbering only 100 in the pagination, adjacent lefthand and righthand pages having the same numbers) devoted to the lists, and three pages of notes explanatory of certain terms. It is wonderful that the book contains so few typographical errors, for it must have been very trying to the compositors and the proofreaders. Those that we have noticed are the following: "Jerected" (for rejected), "ileocecalis" (for ileocæcalis), "peroneus" (for peroneus), "pars cartilaginea" (for pars cartilaginea), and

¹*International Terminology, with Special Reference to the [B. N. A.]* By Lewis F. Barker, M. D., Professor of Medicine, Johns Hopkins University, Baltimore; (formerly Professor of Anatomy, The Medical College, University of Chicago). With vocabularies in Latin and English, and illustrations. Philadelphia: F. and J. Blakely's Son & Co., 1907.

"Entwicklungs-geschichte" (for Entwicklungs-geschichte). The diphthongs æ and œ are, according to the German fashion, generally printed with the letters separate, æ and œ, but in Dr. Barker's explanatory notes we find (on page 101) "alæque" and (on page 102) the inconsistency of "urethrae membranaceæ," also in his version of the list (on page 27) "spina scapulæ." Still, the typographical slips are wonderfully few, and the publishers cannot be too highly praised for the form in which they have brought the work out.

We think we have detected some errors which cannot be termed typographical. They are the following:

According to the book	According to our preference
Hilus.	Hilum.
Raphe.	Rhaphe.
Septulum.	Septum.
Septum.	Septum.
Mandibularis.	Mandibularis.
Incisura supraorbitalis.	Incisura supraorbitalis.
Incisura frontalis.	Incisura frontalis.
Arteriole.	Arteriole.
Calyces.	Calyces.
Appendix epididymis.	Appendix epididymidis.
Perineum.	Perineum.
Angiologia.	Angiologia.

On the other hand, the following terms given in the list seem to be undeniably preferable to the forms that are in common use:—

- Valvula Falloppii (instead of Fallopii).
- Frenulum (instead of frænulum).²
- Thyreohyoideus (instead of thyrohyoideus).
- Piriformis (instead of pyriformis).
- Cæcum (instead of cœcum).
- Chorioidea (instead of choroidea).

We fail altogether to see the force of "lac femininum" ("female milk," as Dr. Barker styles it). We are not very terribly horrified by hybrid words, but those who are will object to "sinus paranasales" and "parolfactorius."³ We think it is unwise to use so many abbreviations as are to be found in the list, especially as they are sometimes the same for the nominative plural and the genitive singular, and we particularly object to doubling the initial letter or the terminal letter of the first syllable to denote a plural, though we do not deny that it is good usage in Latin. For example, "lig." is used in the list for ligamentum, and "ligg." for ligamenta. We fear it will lead to confusion. In one instance (in the expression "sulcus subclaviæ," on page 20) the abbreviation for arteriæ seems to have been omitted. We find one exception to the use of reduplication to indicate plurality—"gl." for glandulæ (on page 91).

The vocal cords, or bands, are termed "plica ventricularis" (the false vocal cord) and "plica vocalis" (the true vocal cord), and this strikes us as a distinct advance. We may be allowed to add that

² Perhaps they will object, too, to the word "terminology," prominent in the title of the book, especially as, many years ago, Hyrtl made "onomatology" familiar.

we are particularly gratified to find that Falloppian is preferred to Fallopiian, for during many years past we have habitually printed it with the double p, and some persons have criticised us for doing so. We have no doubt that the great Italian anatomist wrote his name Falloppio. The society seems to be in some uncertainty as to the order of Latin adjectives when several are used in connection with a single noun, for we find on page 78 "fissura transversa cerebri" and "fissura cerebri lateralis."

It is with diffidence that we have thus ventured to criticise the work of the many learned men who constitute the German Anatomical Society, but we feel sure that they will welcome so much of our criticism as may turn out to be well founded, and we wish to express again our sense of satisfaction at the general result of their labors.

THE METHOD OF INFECTION WITH TRY-PANOSOMES.

In our issue of November 24, 1906, we referred to a paper by Minchin, Tulloch, and Gray on the method of transmission of trypanosoma gambiense by glossina palpalis. In that paper the authors conclude that the organism is transmitted from man to man by the soiling of the proboscis of the fly. Recent studies of Schaudinn on the method of transfer of other protozoan parasites, however, reveal the fact that the propagation of such an organism is more complex than at first appears to be the case. In entamœba histolytica, for example, there is a sexual form of the organism with encystation. In examining large numbers of tsetse flies, Minchin (*Proceedings of the Royal Society*, February 22nd) discovered a process of encystation of trypanosoma Grayi in the proctodæum of tsetse flies at Entebbe, Uganda. Organisms which are about to become encysted are very slender and are smaller than other forms of the same parasite. They have no distinct undulating membrane, and the flagellum is long and appears to run down the side of the body. The blepharoplast has the large size and rodlike form characteristic of trypanosoma Grayi, and the nucleus is either compact or broken up into granules of chromatin.

In the first stages of encystation the flagellum becomes shortened and stains more deeply, and the cyst wall appears as a layer of reddish substance forming a cap over the posterior extremity in specimens stained with Giemsa. The flagellum continues to shorten, and the cyst wall continues to increase, until the former is completely retracted and the latter has completely enveloped the body of the parasite in a pear shaped cyst. After the cyst is completely formed it is at first oval, then irregularly circular in outline.

Minchin suggests that these cysts are formed with the intent of being eventually swallowed by some vertebrate which is as yet an unknown host of trypanosoma Grayi. After development in the digestive tract of the new host it passes thence into the blood, to be again ingested by a tsetse fly. He suggests that there are two possible modes of infection in the dissemination of protozoan blood parasites by biting insects—first, the inoculative method, in which the parasite, after going through developmental changes in the insect, passes back again into a second vertebrate host through the proboscis, for example, malaria transmission; second, the contaminative method, in which the parasite taken up by the biting insect, after undergoing developmental changes within its large gut, passes out of it through the anus and infects the vertebrate host by contaminating its food or drink.

Minchin suggests to those working on the subject of trypanosome infection the desirability of observations to determine whether or not there is a cycle within the insect which disseminates the parasites that results in a contaminative infection of the vertebrate host. The inoculative type of developmental cycle of the trypanosome has been carefully sought, but so far has escaped detection. It may be that the solution of the problem will follow studies along the line suggested by the authors of the paper mentioned.

A NEW JOURNAL OF THERAPEUTICS.

We have received the first issue, dated January, 1907, of a new quarterly journal entitled *Folia Therapeutica*, edited by Dr. J. Snowman and published in London by John Bale, Sons, & Danielsson, Ltd. It contains thirty-one large pages of reading matter of excellent quality.

A FORMER GREAT SURGEON OF ST. LOUIS.

We pay too little attention to the commemoration of our illustrious dead. We are glad to learn, therefore, from the *Medical Fortnightly*, that on the 28th of April services, of a religious character we presume, are to be held in St. Louis, at the instance of the medical profession of that city, commemorative of Dr. John T. Hodgen. It seems that the date mentioned will be the twenty-fifth anniversary of Dr. Hodgen's death. It is difficult to realize that he died so long ago, for our memory of him is still vivid and numerous traces of his great influence over his contemporaries and over men younger than they are to be observed in almost all parts of the country. And yet we must recall that it was in the time of the civil war that he was already at the height of his activity.

It was not solely as a surgeon of remarkable

originality that Dr. Hodgen was recognized, but also as a man of such purity and nobility of character as to be universally loved and admired. He practised his profession in St. Louis, but far beyond the confines of that city and those of Missouri and the adjacent States he was looked up to as one of the foremost surgeons of his time and as a source of illumination in connection with all professional interests. In their observance of the anniversary the physicians of St. Louis will be joined, in spirit at least, by a vast array of those of their brethren throughout the country who are old enough to preserve a clear remembrance of Dr. Hodgen's sterling qualities.

THE DUTTON MEMORIAL.

Dr. Joseph Everett Dutton, who published the first description of the trypanosome found by Forde in a case of sleeping sickness, died at the age of twenty-nine years, at Kasongo, Central Africa, of African tick fever. Dr. Dutton served on four successive expeditions sent out by the Liverpool School of Tropical Medicine to Nigeria, Gambia, Senegambia, and the Congo Free State. His work in African lethargy and African tick fever is well known and is of the first order.

It is proposed by the managers of the Liverpool School of Tropical Medicine to found a research professorship in tropical medicine, to be known as the Dutton memorial research professorship of tropical medicine, as a method of commemorating the self sacrificing career of this scientific man. It is proposed to raise a trust fund of £10,000 (\$50,000), the interest of which will be used for the expenses of the chair. Subscriptions to the amount of about £5,000 (\$25,000) have already been received.

The appeal for subscriptions issued by the president and committee of the Liverpool School of Tropical Medicine refers to the great benefit to mankind in the tropics and in subtropical countries which has followed the discovery of the method of transmission of malarial disease and of yellow fever. Some interesting figures are given concerning the malarial morbidity in Havana, Ismalia, Klang, and Port Swettenham after the mosquito campaign was begun. There are also some statistics concerning yellow fever in Havana and on the Isthmus of Panama.

After the brilliant results which attended the labors of the United States Army Commission for the Study of Yellow Fever at Havana in 1900, scientific men in America, it is needless to say, appreciate this effort on the part of the Liverpool School of Tropical Medicine to provide a permanent fund which shall be applied to the scientific study of similar problems. Our heartiest good wishes for the success of the undertaking are offered to those in

charge of the movement. No better method of commemorating the work of Dr. Dutton could be devised.

DIABETIC EPIDIDYMITIS

The *Saturday Evening Post* for February 27th contains an interesting report by Dr. W. C. Van Dant Kroon in the *Medical Record* of a case of diabetic urethritis. *Greene's Kunde*, remarks that, though diabetic urethritis is common, acute epididymitis does not seem to have been observed before in connection with diabetes. In the case referred to there were absolutely no vesical or urethral disturbances, and the patient declared that he had never before had any affection of the genitals. He was sixty years old, his glycosuria was moderate, there was a little hypertrophy of the liver, and he had a subicteric hue of the skin, xanthelasma, and occasionally cedema of the extremities. His right testicle had been swollen and painful for two days when the author first saw him, and he said that he had had fever at the onset of the trouble. The vas deferens and the epididymis were decidedly swollen, but the scrotum was not red.

Obituary.

WILLIAM C. GLASGOW, M. D.,
OF ST. LOUIS.

The death of Dr. Glasgow, which occurred recently at his home, in St. Louis, is an event of more than usual importance. Few men have lived more usefully, either to the profession or to the world at large. Indeed, the relatively early age at which he has been taken away is without doubt due in great measure to the unremitting energy and activity with which he worked. It would be well if such warnings could be understood and heeded by us.

Dr. Glasgow came of excellent ancestry. His family settled in St. Louis among the first of the English speaking element of that section. In the early part of the last century his maternal grandfather, Dr. Carrlane, was mayor of the city for a period of thirty-five years, and its most influential citizen. His father, William Glasgow, was a public spirited man of considerable prominence. There were always physicians in the family. Thus Dr. Glasgow came of fine stock. He started life in a good position. His medical instincts came to him by inheritance. Finally, he was able to avail himself of the very best opportunities for general culture and for special professional education both in this country and abroad. Having completed his preliminary studies by a residence in Europe, he returned to St. Louis and entered into active practice, devoting himself to the department of diseases of the upper air passages. He was soon appointed professor of laryngology in the Medical Department of Washington University, filling the position until within a few years with distinguished credit. He was a loyal supporter and a very useful member of the American Medical Association. In 1878 he be-

came one of the founders of the American Laryngological Association, in company with such cultivated and distinguished specialists as Knight, Solis Cohen, Lefferts, Shurly, Elsberg, Wagner, Lincoln, Ingals, and the like. Among his early contributions to medical literature were several highly suggestive and original articles, notably those upon septal deformities and upon vasomotor neuroses of the nasal cavity. Later in his career he added to his practice the field of diseases of the chest. In it, as in laryngology, there existed no better authority. As a scholar and as a man, Dr. Glasgow represented the highest and best type of the American physician. Through his character, breeding, and temperament his high social standing was everywhere assured. As a physician he was devoted to the welfare of all classes needing his aid. He was enthusiastic in his love for the scientific side of his calling. Personally, with unusual temptations to the contrary, he possessed a singular modesty of disposition and a large appreciation of the good work of other men. Notoriety of any kind was especially repugnant to him. Easily the first authority in his department in a section of the United States geographically larger than that occupied by any of his contemporaries living in other cities, he held the field without the semblance of a rival from the beginning to the end of his long and useful career. He was a delightful companion, an ideal physician, and a widely appreciated and dearly loved friend.

D. B. D.

WILLIAM HENRY DRUMMOND, M. D.,
OF MONTREAL.

Dr. Drummond died on Saturday in Cobalt, Ont., where he was interested in a mine. His death, at the age of fifty-three, is said to have been due to apoplexy. Up to the time of the attack he had appeared to be in good health. He was a man of powerful build and of an exceedingly attractive personality. He was born in Ireland, but came to Canada when he was a young boy. He was educated in Montreal, and he practised medicine in that city until a short time before his death.

Though he was a man of considerable attainments in medicine, he was much more widely known as a poet than as a physician, and rarely have such charming dialect verses as his been produced by others. Many of his rhymes show a delicious blending of humor and pathos, notably *The Wreck of the Julie Plante*, which is perhaps, of all his works, the one best known in the United States. The broken English of the "habitant" of French Canada was employed by Dr. Drummond most skilfully, and it is sad to reflect that his work has come to an end.

LAWRENCE F. BERRY, M. D.,

Dr. Berry died at the Philadelphia General Hospital on Thursday, March 28th, of erysipelas, aged twenty-five years. He was born in Ripon, W. Va. He was graduated from the North Alabama Agricultural School and from the Jefferson Medical College. In the latter institution he was a member of the class of 1905. It is supposed that Dr. Berry became infected with erysipelas from one of the patients under his care in the hospital.

News Items.

Frankford Hospital.—The cornerstone of the new building of the Frankford Hospital, Philadelphia, was laid on Saturday afternoon, April 6th, at 3 o'clock.

The Clinical Society of the Elizabeth, N. J., General Hospital will hold a meeting at the hospital, on Tuesday evening, April 16th. Dr. Robert R. Sinclair, of Westfield, will read a paper on Pneumonia.

The Richmond, Va., Academy of Medicine and Surgery.—At a meeting of this academy, held on Tuesday evening, April 9th, the following programme was presented: Prognosis in Valvular Heart Disease, by Dr. Manfred Call; High Blood Pressure, by Dr. J. G. Nelson.

Wills Eye Hospital.—The forty-seventh anniversary of the foundation of Wills Eye Hospital, Philadelphia, was celebrated on Tuesday, April 2nd. An effort is being made to secure funds for the construction of a new clinical building.

The Medical Society of the County of Ontario, N. Y.—The following programme was prepared for a meeting of this society, held at Clifton Springs, on Tuesday, April 9th: Address on Medicine, by Dr. W. B. Clapper; Aconite, by Dr. H. J. Knickerbocker; Alcoholism, by Dr. M. R. Carson.

The Society of Physicians of the Village of Canandaigua held a meeting, with Dr. M. R. Carson as host, on Thursday evening, April 4th. The paper of the evening was on the subject: The Manifestations of Rheumatism in Children, by Dr. D. A. Eiseline, of Shortsville.

The Clark County, Ind., Medical Association.—At the annual meeting of this association, held at Jeffersonville on Tuesday, April 2nd, officers were elected as follows: Dr. O. P. Graham, president; Dr. E. N. Flynn, vice-president; Dr. Austin Funk, secretary and treasurer; Dr. George Twomey, Dr. I. N. Ruddel, Dr. Claud C. Crum, censors.

The Maine Academy of Medicine and Science.—The postponed March meeting of this academy was held at the Columbia Hotel, Portland, on Tuesday evening, April 2, 1907. The essayist of the evening was Dr. S. C. Gordon, of Portland, who spoke on Physiological Economy in Nutrition.

The Buffalo Academy of Medicine.—The following programme was arranged for a meeting of the *Section in Medicine*, held on Tuesday evening, April 9th: A Consideration of Some of the Physical Signs in the Chest of Infants and Children, by Dr. S. McC. Hamill, Philadelphia, Pa.; discussion opened by Dr. Irving M. Snow.

The Medical Society of the County of Richmond, N. Y.—The following programme was presented at a meeting of this society, held at the Staten Island Academy, on Wednesday, April 10th: Some Phases of the Cancer Problem, by Dr. William Seaman Bainbridge, of New York; exhibition of patients; Amoebic Dysentery in Sailors at the Port of New York, by Dr. J. A. Nydeggar.

The Medical Association of Georgia.—The fifty-eighth annual meeting of this association will be held at Savannah, on April 17th-19th, under the presidency of Dr. H. H. Martin, of Savannah. The programme, which includes upwards of seventy titles, has been divided equally between medicine and surgery. This arrangement will greatly facilitate the reading and discussing of papers.

New Buildings for the Craig Colony for Epileptics at Sonyea, N. Y.—Five new cottages that will accommodate 175 to 200 additional patients are nearly completed and should be ready for occupancy by July or August. When they are filled there will be 1,250 epileptics at Sonyea. More than 1,000 are on the waiting list to enter when there is room for them.

The Medical Society of the County of Kings.—The *Section in Pediatrics* of this society will hold a meeting on Wednesday evening, April 17th, with the following programme: Sea Air Treatment of Infantile Diarrhoeal Diseases, by Dr. S. Beck; discussion opened by Dr. Benjamin Edson. Open Air Treatment of Tuberculosis of the Joints, by Dr. Walter Truslow; discussion opened by Dr. Charles D. Napier.

The Rochester Academy of Medicine.—At a meeting of the *Section in General Medicine*, of this academy, held on Friday evening, April 5th, the following programme was presented: Physics of X Ray and Radium, by Professor

William M. Bennett; Therapeutical Effect and Histological Changes Induced by X Ray, by Dr. M. B. Palmer; Interpretation of Radiographs, by Dr. R. R. Fitch; Calculi, by Dr. L. R. Cornman; Leucodescent Lamp, by Dr. J. R. Williams.

Obstetrical Society of Philadelphia.—At the regular monthly meeting of the Obstetrical Society of Philadelphia, held on Thursday evening, April 4th, the following papers were read: Dr. William H. Wells, Some Remarks on the Relative Value of Forceps and Podalic Version as Methods of Delivery; Dr. Edward A. Schumann, A Study of Pseudomyxoma Peritonei, with report of a case; Dr. E. E. Montgomery, The Treatment of Inoperable Cancer.

The School Hygiene Association of America is now in process of formation. The first meeting of the association will be held at Washington, D. C., on May 6th and 7th, at which time a scientific programme will be presented and the society will formally organize, electing officers, adopting a constitution, etc. The chairman of the local committee of arrangements is United States Commissioner of Education Elmer E. Brown.

The Medical Society of the Borough of the Bronx.—At a meeting, held on Wednesday evening, April 10th, the following programme was presented: Presentation of a Case of Pemphigus, by Dr. W. A. Boyd, who also presented a case of Myxedema. Symposium on Obstetrics, arranged as follows: Management of Pregnancy, by Dr. John F. Holmes; Management of Labor, by Dr. G. H. E. Starke; Management of Postpartum Conditions, by Dr. S. C. Bradley; discussion opened by Dr. Boyd and Dr. Raynor.

Pennsylvania Will Not Interfere in the Management of Hospitals Receiving State Aid.—The Governor of Pennsylvania has vetoed a bill providing that two directors or trustees of all hospitals and kindred institutions receiving State aid for maintenance and other purposes, shall be appointed by the Governor. In his veto message the Governor says: "I do not think it wise for the commonwealth of Pennsylvania to interfere in the direction, management, and control of the affairs of local and private charities or of institutions not wholly under State control."

A Memorial Hospital to be Built at Atlanta.—It is reported that the officers and employees of the Southern Railway will build in Atlanta a hospital costing \$200,000, for the treatment of railroad men and their families, as a memorial to the late Samuel Spencer, president of the road. The money has nearly all been raised by subscription, and it is reported that J. P. Morgan, of New York, has donated 10,000. It was at first intended to erect a monument to Mr. Spencer in the terminal station here, but the contributions made for that purpose will be diverted to the hospital fund.

Charitable Bequests.—By the will of William C. Eggleston, of New York, the following bequests are made: St. Luke's Hospital, \$100,000, to endow free beds for adults and children, the endowment to be known as the "William C. and Ella Eggleston beds, memorial of myself and my wife." The Sisterhood of St. Mary's Society in the City of New York, \$20,000, for the St. Mary's Free Hospital for Children, in memory of Mr. Eggleston's children, Louise and Adelaide. The New York Institution for the Blind and the New York Institution for the Instruction of the Deaf and Dumb, each \$15,000.

The Hartford, Conn., County Medical Association.—The one hundred and fifteenth annual meeting of this society was held on Tuesday evening, April 2nd. The election of officers resulted as follows: President, Dr. Edward K. Root, of Hartford; vice-president, Dr. Charles M. Wooster, of Torrville; secretary, Dr. Frederick B. Willard, of Hartford; councilor, Dr. Oliver C. Smith, of Hartford; delegates, Dr. John W. Felty, Dr. John B. Boucher, Dr. Kenneth E. Kellogg, Dr. Levi Cochran, Dr. William S. Kingsbury, Dr. Edward R. Lampson; censors, Dr. Oliver C. Smith, Dr. Thomas F. Kane, Dr. Walter G. Murphy.

The Williamsburgh Medical Society, of Brooklyn, N. Y.—The following programme was arranged for a meeting of this society, held on Monday evening, April 8th: Presentation of cases and specimens: Case of Congenital Rickets, by Dr. Abraham J. Sumner; Case of Chorioepithelioma Benignum (Ilydatiform Mole), by Dr. Alexander Spingarn. Papers of the evening: Bronchoscopy, with a Demonstration of the Instruments Used and their Application, by Dr. Emil Mayer, of Manhattan; discussion by Dr. Charles N. Cox, Dr. Hubert Arrowsmith, Dr. Alexander C. Howe; Cerebrospinal Meningitis, by Dr. William Browning; discussion by Dr. Glentworth R. Butler and others.

Quarantine in Louisiana.—Dr. J. H. White, who successfully stamped out the yellow fever epidemic of 1905, has been placed in charge of quarantine affairs in Louisiana and Mississippi, by the Marine Hospital Service, to the great satisfaction of the people. Dr. Von Ezdorf, Passed Assistant Surgeon, United States Marine Hospital Service, has assumed control of the station at the mouth of the Mississippi River, and service officers will be placed in charge of all the subsidiary stations located at Lake Charles, Morgan City, and Rigolets. The State Board of Health will now confine its energies to recording vital statistics and looking after the various communicable diseases.

Commemoration of the Anniversary of the Death of Dr. John T. Hodgen, of St. Louis.—On April 28th, the St. Louis Medical Society will commemorate the twenty-fifth anniversary of the death of Dr. John T. Hodgen. Speakers representing the medical profession in Missouri and other States will be present at the memorial exercises, and old friends of Dr. Hodgen's, and more especially members of classes, who were graduated under him, will be invited. Dr. Hodgen was one of the most eminent surgeons of his time. He was president at different times of the American Medical Association, the Missouri State Medical Association, and the St. Louis Medical Society, and professor at the St. Louis Medical College.

Philadelphia Personals.—Dr. Joseph S. Neff, medical director of the hospital of the Jefferson Medical College, has been appointed by Mayor Reyburn Director of the Department of Public Health and Charities of the city of Philadelphia.

Dr. L. P. McCormick, of Connellsville, Pa.; Dr. H. E. Glock, of Fort Wayne, Ind.; Dr. A. A. Van Slyke, of Mount Jewett, Pa.; Dr. C. Brotemarkle, of Vienna, Md.; and Dr. W. F. Hoffman, of Minneapolis, Minn., are registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

Professor Carl Hess, of Wurzburg, Bavaria, will deliver a lecture at the University of Pennsylvania some time in May.

Scientific Society Meetings in Philadelphia for the Week Ending April 20, 1907.—*Monday, April 15th*, Medical Jurisprudence Society; Northeast Branch, Philadelphia County Medical Society. *Tuesday, April 16th*, Section in Ophthalmology, College of Physicians; Dermatological Society; Academy of Natural Sciences; North Branch, Philadelphia County Medical Society. *Wednesday, April 17th*, Philadelphia County Medical Society, business meeting open to members only; Section in Otology and Laryngology, College of Physicians; Association of Clinical Assistants of Wills Hospital; Franklin Institute. *Thursday April 18th*, Section Meeting, Franklin Institute; Medical Society of the Woman's Hospital. *Friday, April 19th*, University of Pennsylvania Medical Society; American Philosophical Society.

Philadelphia Academy of Surgery.—The regular monthly meeting of the Philadelphia Academy of Surgery was held on Monday evening, April 1st. Dr. William L. Rodman showed a series of goitre cases, a case of chronic pancreatitis resembling carcinoma, an interesting specimen of hysterectomy with a large intraligamentous fibroid, and a large pancreatic cyst from a boy eight years of age. Dr. A. P. C. Ashurst reported six cases of multiple fractures involving the upper extremity, with the presentation of four patients; and Dr. E. B. Hodge reported a case of gallstones with subacute pancreatitis. Dr. F. O. Allen reported a case of ruptured extrauterine gestation sac during typhoid fever. Dr. H. R. Wharton read a paper on Bone Metastases in Carcinoma of the Breast, and Dr. John H. Gibbon read a paper on Dissection of the Thorax.

The Mortality of Boston.—The number of deaths reported to the Board of Health for the week ending March 30th, was 234, as against 222 the corresponding week last year, showing an increase of 12 deaths, and making the death rate for the week 20.26. The number of cases and deaths from infectious diseases was as follows: Diphtheria, 40 cases, 1 death; scarlatina, 46 cases, 3 deaths; typhoid fever, 4 cases, no deaths; measles, 9 cases, no deaths; tuberculosis, 56 cases, 15 deaths; smallpox, 1 case, no deaths. The deaths from pneumonia were 39, whooping cough 1, heart disease 13, bronchitis 7, marasmus none. There were 15 deaths from violent causes. The number of children who died under one year of age was 42, under five years of age 57, persons over sixty years of age 53, deaths in public institutions 82.

The College of Physicians of Philadelphia.—The regular monthly meeting of the College of Physicians of Philadelphia, was held on Wednesday evening, April 3rd. Dr. William S. Wadsworth read a paper on Preventive Medicine and Education; Dr. William G. Spiller and Dr. Edward Martin read a paper on A Minute Tumor of the Brain Causing Symptoms Persisting About Eight Years; Dr. Robert N. Willson, Jr., and Dr. Alexander Marcy, Jr., read a paper on Rupture of an Aortic Aneurysm in a Child of Four, with Exhibition of Specimen; and Dr. James M. Anders read a paper, Chronic Polycythemia and Cyanosis with Enlarged Spleen (Vaquez's Disease). The honorary librarian reported seventy-eight volumes added to the library during March. The chairman of the committee on the Mütter Museum reported the addition of three specimens to the museum.

The Late Dr. George Bingham Fowler.—At the stated meeting of the Medical Society of the County of New York, held on Monday March 25, 1907, the following preamble and resolution were unanimously adopted: *Whereas*, Death has removed from us one of our ex-presidents, Dr. George Bingham Fowler, a distinguished and respected member of this society; therefore be it *Resolved*, That we deeply regret the loss we have sustained, not only in our individual relations to him, but also in the various public and consulting positions which he held; and, be it further *Resolved*, That we extend our deepest sympathy to the bereaved family of the deceased, and that a copy of these resolutions be spread in full upon the minutes of the society, and be published in the medical papers. (Signed) Committee: Wendell C. Phillips, M. D., Chairman; Edward D. Fisher, M. D.; Charles N. Dowd, M. D.

The Second International Congress of Physiotherapy will be held at Rome, Italy, on October 13, 14, 15, and 16, 1907, under the presidency of Honorable Professor Guido Baccelli; Professor Carlo Colombo, secretary. Via Plinia 1, Rome. The American committee has been appointed, with Dr. Francis B. Bishop, Washington, D. C., as chairman; Dr. William Benham Snow, 349 West Fifty-seventh Street, New York, secretary; and Dr. Albert C. Geyser, New York, treasurer, with a special committee, as follows: Mechanotherapy, Dr. F. H. Morse; Phototherapy, Dr. Margaret A. Cleaves; Radiotherapy, Dr. George C. Johnston; Radiography, Dr. M. H. Kassabian; Radiumtherapy, Dr. William J. Morton; Rhythmotherapy, Dr. Morris W. Brinkman; Climatology, Dr. Charles Denison; Massive Cataphoresis, Dr. G. Betton Massey; Thermotherapy, Dr. David E. Hogg; Electrotherapy, Dr. Edward C. Titus.

The Girls' Department of the House of Refuge.—The annual report of the Girls' Department of the Philadelphia House of Refuge shows that for the year 1906, 102 girls were admitted, 47 were discharged, and 219 were remaining at the close of the year. The institution is under the charge of Mrs. Martha P. Falconer, who came from the Illinois Children's Home in January, 1906. Mrs. Falconer has made the scheme of the House of Refuge educational, with excellent results. There is a faculty of 32 persons, and instruction is given in the domestic sciences, crafts, music, and physical training. Dr. Alice Tallant, of Smith College and Johns Hopkins University, is the physical director. The girls are put on the honor system, and every opportunity is presented for them to take an interest in their own improvement and wellbeing. Since the establishment of the house in 1828, 6,116 girls have been received, usually for incorrigible conduct.

Medical Students at German Universities.—The official report from the twenty-one German universities gives a total of 7,219 medical students for the winter course of 1906, as against 6,570 and 6,080 for the summer course of 1906 and winter course of 1905, respectively. The University of Munich leads with 1,292 medical students, followed by Berlin with 1,182, while Münster counts only 63, taking the lowest place. Six universities admit female medical students: Erlangen (1); Freiburg (27); Heidelberg (25); München (43); Tübingen (2); Würzburg (6); a total of 104 female students. The total number of students is 45,136 men and 254 women; in addition to these, 5,509 persons (2,105 women) avail themselves of the privilege of attending lectures without having the right to matriculate; Berlin leads with 8,188 students, followed by Munich with 5,567, while Rostock has the smallest number of students, 645.

The Medical Association of the Greater City of New York.—The following program has been arranged for a meeting of this society to be held at the New York Academy of Medicine, on Monday evening, April 15th; Report of the Committee on the Death of Dr. George B. Fowler, Egbert H. Grandin, M. D., chairman; On the Bacteriology of Milk, by Professor H. W. Conn, Director Bacteriological Laboratory Connecticut State Board of Health, Middletown, Conn.; Clean Milk, by Dr. Mary E. Pennington, Bureau of Chemistry, U. S. Department of Agriculture, Washington, D. C.; On the Chemistry of Milk, by Professor L. L. Van Slyke, Department of Chemistry, New York State Agricultural Experiment Station, Geneva, N. Y.; Municipal Regulation of the Milk Supply, by Dr. George W. Goler, Health Officer of the City of Rochester, N. Y.; State Regulation of the Milk Supply, by Dr. E. B. Voorhees, director New Jersey Agricultural Experiment Station, New Brunswick, N. Y.; Pure Milk as Food, by Dr. Henry D. Chapin, of the Milk Commission, Medical Society of the County of New York; general discussion.

Franklin Institute.—The officers and friends of the Franklin Institute are endeavoring to obtain a sum of \$160,000 from the Board of City Trusts of Philadelphia, to be used for the purpose of purchasing a new site and erecting a building more suitable to the needs of the institute. This sum of \$160,000 was originally appropriated for a museum and art gallery in Fairmount Park, in 1895. For some reason or other this money has never been expended and as the friends of the Franklin Institute have raised \$200,000 by their own efforts, it is thought that it is likely that the former sum can be obtained from the Board of City Trusts. The institute at present occupies a small building on Seventh Street, below Market, in which, in addition to the scientific meetings, which we note from time to time in our item of scientific society meetings in Philadelphia, classes for the instruction of such young men of the city of Philadelphia as desire it in scientific branches, both theoretical and applied, are held. The institute is one of the many organizations in Philadelphia which trace their origin to the direct influence of Benjamin Franklin.

One of the Results of Indiscriminate Forest Destruction.

—An interesting item of news appeared in the daily press recently to the effect that the Pennsylvania Railroad Company has employed Mr. E. A. Sterling, who was recently in the employ of the United States Government as forester. Mr. Sterling will devote his time to the development of forestry along the Pennsylvania lines, giving particular attention to the raising of trees suitable for cross ties. It is understood that since the recent accident to the St. Louis limited express the Pennsylvania Railroad Company has decided to abandon steel ties. This move on the part of the Pennsylvania Railroad is a curious result of the lack of foresight of the railroad people and others who have been engaged for the last hundred years in developing this country. At first, with great prodigality, they cut down the forests, with the result that the streams in the neighborhood deliver a much smaller volume of water and the climate becomes somewhat less salubrious. Then, several years after this damage had been done, it is discovered that trees are necessary, not only for the keeping up of the streams of the countryside, but also for the supply of material which is necessary for the maintenance of a great railroad.

Society Meetings for the Coming Week:

MONDAY, April 14th.—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Hartford, Conn., Medical Society.

TUESDAY, April 16th.—New York Academy of Medicine (Section in Medicine); Tri-Professional Society of New York; Medical Society of the County of Kings, N. Y.; Binghamton, N. Y., Academy of Medicine; Buffalo Academy of Medicine (Section in Pathology); Ogdensburg, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Clinical Society of Elizabeth, N. J., General Hospital.

WEDNESDAY, April 17th.—New York Academy of Medicine (Section in Genitourinary Diseases); Woman's Medical Association of New York City (New York Academy of Medicine); Medical Society, New York; New York Society of Dermatology and Genitourinary Surgery (private); Buffalo Medical Club; New Jersey Academy of Medicine (Jersey City); New Haven, Conn., Medical Association.

THURSDAY, April 18th.—New York Academy of Medicine; Newark, N. J., Medical and Surgical Society; German Medical Society, Brooklyn.

FRIDAY, April 19th.—New York Academy of Medicine (Section in Orthopaedic Surgery); Clinical Society of the New York Postgraduate Medical School and Hospital; East Side Physicians' Association of the City of New York; New York Microscopical Society.

Infectious Diseases in New York:

As reported to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending April 6, 1907:

	April 6.		March 30.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	92	18	120	15
Smallpox	1	..	..	..
Varicella	73	..	70	..
Measles	415	21	419	5
Scarlet fever	392	16	379	17
Whooping cough	74	12	54	9
Diphtheria	319	38	311	41
Tuberculosis pulmonalis	386	211	434	221
Cerebrospinal meningitis	18	10	28	20
Totals	1,773	326	1,815	328

The Health of Philadelphia.—During the week ending March 30, 1907, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Malarial fever	1	1
Typhoid fever	128	19
Scarlet fever	31	2
Chickenpox	35	0
Diphtheria	44	13
Cerebrospinal meningitis	30	14
Measles	42	2
Whooping cough	23	6
Tuberculosis of the lungs	88	77
Pneumonia	82	94
Erysipelas	7	4
Cancer	8	18
Mumps	12	0
Septicæmia	4	2
Antitoxin	1	0

The following deaths were reported from other transmissible diseases; Tuberculosis, other than tuberculosis of the lungs, 11; dysentery, 2; diarrhoea and enteritis, under two years of age, 23; puerperal fever, 5. The total deaths numbered 655, in an estimated population of 1,500,595, corresponding to an annual death rate of 22.61 in a thousand population. The total infant mortality was 139; under one year of age, 107; between one and two years of age, 32. There were 31 still births, 16 males and 15 females. Friday, March 29th, and Saturday, March 30th, were very warm. On the former day the official thermometer registered 86 degrees; on the latter date 70 degrees was the highest point recorded. The total precipitation for the week was 0.02 inch.

Statement of Mortality of Chicago for the Week Ending March 30, 1907, compared with the preceding week, and with the corresponding week of 1906. Death rates computed on United States Census Bureau's figures of midyear populations—2,107,620 for 1907, 2,049,185 for 1906:

	Mar. 30, 1907.	Mar. 23, 1907.	Mar. 31, 1906.
Total deaths—all causes	744	699	582
Annual death rate in 1,000	18.40	17.29	14.80
Males	431	398	306
Females	313	301	276
Age			
Under one year of age	159	151	126
Between 1 and 15 years of age	68	67	50
Between 15 and 20 years of age	17	36	49
Between 20 and 60 years of age	335	310	237
Over 60 years of age	135	135	120
Important causes of death			
Measles	11	14	20
Diphtheria	45	55	37
Tuberculosis	23	20	15
Consumption	85	104	70
Scarlet fever	34	27	23
Cerebrospinal meningitis	17	12	14
Smallpox	8	9	8
Other diseases	55	57	48
Influenza	3	5	5
Intestinal diseases, acute	30	24	28
Measles	3	5	5
Neuritis	27	34	30
Pneumonia	172	137	102
Scarlet fever	16	24	10
Smallpox	0	1	0
Smallpox	11	8	8
Typhoid fever	5	6	7
Whooping cough	29	25	28
Whooping cough	8	7	3
All other cause	162	128	121

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

1. The Clinical History and Recognition of Tuberculous Meningitis. By KARL KERNIG.
2. Drainage of the Hepatic Duct, Considered Especially in Serious Infectious Processes of the Liver. By W. J. CALVERT.
3. Some Well Known Synthetic Chemicals and Their Relation to the Pure Food and Drugs Act. By LYMAN F. KEBLER.
4. Is Scarlet Fever a Streptococcus Disease? By HEKTOEN.
5. Pulsus Paradoxus in Pericarditis with Effusion. By CALVERT.
6. The Racial Aspect of Tuberculous Meningitis. By KARL KERNIG.
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9. Some Well Known Synthetic Chemicals and Their Relation to the Pure Food and Drugs Act. By LYMAN F. KEBLER.
10. Is Scarlet Fever a Streptococcus Disease? By HEKTOEN.

1. The Clinical History and Recognition of Tuberculous Meningitis. Kernig observes that the diagnosis of tuberculous meningitis in the early stages of the disease is feasible to-day, whereas it was well nigh impossible formerly. The slow onset interrupted by periods of irritability, etc., the irregularity of the pulse and respiration, the low or normal temperature, the absence of hyperæsthesia, the lack of appetite, the discovery of hydrocephalus by percussion of the skull will all lead us to establish a meningitis of the tuberculous type. If after the above mentioned symptoms, an examination of the subarachnoid fluid, in the majority of cases, we will fix the diagnosis beyond a doubt. The examination of the fundus of the eye for changes which accompany tuberculous meningitis in the initial stage, although successful in a certain proportion, leaves us without any positive data in the majority of cases. If we compare this with what is known of the onset of several forms of meningitis, especially those of the pyogenic and pneumococcal type, we will see that there can be no question, certainly in the vast majority of cases, as to the possibility of making a diagnosis. Aside from the examination of the puncture fluid, the onset in the acute forms of meningitis of the epidemic type is always abrupt and unmistakably so. The high temperature also in the acute cases of the suppurative type, the rigidity, the constant presence of Kernig's sign, and the active hyperæsthesia will complete the picture. More difficult will be the diagnosis as to the specific form of meningitis in children below two years of age, who have been sick for some length of time. In these cases we know that the posterior basic forms of meningitis with their low or normal temperatures, the hydrocephalus, the low leucocyte count, the lack of hyperæsthesia, the absence of anything even in the puncture fluid in some cases to aid us in a diagnosis, will make us fall back on the history of the case as to its acute onset before we can conclude whether we have a tuberculous process present or a chronic condition following an acute attack of cerebrospinal meningitis.

3. Is Scarlet Fever a Streptococcus Disease?—Hektoen concludes his observation in saying that the predominant feature of the bacteriology of the throat in scarlet fever is the constant presence of large numbers of *Streptococcus pyogenes*; that the overwhelming majority of the so called complications and of the deaths in scarlet fever are due to invasion of the tissues and the blood by this microbe; and that in scarlet fever, even when mild, the organism gives evidence of sys-

temic action, that the streptococcus is the cause of the toxicococcal index and probably also by the formation of streptococcal agglutinins. There is, therefore, no escape from the conclusion that *Streptococcus pyogenes* or some form thereof plays a most significant part in the scarlatinal process. But scarlet fever is not wholly a streptococcus disease. In view of the paramount importance of streptococci in the course and outcome of scarlet fever the chief significance of the pure scarlatinal virus would seem to lie in its power to open the door, so to speak, to streptococci. From this point of view the need for potent antistreptococcus remedies is as urgent and their eventual specific effects as logically explainable as would be the case were scarlet fever considered a streptococcus disease pure and simple.

7. Pulsus Paradoxus in Pericarditis with Effusion.—Calvert remarks that pericardial effusion produces stenosis of the vena cava, which stenosis is relatively compensated by a rise in venous pressure, but this compensation fails when the pericardial pressure is greater than the venous pressure. Owing to respiratory change in venous pressure the degree of broken compensation varies in inspiration and expiration—greatest in inspiration, least in expiration. The variation in compensation carries varying quantities of blood to right heart (and to general circulation), least in inspiration, greatest in expiration. The respiratory variation in quantity of blood passing to general circulation is sufficient to explain the paradox.

8. Drainage of the Hepatic Duct.—Cumston mentions three principal methods which may be considered as possessing special applications. In the first place, we have drainage of the cystic duct and gallbladder. The latter having been opened, a drainage tube is introduced through the dilated cystic duct down to the hepatic duct; in other words, this being complementary to cholecystostomy in general. Secondly, we have drainage by the choledochus after incision of this duct, the drainage tube being pushed down to the hepatic duct. Both of these procedures may be classified under the head of indirect drainage of the hepatic duct as distinguished from the third procedure, which he calls direct drainage of the hepatic duct because the canal is directly incised and a drain introduced into its lumen. As to exceptional methods we have two, namely, trans-hepatic hepaticostomy, the incision being made directly through the hepatic parenchyma, followed by opening the dilated hepatic duct. The second technique may be termed infrahepatic hepaticostomy. Here the incision of the dilated hepatic duct is made directly into the latter as it projects under the anterior border of the liver. The first three procedures are employed currently according to the given case, while the last two so far have been employed in a restricted number of cases only. Drainage of the hepatic duct has for its end to temporarily give exit to bile directly from the principal biliary passages, especially when there is an infection of the organism resulting from some infectious process of the liver. Such drainage is absolute, because it is established in the hepatic duct at its exit from the liver, and, if it is well carried out, the bile can neither reach the duodenum nor the gallbladder. Now, since all the bile is drained away, the drainage should only be temporary, because the organism cannot be continually deprived of the bile, or, more properly speaking, the small intestine is not able to get along without such a necessary organic fluid for the digestion.

9. Some Well Known Synthetic Chemicals and Their Relation to the Pure Food and Drugs Act.—Kebler mentions in this paper the use of harmful preservatives in food products which is forbidden. The exact status of the harmful nature of certain preservatives, he says, is not definitely settled at present. Among the most conspicuous preservatives used during recent years are

the synthetic chemicals known as salicylic acid and benzoic acid and their salts. The experimental results obtained in the Bureau of Chemistry in connection with salicylic acid and salicylates have just been published in Bulletin 84, part 2, from which he quotes: "There has been a general consensus of opinion among scientific men, including the medical profession, that salicylic acid and its compounds are very harmful substances, and the prejudice against this particular form of preservative is perhaps greater than against any other material used for preserving foods. This is due not only to the belief in the injurious character of salicylic acid, but perhaps is especially due to the fact that it has in the past been so generally used as an antiseptic. That salicylic acid should be singled out especially for condemnation among preservatives does not seem to be justified by the data which are presented and discussed in this bulletin. That it is a harmful substance, however, seems to be well established by the data taken as a whole, but it appears to be a harmful substance of less virulence than has been generally supposed. The addition of salicylic acid and salicylates to foods is, therefore, a process which is reprehensible in every respect, and leads to injury to the consumer, which, though in many cases not easily measured, must finally be productive of great harm." Benzoic acid and the benzoates are by many considered less harmful than the salicylates. Whether or not this is correct remains to be established by future experiments and observations. This much, however, is certain, that whenever it is possible, and usually it is, food products should be prepared without the use of any questionable preservative.

MEDICAL RECORD.

April 6, 1907.

1. Gastroscopy, By CHEVALIER JACKSON.
2. Harmful Involution of the Appendix, By ROBERT T. MORRIS.
3. The Cause and Cure of Cancer: An Hypothesis and a Practical Suggestion Based Thereon, By ARTHUR C. JACOBSON.
4. Observations on the Diagnostic and Prognostic Value of the Eosinophiles in the Circulating Blood; Together with a Case of Rectal Infection by *Schistosoma Hematobium*, By LEONARD BLUMGART.
5. A Report of Four Luctic Cases Unassociated with Observable Secondary Manifestations, By GEORGE M. MACKEE.
6. An Early Case of Formal Operation for the Separation of Joined Twins (*Xiphopagus*), By CHARLES F. KIEFFER.

1. **Gastroscopy.**—Jackson observes that the attempts made in the past to examine the stomach gastroscopically were abandoned because no practical instrument was devised. It is not simply a feat, but has a field of usefulness which will increase as our skill and knowledge increase. It is useful for the detection and removal of foreign bodies, the diagnosis of many pathological conditions, as inflammation, ulceration, scars, neoplasms, dilated vessels, and the treatment of at least one of these conditions, namely, benign ulcer. When the gastroscope shall have gained its deserved recognition, malignant disease of the stomach will be diagnosed in many instances sufficiently early to give the abdominal surgeon a fair chance. With the gastroscope the author has made a diagnosis of chronic gastritis in two cases; gastropsis in two cases; malignant disease of the cardia in two cases; of the pylorus in three cases; of peptic ulcer in five cases, one of which was cured by direct applications. He has removed one foreign body from the stomach, being a forceps jaw lost therein by himself. In one case the gastroscopic findings enabled a diagnosis of gastric syphilis. Negative results from gastroscopy are of limited value, because we cannot be certain that no lesion exists in the

unexplorable area. But with greater perfection and skill this unexplorable area will be very much diminished. But gastropsis should be made under anaesthesia, ether preferable. Chloroform is unsafe alone, though it may be added as needed for relaxation. Cocaine, though an adequate analgesic, does not stop the retching which will interrupt so constantly. The explorable area with a stomach of the classic shape and position is the middle third. More than a third of the greater curvature is readily seen, likewise of the anterior and posterior walls at their inferior portions, the lateral extent of the field diminishing upward toward the oesophageal orifice. The fundus and the pyloric ends can be brought within range of the gastroscope by the external assistance of an expert abdominal manipulator, the tube being withdrawn within the oesophagus until the new field is in place. In a patient with a normal oesophagus and stomach, the only danger is that of ether anaesthesia. An ulcer of the oesophagus or stomach constitutes an exceedingly slight risk, unless the ulcer bed be so thin that it would perforate within a few days by erosion or by the normal spontaneous movements of the stomach. In chronic inflammatory states of the stomach no risks are incurred. In malignant disease a specimen may be taken with little risk in fungating conditions, but in flat ulcerations suspected of malignancy, the biting out of the edge of the ulcer, though very easy of accomplishment, is unjustifiable. The danger of hæmorrhage in gastroscopy is *nil* in the normal stomach; in the diseased stomach it exists only in cases which are about to bleed, anyway.

3. **The Cause and Cure of Cancer.**—Jacobson advances a new theory of the cause of cancer, in which he takes account both of Cohnheim's theory and of parasitism. He says that at that degenerative period of life which is so closely related to the occurrence of cancer, when cessation of the sexual functions and atrophy of the sexual organs supervene, there may be a quota of that dynamic element which he calls physiological energy, which finds itself at a loss for lawful occupation in the economy. What more "natural" than that, being at liberty, so to speak, it should expend its force in ways biological but mischievous? As Nature abhors a vacuum, so she abhors unused energies. And so cancer is produced. For the ætiology of a benign growth he accepts Cohnheim's theory, the type of growth being determined by what type of embryonic cell is operative, plus perhaps trauma, inducing a *locus minoris resistentiæ*. Here we may conceive, says the author, theoretically, of parasites furnishing the source of irritation no less than in the case of malignant growths—an incidental factor in both instances. We may also conceive of a misplaced embryonic cell as constituting *per se* a competent source of irritation, without introducing assumptions of additional factors in traumatism, due to cytology of some sort not necessarily related to traumatism in the conventional sense. For the ætiology of malignant growths we must postulate a further factor, perverted energy. We must also postulate a selective affinity of this perverted energy for epithelial tissues, they constituting the media for the appearance of cancer in tangible form for the reason that they are most exposed to cytolytic damage and most wanting in resistance because of their high state of differentiation. We know from sad experience that radical extirpation is not usually enough. Something is lacking. Mere extirpation of the growth does not extirpate the fundamental factor. The operation exercises a salutary effect temporarily, but the cancer recurs in or near the scar when the process of repair is complete, or shortly subsequent thereto. We must in some way continue to harness the force concerned until such time as it shall cease to operate.

4. Observations on the Diagnostic and Prognostic Value of the Eosinophiles in the Circulating Blood.—Blumgart remarks that it is of importance not only to count the leucocytes, but to make a careful differential count, and to repeat it frequently throughout the course of the disease, until in fact the patient is dismissed. The entire disappearance or very marked diminution of the eosinophiles, together with a distinct leucopenia, goes far to establish the diagnosis of typhoid fever in doubtful cases. A normal or increased percentage of eosinophiles, other things being equal, speaks against typhoid. This holds good, of course, only for the febrile course of the disease. In cases of undoubted typhoid, the presence of eosinophiles, even in small numbers, during the first week is a favorable sign and speaks for a probable mild type. No typhoid fever patient should be considered cured or dismissed from observation before he has regained permanently, at least, a normal percentage of eosinophiles.

5. A Report of Four Luetic Cases Unassociated with Observable Secondary Manifestations.—MacKee states that the physician must recognize and assume the responsibility of a positive diagnosis of syphilis before advising the recognized course of constitutional treatment. He may consider the features of a given case sufficient to make a diagnosis in the primary period, but the establishment of a diagnosis in this period is attended with considerable difficulty and inasmuch as the early use of mercury may modify the secondary symptoms to such an extent as to produce an hiatus in the patient's history, one certainly assumes a tremendous responsibility by this method. Although one cannot absolutely depend upon the development of secondary symptoms in every case, it is undoubtedly a very rare occurrence for them to be overlooked by a physician who expects to see them appear. It would seem preferable, therefore, to accept this slight chance of ignoring a case rather than risk the possibility of condemning many, or even one, innocent patient to a life of mental misery and unnecessarily giving him several years of antisyphilitic treatment. A careful search for the *Spirocheta pallida* should be made in the primary and secondary lesions of every case, for if they are demonstrated one will add considerable strength to the diagnosis. The time is probably not far distant when a diagnosis of chancre can be based upon a diagnostic serum or by the microscopical examination of a smear preparation and the constitutional treatment at once instituted. It is not beyond reasonable expectation to anticipate the development of an antiluetic serum, doing away with the time honored mercury.

BRITISH MEDICAL JOURNAL.

March 23, 1907.

1. A Report on Clinical Experiences With Spinal Anæsthesia in One Hundred Cases, and Some Reflections on the Procedure, By A. E. BARKER.
2. Infiltration Anæsthesia in Major and Minor Surgery, By G. J. ARNOLD.
3. Cholelithiasis, By E. S. BISHOP.
4. The Removal of Enlarged Tonsils, By R. MACLAREN.
5. A Case of Gastroenterostomy Combined with Gastrotomy, for Ulceration of the Stomach, Caused by Swallowing Hydrochloric Acid, By B. G. A. MOYNIHAN.
6. Insanity: Its Causes and Increase (*Lumleian Lectures, II*), By G. H. SAVAGE.

3. Cholelithiasis.—Bishop states that the essential condition which underlies all cases of cholelithiasis, whether accompanied by symptoms which cause its recognition during life or not, is a catarrhal inflammation of the biliary passages due to infection from certain microorganisms, and that the most frequent of these are the typhoid and the colon bacilli. Other organisms have been found, but in much smaller numbers. The infection may reach the biliary passages through the

duodenal opening, through the portal circulation, through the systemic circulation, or through the lymphatics. At first sight the duodenal opening would seem to be the most likely avenue of infection, but as a matter of fact it is not, the explanation being that there are few microorganisms in the duodenum and a free flow of bile through the opening. Again, the virulent organisms present in the intestine do not cause the formation of gallstones, but rather excite acute inflammatory conditions. An attenuated infection, such as would give rise to calculus formation, in a majority of instances probably reaches the biliary passages by way of the portal vein. Infection by means of the systemic and lymphatic systems occurs, but is probably rare. The steps of the morbid processes are usually these: The small intestine contains normally, but especially during the process of digestion, numerous microorganisms and toxins. These are of course increased in number and virulence during such diseases as dysentery, typhoid fever, influenza, etc., and they are also multiplied by the ingestion of decomposing or decomposable food. These organisms and toxins are taken up by the radicles of the portal vein and carried to the liver, where they are rendered inert and excreted by the bile. Should the resistance of the liver cells be decreased or the toxins sufficiently powerful to paralyze them, some of these toxins and bacteria, much weakened in virulence, may pass through and be excreted with the bile, and produce desquamation of the epithelium of the excretory passages, first in the gallbladder mucosa, since they remain longer in contact with that membrane, thus permitting the penetration of the organism into its walls, and the consequent subacute inflammation which follows their attack. Should the toxins be still more virulent or the resistance of the hepatic cells still further lessened, some may pass into the systemic circulation and cause the headaches, confused mental sensations, and gastric disturbances grouped under the term "biliousness." The morbid condition may pass away; if not, the changes in the gallbladder may cause the deposition of so much cholesterin from the decreasingly vitalized epithelium that it cannot be dissolved by the new bile. The bilirubin calcium is also precipitated from the bile, and acts as a cement to the original droplets of cholesterin and calculi are thus formed. Even after the formation of these concretions the walls of the gallbladder and passages may become normal, and the patient never knows that he has a calculus. The classic symptoms of gallstones, pain, spreading to the right shoulder, jaundice, tumor, clay colored stools, and bile in the urine, must be modified. They are never all present at the same time. Pain, while being the most constant symptom, never rises as high as the shoulder. Tumor is far more indicative of other conditions. Jaundice is only seen when there is some obstruction to the outflow of the bile. Clay colored stools and biliary urine are seen in simple catarrh of the ducts, and are most marked in chronic pancreatitis or cancer of the head of the pancreas. But there is a new symptom, first described by Robson and Murphy, which is constant, reliable, and pathognomonic, this is tenderness on pressure. Tenderness of the biliary channels is one inevitable symptom which is always present, not only during an attack, but persisting afterwards. The tenderness is brought out by compressing the vessels upon the calculus against the firm backing of the liver itself. The patient, with the lower chest and abdomen bared, sits on a stool with his back to the examiner. The latter places both hands on the front of the abdomen, below the costal margins, and presses inwards and then upwards; the patient bends forward and breathes slowly and deeply. When the tender gallbladder comes near the right hand during inspiration which forces the liver downward, pain is experienced and the act of inspiration abruptly checked.

If the result of such examinations is negative, the possibility of biliary calculi is eliminated.

6. **Insanity.**—Savage, in his second Lumleian lecture, discusses the causes of insanity and sums up his conclusions as follows: Heredity has but a small share in the causation of general paralysis. It is more frequently seen in relation to melancholia than to mania. All forms of insanity, especially sensory hallucinations and delusions with fixed obsessions, are chiefly dependent on hereditary taint. Idiocy, mental weakness, and eccentricity, are common in the children of physically decadent parents. There is no such thing as the direct transmission of any form of insanity, but there is danger of the transmission of nervous instability leading in turn to mental disorder. Insane parents may have sane children. Consanguinity alone does not produce mental disorder. Eccentric and nervous (not insane) parents may give rise to whole families of idiots or defectives.

LANCET.

March 23, 1907.

THE PERMANENT DEFENCES OF THE BODY (L. S. and Gale Lecture).

By B. L. ABRAHAMS.

THE ACUTE DEFECTIVE OR DEFICIENT CONDITIONS OF THE NERVOUS SYSTEM (Goulstonian Lectures, II).

By E. F. BUZZARD.

3. The Renal Function in Its Relation to Surgery (Hunterian Lectures, II).

By J. W. T. WALKER.

ACUTE AND CHRONIC DISEASES OF THE MENSTRUUM.

By E. F. BUZZARD and J. A. MURRAY.

5. On Opsonins and Immunity.

By J. L. BUNCH.

NEW TESTS FOR ACETONE IN THE URINE.

By B. J. F. JAMES.

7. The Role of the Blood Plasma in Disease (V).

By H. C. CAMPBELL.

1. **The Defences of the Body.**—Abrahams, in his Arris and Gale lecture, discusses what he calls the permanent defences of the organism—defences which are always ready for action and are constantly coming into effect throughout life. They are to be distinguished from those which are only developed in circumstances of special need, these last are to be grouped under the head of immunity. Were it not for some mechanism or series of mechanisms within the body we should be poisoned every day of our lives, or would die speedily of some infectious disease. These mechanisms can be divided into three chief classes, depending upon their evolution in succession to meet the needs entailed. First there is the physiological reserve or power which each organ, each tissue, and no doubt each cell, has of calling up its own latent energy in its defence. Second, there is the biochemical interrelation of organs, by which one of them can, by chemical means, evoke in another changes which act in its defence. Third, the latest and most complex development is the nervous mechanism by which the main organs can call to their aid, not only each other, but the nervous system as well. There is a definite part of the nervous system set apart for the sole purpose of correlating the organs in this way.

2. **Acute Infections of the Nervous System.**—Buzzard, in his second Goulstonian lecture, discusses acute poliomyelitis, and draws the following conclusions: 1. Acute poliomyelitis is an acute specific fever occurring sporadically and epidemically, differing from many others, but resembling some, variola for instance, in the facts that its lesions may be discrete or confluent and that its results may be permanent. 2. Its essential lesion is an inflammation of the interstitial tissue of the central nervous system due to the presence of micro-organisms or their toxins probably in the blood (but possibly in the lymph) circulating in that system. 3. The fact that the gray matter suffers more than the white matter is explained by the greater vascularity of the former and the resistant character of the compo-

nent parts of the latter. 4. The same morbid process underlies some cases of encephalitis both of the brain stem and the cerebrum, among which may probably be included many examples of infantile hemiplegia. 5. The bacteriology is at the present time practically an unknown quantity. Bacteriological investigation of the blood as well as of the cerebrospinal fluid is indicated, and more complete examination of other organs, especially of the intestines.

6. **Acetonuria.**—Jackson Taylor describes a modification of the sodium nitroprusside test for acetone in the urine. Strong ammonia is used instead of the potash solution. On adding the ammonia to a solution of sodium nitroprusside and urine the ammonia solution remains on the top; thus there is a clear solution uppermost with the urine solution below. Should acetone be present, even in minute quantity, a well marked and absolutely characteristic ring of magenta (or petunia) appears within from one to three minutes and gradually spreads upwards, pervading the whole of the ammonia solution if acetone is present in considerable amount. The strength of the solution of sodium nitroprusside is not important, but it must be prepared fresh.

LA PRESSE MEDICALE.

March 16, 1907.

1. Schuchardt Schauta's Operation—Colpohysterectomy Through the Vulvoperineum.

By R. PROUST.

Clinical Examination of the Scapular Region.

By P. DESFOSSES.

3. Mercurial Stomatitis.

By MAURICE LETULLE.

4. Enucleation of Fibromata of the Nasopharynx.

By A. S. BRADY.

1. **Colpohysterectomy Through the Vulvoperineum.**

—Proust describes in detail the various steps of this operation, and renders the description clearer by means of nine excellent illustrations. He also gives the statistics of the results obtained by Professor Schauta, which seem to compare favorably with those obtained by other methods of operation.

2. **Clinical Examination of the Scapular Region.**—Desfosses divides the anomalies of the scapula into three classes: (1) That in which the scapulæ are parallel and on the same level, but are detached from the thorax; (2) that in which the scapulæ are on different levels; (3) that in which the spines of the scapulæ are not parallel. These various vicious attitudes of the scapula are shown in a number of illustrations.

3. **Mercurial Stomatitis.**—Letulle, after a thorough study of this condition, concludes that there is a true acute mercurial stomatitis which is both toximetalline in its origin and infectious in its localization.

March 20, 1907.

1. Large Cancer of the Pancreas and Diabetes.

By A. BRAULT and P. AMEUILLE.

2. Ionic Sclerolysis.

By P. DESFOSSES and A. MARTINET.

3. A Cause of Error in the Clinical Examination of Albumin.

By L. DEVAL.

1. **Large Cancer of the Pancreas and Diabetes.**

—Brault and Ameuille report the case of a man, fifty-three years of age, who had suffered for some time before his death from diabetes mellitus. Autopsy revealed a cancer of the pancreas which had involved the whole of that organ completely. There were small secondary deposits in the liver which was scarcely enlarged, and the gallbladder of which was not distended. A secondary deposit was also found in the fatty capsule of the right kidney, but none was found elsewhere.

2. **Ionic Sclerolysis.**—Desfosses and Martinet state that the sclerolytic action of the constant current is incontestable and is superior to massage for the production of resolution of ankyloses. It is manifested under the negative electrode. The solution to be preferred for the purpose is a two per cent. solution of sodium chloride and of sodium salicylate. The séances

should last from half an hour to an hour, the electrodes should be large, the intensity medium, from 50 to 80 milliamperes. Ankyloses may be classed according to the facility and rapidity of resolution under this treatment as (a) posttraumatic; (b) postinfectious; (c) postrheumatic.

LA SEMAINE MEDICALE

March 13, 1907.

1. Puerperal Eclampsia and Arterial Tension, By H. VAQUEZ.
2. Albuminuria of Prostatic or Seminal Origin.

March 20, 1907.

- Mechanism and Pathogeny of Hernia of the Cæcum.
By P. CAVAILLON and R. LERICHE.

Mechanism and Pathogeny of Hernia of the Cæcum.

—Cavaillon and Leriche describe three anatomical types of hernia of the cæcum, the hernia with a complete sac, the hernia with an incomplete sac, and the hernia without a sac, which are explainable by the varying relations between the cæcum and the peritonæum. The cæcum is completely surrounded by the peritonæum, and lies free in the iliac fossa attached to the wall by the ascending mesocolon and the termination of the mesentery. Sometimes there is a short mesocæcum, and the cæcum is more free. Exceptionally its posteroexternal face is applied directly to the cellular tissue of the iliac fossa, and it is retroperitoneal. A hernia of a cæcum without a mesocæcum has a complete sac, that of one with a mesocæcum an incomplete sac, and the retroperitoneal no sac at all.

BERLINER KLINISCHE WOCHENSCHRIFT.

March 11, 1907.

1. Hysterical Insanity, By RÄCKE.
2. The Path of Infections in the Lymphatic Tracts, By F. WELEMSKY.
3. Concerning Retropharyngeal Tumors, By M. LITTHAUER.
4. Concerning a New Steam Sterilizer for Catheters, with Protective Receptacles for the Individual Catheters, By A. BLOCH.
5. The Problem of Cancer, By B. FISCHER.
5. Chemotherapeutical Studies of Trypanosomata (Continued), By P. EHRLICH.
7. The Physical Treatment of Tabes Dorsalis (Continued), By E. TOBIAS and E. KINDLER.
8. The African Sleeping Sickness, By K. KUTSCHER.

1. **Hysterical Insanity.**—Räcke reports two cases of this nature. He divides these hysterical psychoses into three principal types, the first characterized by excitement followed by a stuporous condition, the second depressive, in which melancholia and hypochondria prevail, the third paranoiac. These three types do not seem to the reviewer to be very sharply defined, but to merge more or less into each other.

2. **The Path of Infections in the Lymphatic Tracts.**—Welemsky contributes a controversial article in defense of the views he has previously advanced and in opposition to the position recently taken by Beitske.

3. **Retropharyngeal Tumors.**—Litthauer reports two cases. One was a growth about as large as a pigeon's egg on the right side of the posterior wall of the pharynx of a man, forty years of age, which disappeared under treatment with potassium iodide, and was therefore diagnosed to be a gumma. The other was a fibrosarcoma of the left side of the posterior wall of the pharynx. After removal it measured 9 cm. long, 6.5 cm. broad, and 5 cm. thick.

5. **The Problem of Cancer.**—Fischer sharply criticizes the recent paper of Ruelff on this subject.

7. **The Physical Treatment of Tabes Dorsalis.**—Tobias and Kindler deal finally with the compensatory exercise treatment, hydrotherapy, and electrotherapy.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

March 19, 1907.

1. Concerning a New Proposition with Regard to the Use

of Phosphorus in the Nourishment and Treatment of Children. By MANCHOT.

2. Primary and Secondary Causes of the Difficulty in Removing Canulas After Tracheotomy When Serum is Used, By HANS.
3. Concerning the Discontinuance of Phagocytosis With Complement Union, By HAENTJENS.
4. Concerning the Persistence of Polyuria in Diabetics After Complete Disappearance of the Glycosuria and the Transition from Diabetes Mellitus to Diabetes Insipidus, By TESCHEMACHER.
5. Report of Three Hundred and Fifty Extirpations of the Lachrymal Sac, with Remarks in Regard to Indications and Technique, By BÄUMLER.
6. The Treatment of Detachment of the Retina, By DEUTSCHMANN.
7. The Treatment of Typhoid Fever with Pyramidon, By LIEB.
8. Iodofan, a New Organic Preparation of Iodine, as a Substitute for Iodoform, By EISENBERG.
9. Meningocele Vertebralis Combined with Teratoma, By BULL.
10. A Case of Polyserositis, By WAGNER.
11. Dermatological Contributions: 1. Symptoms of Revaccination after Attacks of Fever. 2. Acute Eczema Artificially Produced by Sealing Wax on a Ring, By RÄCKE.
12. Aspirin as an Analgesic in Renal Colic, By HORNUNG.
13. Cerebrospinal Meningitis and Its Treatment with Bier's Stasis and Lumbar Puncture, By VORSCHÜTZ.
14. Ramon y Cajal, By SOBOTTA.

1. **A New Proposition with Regard to the Use of Phosphorus in the Nourishment and Treatment of Children.**—Manchot, in spite of the deleterious and sometimes fatal effects produced by the administration of phosphorus, succeeded in obtaining great improvement in two children by the administration of this drug in minute doses in butter and by subcutaneous injection. He finds that hemp seed, particularly that from Russia, contains a much larger proportion of phosphorus than most seeds, and that it is a very useful food for children who are rhachitic or have other nutritive disorders.

2. **Primary and Secondary Causes of the Difficulty in Removing Canulas After Tracheotomy When Serum is Used.**—Hans concludes that in the great majority of cases the primary cause is the increased force of aspiration, and therefore the rule that the canula is to be removed only when the child with diphtheria has been able to breathe for a night or longer with an obstructed canula is not to be followed. The best time to remove the canula is from the third to the fifth day, according to the severity of the case. The attempt to remove the canula without prolonged preliminary tests may be made in favorable cases at the end of forty-eight hours. High tracheotomy, particularly through the cricoid cartilage, is performed quicker and easier, and also with less assistance than the low operation, but the latter, when a timely operation, guards against the suction of the infection into the deeper air passages. The low operation also facilitates the removal of membranes from the trachea and bronchi, which are particularly apt to form in older children. During the first six days there is no difficulty in reintroducing a canula which has been removed too soon, when necessary. Since the introduction of the use of serum the mortality in these cases has fallen from 50 to 70 per cent. to 10 to 20 per cent.

4. **Persistence of Polyuria in Diabetics After Disappearance of the Glycosuria.**—Teschemacher reports three cases in which after the sugar had disappeared from the urine a condition of diabetes insipidus persisted. In the third case, a boy, seventeen years of age, when he first came under observation, there was diabetes mellitus for about a year, followed by diabetes insipidus for thirteen years and then a return of the glycosuria for about eight months. In this case the

author is inclined to ascribe the cause to a central affection in the region of the fourth ventricle.

5. Extirpation of the Lachrymal Sac.—Bäumler says that extirpation of the lachrymal sac is indicated in all cases in which an immediate removal of the source of infection is necessary for the protection or preservation of the eye, and also in those in which other methods of treatment of a persistent purulent disease of the lachrymal passages have been tried in vain, so that a definitive cure can be expected in no other way. In performing the operation the diseased sac should be shelled out, while the surrounding tissues, especially the periosteum, should be spared as much as possible. The after treatment is very simple in the majority of cases.

6. The Treatment of Detachment of the Retina.—Deutschmann discusses Uthoff's paper on this subject, and incidentally urges the claims of his own methods of operation.

7. The Treatment of Typhoid Fever with Pyramidon.—Leick states that during the last four years he has treated 113 patients with typhoid fever, including some very severe types, with eleven deaths. Of these eleven one patient died on the first day, two on the second, one on the fourth, and one on the fifth day after coming under observation, and therefore should, in his opinion, not be taken into account in the consideration of the treatment adopted. If these five cases are deducted there remain 108 cases of typhoid fever treated with pyramidon, with only six deaths, a very favorable result.

8. Iodofan.—Eisenberg considers iodofan to be equally as efficient as iodoform, and at the same time to be free from all the bad after effects frequently produced by the latter drug.

9. Meningocele Vertebralis Combined with Teratoma.—Bull presents a very full description of a case of this nature with the macroscopical and microscopical appearances. He concludes that the teratoma was the primary trouble, and that the spina bifida, the meningocele, and the hydromyelia were secondary.

10. A Case of Polyserositis.—Wagner describes a case of bilateral pleurisy with exudation, pericarditis with exudation, and peritonitis with exudation, which he terms one of polyserositis. Treatment consisted of the application of an ice bag to the region of the heart, rest in bed, and light, mixed diet. The patient recovered.

13. Cerebrospinal Meningitis.—Vorschütz strongly recommends the use of Bier's stasis and of lumbar puncture rather than that of any other form of treatment in this disease.

LA RIFORMA MEDICA.

March 9, 1907.

1. Diffuse Secondary Popliteal Aneurysm. Notes on Possible Anomalies of the Origin of the Branches of the External Iliac Artery. By G. PASCOLE.
2. Further Researches Upon Pellagra. By G. TIZZONI and L. PANICHI.
3. A Case of Echinococcus in a Child Aged Four. By A. LONGO.
4. The Thermophile Germs of Potable Waters. By E. TIRELLI.

1. Popliteal Aneurysm.—The case reported by Pascole was one of diffuse secondary popliteal aneurysm, following an injury. There was incipient gangrene in the sac, and the femoral was tied in Scarpa's triangle. The pulsation returned in the aneurysmal sac and a relapse followed. The femoral then was tied at the lower femoral orifice. A secondary hæmorrhage then occurred in the sac, and the femoral was tied high up. The hæmorrhage was arrested for a time, but recurred again. Finally the external iliac had to be tied and the bleeding ceased. The author thinks that there was

an anomaly in the origin of the obturator artery, which arose from the external instead of the internal iliac.

4. The Thermophile Germs of Potable Waters.—Tirelli demonstrates experimentally that there occur in potable waters several varieties of cocci, bacilli, etc., which resist high temperatures. It is probable that these germs possess some peculiarity in their constituent protoplasm which enables them to withstand heat for a long time.

March 16, 1907.

1. The Value of Leucopenia in the Diagnosis of Typhoid Fever. By CARLO GENNARI.
2. The Behavior of Glycogen in the Human Parathyroid. By P. GUIZZETTI.
3. Sigmoiditis and Perisigmoiditis. By P. COPOSSO.
4. Transplantation of Tendons in the Treatment of Paralysis. By GINO MONZARDO.

1. Leucopenia in Typhoid.—Gennari found in thirty-six out of fifty-five cases of typhoid fever examined a decrease in the leucocytes (2,300 to 4,500 per cubic millimetre). In these there was always a loss of polynuclears (from 30 to 60 per cent.) and a corresponding increase in the lymphocytes (60 to 30 per cent.). There was absence of eosinophiles in almost all the cases, but the mononuclears were increased (10 to 14 per cent.). The lymphocytosis is, therefore, usually relative, not absolute, in the early stages of typhoid fever.

ROUSSKY VRATCH.

February 24, 1907.

1. A Few More Remarks on the Treatment of Cancerous Growths in the Oesophagus by Means of Potassium Iodide. By M. P. MIKHAILOFF.
2. On the Operative Treatment of Rectourethral Fistulæ. By V. A. OPPEL.
3. The Qualitative and Quantitative Detection of Indican. By V. I. SLOVTSOFF.
4. Data on the Influence of Formalin Upon Gelatin Infected with Staphylococci. By V. L. BOGOLUBOFF.
5. A Clinical Study of Epidemic Cerebrospinal Meningitis. By L. L. STELKER.
6. The Treatment of Otosclerosis by the Faradic Current (Continued). By M. TH. TSIRTOVITCH.

1. Potassium Iodide in Cancer.—Mikhailoff insists that potassium iodide is a specific in cancer, especially in cancer of the oesophagus. In December, 1906, he published a preliminary communication in *Roussky Vrach* (abstracted in this column) in which he announced that he had obtained favorable results with this treatment. He now reports a case of cancer of the oesophagus treated by potassium iodide with marked success. The patient was a farmer, aged forty-two years, who had applied for treatment at Professor Fedoroff's clinic in St. Petersburg. This patient, the author asserts, was cured of cancerous stricture of the oesophagus by means of potassium iodide.

3. Tests for Indican.—Slovtsoff examined the various methods of testing for indican in the urine, and recommends as accurate and practical the test of Obermeyer or that of Graccioni, which are described in the textbooks. The quantitative methods are for the most part too elaborate for practical use. The best of these methods is that of Wary-Obermeyer with Ellinger's modification. The ideal clinical method is that of Volovski, which estimates the quantity of indican from the amount of free chlorine used. The coefficient found by the author for this method was 0.01 gramme of free chlorine corresponding to 0.95 gramme of indican. He does not agree with Volovsky that it is necessary to consider the specific gravity of the urine before determining the normal amount of indican voided. It is sufficient if an average urine of twenty-four hours is tested and this average figure compared with the normal. The average amount of indican voided in twenty-four hours is from four to five milligrammes.

March 3, 1907.

1. Expedition to Mongolia for the Investigation of the Plague, in 1905 and 1906.

By the late M. TH. SCHREIBER.

2. A Double Monster, *Dimeritis Pectoris Cephalothoracophagus Monosymmetrice et Cyclopa Parietalis* (*Synecephalus Asymmetrice*), Lister, as a Transition Form Into *Dipygus Tetrapterus* (*Tetrabrachius*).
By N. A. BARNHILL.
3. The Action of Digalen Upon the Blood Supply of the Heart in Warmblooded Animals.
By I. A. LICHTELSKI.
4. The Ætiology of Extrauterine Pregnancy,
By L. L. OKINTCHITZ.
5. The Treatment of Fractures of the Femur and of Both Bones of the Leg by Means of Volkovitch's Apparatus,
By S. L. TIMOFEYEFF.
6. The Quantitative Changes in Lecithin in the Growing Organism,
By P. G. MESERNITZKI.
7. The Localization of Injuries and Diseases of Various Parts of the Brain,
By A. A. TSCHEPINSKI.

4. **The Ætiology of Extrauterine Gestation.**—Okintchitz, by exclusion, finds that in a case of extrauterine pregnancy which he reports, the ætiology of the abnormal gestation lay in the imperfect development of the Fallopian tubes. According to Freund the tube straightens out as it develops, and originally is twisted into a complex spiral. If the process of development is arrested the tube is much more apt to become inflamed or to be the seat of gestation.

5. **Ambulatory Splint for Fracture of the Femur.**—Timofeyeff describes Volkovitch's splint for this purpose, which is constructed of wood, accurately measured for each case. The splint consists of an external lateral shaped board extending from the crest of the ilium to the sole. The upper part is provided with a padded wooden fork, the lower with a solid wooden sole, shaped somewhat like that of a shoe. The fork embraces the body at the level of the crest, the sole fits accurately under the foot in extension. The fork and sole are fixed to the upright by means of screws and iron angles. The apparatus weighs five pounds, and is made strong, rather than light, in weight. It should be well padded. The fork can be fixed at an angle with the upright if abduction is desired. A shoe with a thick sole and heel is used for the healthy side. The patient is placed on the edge of the table and the apparatus is put in place after perfect reduction and extension. The sole of the foot is an inch or so above the sole of the splint, the limb being firmly fixed to the upright and thus the patient's fractured limb hangs down in the splint, the force of gravity of the lower part acting as a weight and securing extension.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting of January 21, 1907.

The President, Dr. T. E. SATTERTHWAIT, in the Chair.

Election of Officers.—Dr. Nathan B. Van Etten was elected chairman for the borough of the Bronx and Dr. Edward D. Fisher a member of the executive council.

Statistical Secretary's Report.—The annual report of the corresponding and statistical secretary showed that during the year 54 new fellows had been elected, and that the total membership of the association was now 773.

Recent Deaths of Fellows.—Dr. ANDREW H. SMITH presented the report of the committee on the death of Dr. Glover C. Arnold and Dr. Robert C. Kemp, that of the committee on the death of Dr. Alfred W. Gardner and Dr. Adolf Meyer, and that of the committee on the death of Dr. A. E. Macdonald.

Experimental Studies in Arteriosclerosis.—This paper was presented by Dr. OSCAR KLOTZ, lecturer in

pathology, McGill University, Montreal. He said that in his own studies he had employed the wider use of the term arteriosclerosis, and included under it, as was formerly done, all hardening of the arterial coats, as more in accord with the findings of clinicians. The experimental production of arteriosclerosis in animals was of fairly recent origin, and the first experiments were by the direct injury, such as crushing of an artery, with the idea of bringing about sufficient change in the vessel walls to lead to aneurysm. Instead of an aneurysm, however, the experimenters found that certain local inflammatory changes, with endothelial proliferation, were produced. It had since been shown that in all cases where an artery was disturbed in its natural bed, thereby affecting the vasa vasorum, an inflammatory reaction was the result. From a study of these inflammatory processes two important facts were noted: 1. That an inflammatory reaction in the media was shown by a leucocytic infiltration about the vasa vasorum and in the lymphatic channels. 2. That a lesion of the media of inflammatory nature might lead to a chronic proliferation in the intima.

Later several other ways had been found to bring about the same results. One was by the intravenous inoculation of bacteria of low virulence, and in this way Dr. Klotz had been successful in producing an endarteritis chronica deformans in the aorta by the injection of old laboratory stocks of the streptococcus or bacillus typhosus. A true inflammation of the media (mesarteritis) he had not succeeded in obtaining, except when an injury had been induced close to the vessel itself. This experimental endarteritis had histological characters quite similar to those in the human arteries. Its result was the production of a nodular hyaline mass of tissue on the surface of the intima, and such a thickening of the intima had a disastrous effect on the tissue just underneath it. From the cutting off of the supply of nourishment to the cells in this position there resulted the fatty change in the deep layers of the intima and the inner portion of the media. The experimental lesions which had of late received the most attention were of a different nature. By the use of such agents as adrenalin, digitalin, nicotine, and barium chloride, it had been found possible to produce pathological conditions which from the first were degenerative in character. Under these the muscle cells in the middle zone of the media were primarily attacked, and, according to the intensity of the action of the drug, the cells underwent either a fatty degeneration or complete destruction. This type of arterial disease, in which the media was first destroyed, was spoken of as Moenckeburg's arteriosclerosis. Dr. Klotz had also produced the medial degeneration with calcification by the inoculation of diphtheria toxine, and this was important as demonstrating that the effects of diphtheria were not confined to nervous tissue and heart muscle, but that in this disease the muscle elements of the vascular system were also attacked. It might be that the intoxication in cases of diphtheria was an important agent in bringing about Moenckeburg's arteriosclerosis, such as was seen in the radials and other peripheral vessels. This latter form of medial degeneration with surgical pouchings had also its analogy in the peripheral arteriosclerosis in man, and the great majority of the cases of arteriosclerosis which were diagnosed from the condition of the radial arteries were of this type.

Thus, up to the present time, we had at our command the production of three types of arteriosclerosis, namely: 1. Endarteritis chronica deformans. 2. Mesarteritis. 3. Moenckeburg's arteriosclerosis. All of these experimentally produced arterial diseases followed the same course and had the same result as in man. As the lesions, however, were in healthy animals, having power to compensate for the effect of extreme arterio-

sclerosis, fewer symptoms were to be noted. The heart rapidly became hypertrophied and was able to carry the new load with comparative ease.

Some Diagnostic Features of Arteriosclerosis in Clinical Medicine.—This was the title of a paper read by Dr. LOUIS F. BISHOP. Arteriosclerosis, he said, was a pathological rather than a clinical matter, and the term had come to cover a number of cases in which the actual changes in the arteries often had but little bearing upon the disease. He preferred to speak of arterial degeneration as covering not only arteriosclerosis, or a degeneration of structure, but also a degeneration of function. It was a common experience to find that a patient might have arteries extremely thickened, and yet suffer little or no inconvenience, while another patient, in whom the physical change was scarcely noticeable, might suffer from violent symptoms. It was upon the disorder of function which preceded or followed the marked structural change that the importance of the condition to the individual depended. High arterial tension was a clinical condition of such a character that it seemed to him unreasonable to attribute it simply to a change in a single set of organs, even though so important as the arteries, and he believed that in a large proportion of cases the heart and arteries were less at fault in the earlier stages than the organs which controlled their activities and which influenced the circulation of the blood. The influence of the nervous system in originating and maintaining a vicious tension in the circulation was second in importance only to the results of degenerative kidney disease, and of late years it would appear that the cases of nervous origin were becoming even more frequent than those primarily of nephritic origin. Constant strain and worry brought about changes in the circulatory system which led to hypertrophy of the heart and the subsequent degenerative changes.

The speaker had come lately to use the term chronic vascular overtone, and he employed it to designate the disease, the true nature of which had always been a matter of speculation, ordinarily spoken of as high blood pressure. Vascular overtone was caused by an exaggeration of the influence emanating from the great nerve centres which maintained the muscles of the vascular system in a condition of tone; and it was the basis of all the cases which had been known in recent years as cases of high arterial tension of nervous origin. He would explain upon physiological grounds, rather than upon those of pathological anatomy, this vicious contraction of the bloodvessels which was the basis of so many cases of cardiac disease and eventually of destructive lesions of the kidneys and of the central nervous system. The recognition of this class of cases (properly designated, he thought, as cases of vascular overtone) would seem to clear up the diagnosis of cases which certainly were not primarily disease of the kidneys, and to point very clearly to a treatment consisting of measures capable of modifying the physiology of the nervous system. Clinical experience, moreover, had shown that the subjects of vascular overtone improved when mental activity was restricted and muscular activity was increased, and also that they improved on a diet restricted in quantity and especially restricted as to the quantity of meat and sugar taken. Since he had come to regard these cases simply as examples of an abnormal exaggeration of a naturally existing force he had been much more hopeful as to the successful management of the condition and of its practical cure in many individuals. This view of the subject, therefore, was entirely different from the logical conclusion which must be accepted when we regarded the condition as the result of arterial sclerosis, a change in the structure of the vessels which from its very nature was permanent and unalterable.

Visceral Arteriosclerosis.—Dr. HARLOW BROOKS read this paper. The visceral arteries, he said, belonged to the "medium" class, as classified by histologists; their trunks having thick and well developed muscular coats. This heavy media was physiologically necessary, since the blood supply to the organs had to be alternately increased by the relaxation of the muscle and decreased during the physiological resting stage by the local contraction of this coat. As a result of this delicately balanced function, even relatively slight changes in the walls of these very active vessels hindered or limited the possibilities in these directions. If the media, or muscle coat, became even slightly diseased, either by degenerative muscular alterations, by encroachments of interstitial hyperplasia, or by true inflammatory exudate, the entire control of nutritive vascular supply was interfered with, and, as a result, the organ might become chronically congested, or perhaps habitually anæmic. In either case the viscus became permanently damaged, being no longer able to properly maintain its functions and its physiological balance in the interrelations of the body. A disturbance of this equilibrium led first to secondary changes in the immediately dependent organ, and eventually might result in lesions of the general viscera. Furthermore, disease of the arterial walls in vessels of this class tended to alterations in the general blood pressure. Elevation of the blood pressure, due apparently to local arterial disease, was particularly well illustrated in the case of arteriosclerotic or small contracted kidney.

Out of 400 cases of arteriosclerosis recorded by Dr. Brooks, in no fewer than 368 the visceral arteries were mostly or exclusively involved. This rate of occurrence in itself, he thought, demonstrated the importance of the consideration of the disease in these vessels. The relative distribution in these cases was as follows: The coronary artery was involved in 270 of the 368, the cerebral vessels in 107, the renal vessels in 81, the pancreatic in 74, the hepatic in 43, the splenic in 35, the spinal in 20, the pulmonary in 16, the celiac artery and its visceral branches in 19, and the mesenterics in 4. He urged these figures as of special value to New York physicians, since they had been compiled exclusively from patients residing in this city, and subjected to its general and local conditions and to the strain and wear of New York professional, business, and laboring life. Having referred to the fact that Dr. Fisher had unfortunately been prevented by illness from presenting the aspects of arteriosclerosis as it occurred in connection with the nervous system, he went on to say that it might be stated that for the most part the symptoms of arteriosclerosis of any organ were those ascribed to the brain and spinal cord. Thus, we had temporary aphasia of the pancreas, in the loss of the pancreatic equivalent for speech, the secretion of the organ. Likewise, we had intermittent claudication of the renal vessels, and nearly every other symptom could also be compared as to character and causation.

The most constant symptoms of visceral arteriosclerosis in any organ were: (1) A depressed function, often spasmodic, but mostly evident when studied for a considerable period of time; (2) pain, also spasmodic and always of the anginal character, localized in the distribution affected; (3) inconstant and spasmodic elevation of the blood pressure. The diagnosis was to be founded chiefly on the appearance of these symptoms, coupled with a requisite history of ætiological factors and the usual method of diagnosis of general arteriosclerosis. The inspection and palpation of the superficial arteries were, however, most untrustworthy in visceral arteriosclerosis. In Dr. Brooks's 400 cases the superficial vessels were involved in but 154, and in 4 of these changes were not present to any appreciable degree in the internal trunks, being found only in the superficial vessels.

The concluding portion of the paper was devoted to the subject of treatment. The speaker referred, first, to those measures which tended to eliminate the productive factors. This primarily involved in most instances the relief of the diseased viscus from functional overactivity. If it was the brain, the patient must be relieved from worry and stress; if it was the pancreas or liver, from excessive digestive demands; while if the renal vessels were chiefly involved, elimination by other routes was to be substituted, and the products for elimination simplified by the correction of diet or attention to metabolic disorders. In all cases general hygienic measures were to be insisted upon. Diminution of the demands upon the diseased organs might occasionally be accomplished by the proper use of drugs or by local mechanotherapy. The general lowering of the blood pressure, either by local or by general means, was frequently required. Potassium iodide, and perhaps other forms of iodine, employed as general drugs, served to prevent extension of the disease, as definitely shown by recent experiments. In a certain class of cases, besides the syphilitic ones, such medication also tended to facilitate absorption of inflammatory and degenerative products in the diseased vessel walls.

The following points were urged in conclusion: 1. The great frequency of visceral arteriosclerosis and its importance, particularly in internal medicine. 2. It could be diagnosed in many cases partly by exclusion, partly by its direct signs and symptoms, and partly by the results attending treatment. 3. Treatment was attended with great benefit in a very considerable number of cases, when it was based on a close study of the special ætiology, on a thorough appreciation of the physiology of the diseased organs and of the idiosyncrasies of the individual case, and, finally, on a correct diagnosis.

Arteriosclerosis in Diseases of the Eye.—The last paper of the evening was by Dr. WILBUR B. MARPLE. Having stated that he preferred to use the term *angeiosclerosis*, since it had been demonstrated that the disease affected the veins as well as the arteries, he spoke of the difficulty of detecting the condition in many instances. He then described in detail the various ophthalmoscopic signs of arteriosclerosis, and went on to say that de Schweinitz had recently made a useful division of the lesions into those which were suggestive and those which were pathognomonic. In the former were included uneven calibre and undue tortuosity of the retinal arteries, increased distinctness of the central light streak, an unusually light color of the breadth of the artery, etc. The pathognomonic signs included changes in the size and breadth of the retinal arteries of such a character that a beaded appearance was produced, with distinct loss of translucency, decided lesions in the arterial walls, consisting of white stripes in the form of perivasculitis, alternate contractions and dilations of the veins, and, finally and most important, the indentation of the veins by the stiffened arteries. While this latter was universally recognized as the one ocular sign most nearly pathognomonic of *angeiosclerosis*, it was only when several of these signs were present together that it could be positively asserted that the arterial change was very important.

The disease was not confined to elderly persons, but was occasionally met with in those under forty or even thirty. In the presence of nephritis or syphilis it might occur at quite an early age. The vascular changes might be very pronounced without affecting vision. If considerable visual impairment occurred, it was apt to come on suddenly, as the result of hæmorrhages at the posterior pole or perhaps of venous thrombosis, and cases of the latter were especially prone to glaucoma subsequently. In speaking of the limitations of the subject Dr. Marple said that the mistake must not be

made of attributing all vascular changes found in the retina to *angeiosclerosis*, for frequently these were of a local character. On the other hand, it would be equally a mistake to consider the absence of ophthalmoscopic evidence of retinal changes as positive proof that *arteriosclerosis* was not present in the eye or elsewhere. As to the significance of the changes observed in this affection, so far as the eye was concerned, it was found that glaucoma occurred very frequently in the condition. These retinal changes, however, became very much more significant from the assistance which they rendered in diagnosing a serious general condition, it might be before the presence of such was suspected by the patient's regular physician. Thus, it was now well understood that the diagnosis of many cases of nephritis was first made by the oculist. Again, general *angeiosclerosis* very frequently affected the internal carotids, and was apt to involve their principal branches, and among these the ophthalmic and cerebral arteries. If these degenerative changes could be demonstrated in the retina, it was very probable that the same disease was present in the cerebral vessels. In forty-four cases observed by Rachlmann there was subsequent cerebral hæmorrhage in ten, or twenty-one per cent. If early evidence of arterial degeneration was discovered ophthalmoscopically, the patient should be given a thorough examination. Thus oftentimes proper treatment could be applied with the greatest benefit, and possibly an impending catastrophe be averted.

Dr. R. W. WILCOX expressed the opinion that *arteriosclerosis* was the most important subject before the internalist at the present time, and said that some of the best recent work in its elucidation had been accomplished by New York men. That which had been done by Dr. Pearce, of Albany, was especially noteworthy. The admirable paper by Dr. Marple was of very great interest as impressing the lesson that no one method was to be depended upon in mastering the problems presented by the intricacies of *arteriosclerosis*. The ophthalmoscope was certainly of most important service, and he believed that if internalists would better qualify themselves to resort to its employment they would often be able to make a much earlier diagnosis than at present. As to so called *interstitial nephritis*, the small red kidney of Richard Bright, this was not an *interstitial* affection at all, but in reality an *arterial* nephritis. It was merely one manifestation of a general *arteriosclerosis*, and therefore it was altogether impossible that such a measure as decortication of the kidney should be of any value whatever in this particular form of nephritis.

Dr. R. C. MYLES said he had met with an interesting phase of *arteriosclerosis* as regarded the nose. Ordinary epistaxis, as was well known, was concerned with the region of the *sæptum*; but for some time past he had come to regard as of great significance the occurrence of hæmorrhages due to the rupture of small bloodvessels located in the region of the turbinates and upper recesses. Following these hæmorrhages there were degenerative changes which might even proceed to such an extent as to give rise to an offensive odor. A careful investigation of such cases had shown him that these phenomena were always preceded by a condition of high arterial tension. As a rule, they occurred in men of from forty-five to fifty-five years of age, who were in apparently good health, but were living under considerable mental strain. Subsequently, these patients became victims of apoplexy. If one eliminated the *sæptum*, the occurrence of these little nasal hæmorrhages was therefore a very important diagnostic sign, and one which should at once put us on our guard against impending danger.

Dr. ADOLF MEYER said that in the past ten years much progress had been made in the investigation of *arteriosclerosis*, as it affected the nervous system, and

as a result of this work much could be accomplished in the way of prophylaxis. Formerly the first thing noticed was the apoplexy, but in consequence of the improvements in our present methods, many indications antecedent to this could often be detected.

Book Notices.

Textbook of Anatomy for Nurses. By ELIZABETH R. BUNDY, M. D., Member of the Medical Staff of the Woman's Hospital of Philadelphia; Gynecologist to the New Jersey Training School, Vineland, etc. With a Glossary and One Hundred and Ninety-one Illustrations, Thirty-four of which are Printed in Colors. Philadelphia: P. Blakiston's Son & Co., 1906. Pp. 252.

This textbook will certainly be welcomed by the educated nurse, although we doubt very much if it is necessary for any nurse to go so deep into the study of anatomy. The study of anatomy without dissection will always leave a wrong impression, and no illustrations, even the best, will counterbalance this deficiency. But the text of this book is concise and gives all that can be expected from such a special textbook or compendium. The illustrations are very well executed, although they are, only naturally, rather diagrammatic. Chapter VII contains a very condensed review of foods and digestion. The glossary should be very helpful to any nurse and would form a good nucleus for a dictionary of medical words for nurses.

Organic and Functional Nervous Diseases. By M. ALLEN STARR, M. D., PH. D., LL. D., Sc. D., Professor of Neurology, College of Physicians and Surgeons, the Medical Department of Columbia University in the City of New York, etc. Second Edition, Thoroughly Revised. Illustrated with 282 Engravings in the Text and 26 Plates in Colors and Monochrome. Philadelphia: Lea Brothers & Co., 1907. Pp. viii-17 to 816.

A second edition of Dr. Starr's work follows closely on the appearance of the first. This was to be expected by reason of the splendid work done by both author and publisher. In this new edition the opportunity has been taken advantage of to include a section on functional diseases of the nervous system, so that the entire field of neurology should be represented.

The chapters on organic nervous diseases have been revised and amplified somewhat; minor changes have been introduced, and newer studies have been incorporated. Thus, on pages 20 and 21, the results of the newer studies of Cajal on the internal structure of the neurone are presented, which, with an already complete survey of the histology and pathology of the neurone, make this chapter authoritative and modern.

Little has been added to the author's chapters on injuries and disorders involving the peripheral motor neurone systems. We are of the opinion that their previous treatment could hardly be improved upon. So also is it that in no other work of its kind can so thorough an analysis and description of affections of the brain be found.

The physical limit of size for a textbook has probably precluded a fuller discussion of the functional diseases. These are well presented, but with a briefness that shows a marked contrast with the fuller and more complete descriptions in the chapters on organic diseases.

Taken in its entirety, Dr. Starr's work remains a masterpiece, and in it we find an ideal book of its kind; of paramount interest to the student and general practitioner and to the specialist as well.

BOOKS, PAMPHLETS, ETC., RECEIVED.

Transactions of the Medical Society of the State of North

Carolina. Fifty-third Annual Meeting, held at Charlotte, N. C., May 29, 30, and 31, 1906. Edited for the Society by J. Howell Way, M. D.

Traitement chirurgical du cancer du colon. Par le Dr. Joseph Okinczyc, prosecteur à la faculté de médecine, ancien interne lauréat des hôpitaux (médaillé d'or 1906). Paris: G. Steinheil, 1907.

Surgical Diseases of the Chest. By Carl Beck, M. D., Professor of Surgery in the New York Postgraduate Medical School and Hospital, etc. Philadelphia: P. Blakiston's Son & Co., 1907.

The Abdominal and Pelvic Brain. With Automatic Visceral Ganglia. By Byron Robinson, B. S., M. D., Chicago. Hammond, Ind.: Frank S. Betz, 1907.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ending April 5, 1907:

Smallpox—United States.

Places.	Date.	Cases.	Deaths.
California—San Francisco.....	Mar. 16-23.....	2	
Florida—Duval County, Jacksonville.....	Mar. 23-30.....	1	
Florida—Hillsboro County.....	Mar. 23-30.....	6	
Florida—Polk County.....	Mar. 23-30.....	4	
Florida—Suwanee County.....	Mar. 23-30.....	1	
Georgia—Augusta.....	Mar. 26-Apr. 2.....	6	
Illinois—Chicago.....	Mar. 23-30.....	2	
Illinois—Galesburg.....	Mar. 23-30.....	3	
Indiana—Indianapolis.....	Mar. 24-31.....	3	
Indiana—Marion.....	Mar. 1-31.....	11	
Iowa—Clinton.....	Mar. 16-23.....	2	
Kansas—Kansas City.....	Mar. 23-30.....	1	
Louisiana—New Orleans.....	Mar. 23-30.....	15	1
Massachusetts—Boston.....	Mar. 23-30.....	1	
Michigan—Detroit.....	Mar. 2-9.....	11	
Mississippi—Gulfport.....	Mar. 18-25.....	1	imported
Missouri—St. Joseph.....	Mar. 2-9.....	23	1
Missouri—St. Louis.....	Mar. 23-30.....	2	
New Jersey—Hoboken.....	Mar. 23-30.....	2	
New Jersey—Newark.....	Mar. 23-30.....	2	
North Carolina—Charlotte.....	Mar. 23-30.....	1	
Ohio—Cleveland.....	Mar. 22-29.....	1	
Texas—Houston.....	Feb. 3-Mar. 30.....	76	
Washington—Seattle.....	Mar. 17-24.....	1	
Washington—Spokane.....	Mar. 16-23.....	18	

Smallpox—Foreign.

Canada—Nova Scotia, Colchester County.....	Mar. 25.....	Present.	
Canada—Nova Scotia, Pictou County.....	Mar. 25.....	Present.	
Canada—British Columbia, Vancouver.....	Mar. 16-23.....	1	
Canada—Manitoba, Winnipeg.....	Mar. 16-23.....	1	
China—Hongkong.....	Feb. 2-16.....	27	26
China—Shanghai.....	Feb. 9-23.....	5	5
Ecuador—Guayaquil.....	Mar. 2-16.....	8	5
France—Dunkirk.....	Feb. 6-Mar. 8.....	12	5
France—Marseilles.....	Mar. 6-13.....	Still present.	
France—Paris.....	Mar. 9-16.....	12	2
Germany—Bremen.....	Mar. 9-16.....	3	
Germany—Metz and vicinity.....	Mar. 3-16.....	33	
Great Britain—Manchester.....	Mar. 9-16.....	2	
India—Bombay.....	Feb. 27-Mar. 5.....	3	
India—Calcutta.....	Feb. 16-23.....	48	
India—Madras.....	Feb. 23-Mar. 1.....	1	
Italy—Turin.....	Mar. 2-9.....	1	
Mexico—Aguas Calientes.....	Mar. 16-23.....	3	
Mexico—Mexico.....	Feb. 16-Mar. 2.....	29	
Portugal—Lisbon.....	Mar. 9-16.....	12	
Russia—Odessa.....	Mar. 2-9.....	32	6
Russia—Riga.....	May 9-16.....	6	
Russia—St. Petersburg.....	Feb. 23-Mar. 9.....	3	3
Russia—Warsaw.....	Feb. 9-16.....	4	

Yellow Fever—Foreign.

Africa—Dahomey, Grand Popo.....	Jan. 15.....	Present.	
Brazil—Para.....	Mar. 2-9.....	4	2
Ecuador—Guayaquil.....	Mar. 2-16.....	21	
Mexico—Vera Cruz, Paraje Nuevo.....	Mar. 2-9.....	1	1

Cholera—Foreign.

India—Calcutta.....	Feb. 16-23.....	42	
India—Madras.....	Mar. 1.....	3	
India—Rangoon.....	Feb. 16-23.....	4	

Plague—Insular.

Hawaii—Honolulu.....	Mar. 2-9.....	1	
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Plague—Foreign.

China—Hongkong.....	Feb. 9-16.....	1	1
China—Nuchwang.....	Feb. 6.....	2	
Egypt—Assiout Province.....	Mar. 1-7.....	16	7
Egypt—Girgeh Province.....	Mar. 1-7.....	46	34
Egypt—Ismailia.....	Mar. 4.....	1	1

Egypt—Keneh Province	Mar	27	23	16
India—General	Feb.	16	23	20,253
India—Bombay	Feb	27	Mar. 5	306
India—Calcutta	Feb	16	23	27
India—Rangoon	Feb	16	23	55

Public Health and Marine Hospital Service:

Official List of Changes of Station and Duties of Commissioned and Non-commissioned Officers of the United States Public Health and Marine Hospital Service, for the seven days ending April 3, 1907.

BROOKS, S. D., Surgeon. Relieved from duty at San Diego, Cal.; directed to proceed to Los Angeles and assume charge of the Service at that port, relieving Surgeon J. O. Cobb.

COBB, J. O., Surgeon. Relieved from duty at Los Angeles, Cal., and directed to proceed to Cairo, Ill., and assume command of the Service at that port, relieving Surgeon G. M. Guiteras.

DE VALIN, HUGH, Assistant Surgeon. Relieved from duty at Reedy Island Quarantine Station and directed to proceed to New Orleans Quarantine Station, reporting to the Medical Officer in command for duty and assignment to quarters.

FRANCIS, EDWARD, Passed Assistant Surgeon. Relieved from duty at the Marine Hospital, Mobile, Ala., and directed to assume command of the Quarantine Service at that port April 1, 1907.

FOX, CARROLL, Passed Assistant Surgeon. Order granting leave of absence for fourteen days revoked.

GUITERAS, G. M., Surgeon. Relieved from duty at Cairo, Ill., and directed to proceed to Mobile, Ala., and assume command of the Service at that port, relieving Passed Assistant Surgeon Edward Francis.

JACKSON, J. M., Jr., Acting Assistant Surgeon. Granted leave of absence for ten days, from March 27, 1907.

MCCONNELL, E. F., Acting Assistant Surgeon. Department letter of February 26th amended so as to grant Acting Assistant Surgeon McConnell twenty-two days' leave of absence, from February 25, 1907, instead of thirty days.

MCCORMAC, J. T., Acting Assistant Surgeon. Granted leave of absence for thirty days, on account of sickness, from February 9, 1907.

ROBERTSON, B. MCG., Assistant Surgeon. Relieved from duty at Philadelphia and directed to proceed to Reedy Island Quarantine Station, reporting to the Medical Officer in command for duty and assignment to quarters.

SAFFORD, N. V., Acting Assistant Surgeon. Directed to proceed from Boston to Westborough, Mass., for special temporary duty, upon completion of which to rejoin his station.

SALMON, T. W., Assistant Surgeon. Granted leave of absence for four days on account of sickness.

STORY, H. C., Acting Assistant Surgeon. Granted leave of absence for thirty days, from May 1, 1907.

VON EZDORF, R. H., Passed Assistant Surgeon. Assumed command of New Orleans Quarantine Station April 1, 1907.

Boards Convened.

A board of medical officers was convened to meet at Philadelphia, April 4, 1907, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: Surgeon J. M. Gassaway, Chairman; Passed Assistant Surgeon T. Clark, Recorder.

A board of medical officers was convened to meet at Wilmington, N. C., April 8, 1907, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: Passed Assistant Surgeon C. H. Lavinder, Chairman; Acting Assistant Surgeon ———, Recorder

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending April 6, 1907:

ARTHUR, WILLIAM H., Major and Surgeon. Relieved from duty as attending surgeon, United States Soldiers' Home, Washington, D. C., and ordered to proceed to

Washington Barracks, Washington, D. C., and assume command of the General Hospital at that post on June 15th.

BORDEN, WILLIAM C., Major and Surgeon. Granted three months' leave of absence, to take effect about June 15th; relieved from duty at General Hospital, Washington Barracks, D. C., to take effect upon expiration of leave of absence, and will then proceed to Manila, P. I., for duty.

CROSBY, WILLIAM H., Major and Surgeon. Relieved from duty at Vancouver Barracks, Washington, and ordered to the United States Soldiers' Home, Washington, D. C., as attending surgeon, and will report about June 14th.

HEARD, GEORGE P., Captain and Assistant Surgeon. Detailed as a member of the Army Retiring Board, to meet at Denver, Col., vice Colonel E. B. Moseley, assistant surgeon general, hereby relieved.

KILBOURNE, E. D., First Lieutenant and Assistant Surgeon. Relieved from duty at the General Hospital, Presidio of San Francisco, Cal., and ordered to Fort Brady, Mich.

MOSELEY, E. B., Colonel and Assistant Surgeon General. Granted leave of absence for one month and twenty-five days.

MUNSON, E. L., Major and Surgeon. Relieved from duty at the General Hospital, Fort Bayard, New Mexico, and ordered to Fort Sheridan, Ill., for duty.

ROCKHILL, E. P., Captain and Assistant Surgeon. Relieved from treatment at the Army General Hospital, Presidio of San Francisco, Cal., and ordered to proceed to the General Hospital, Fort Bayard, N. M., for observation and treatment.

SNYDER, C. R., First Lieutenant and Assistant Surgeon. Relieved from duty in the Philippines Division, to take effect at such time as will enable him to comply with order, and will proceed by first available transport sailing from Manila after June 1st to San Francisco, Cal., and upon arrival will report by telegraph to the Adjutant General of the Army for further orders.

SWEAZY, V. E., First Lieutenant and Assistant Surgeon. Will render the necessary attendance at Fort Preble, Me., during the absence of Contract Surgeon Whitney, at Fort McKinley, Me.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending April 6, 1907:

ALLEN, A. H., Assistant Surgeon. Detached from the U. S. Naval Medical School, Washington, D. C., on April 3rd, and ordered to duty with marines, Camp Columbia, Cuba.

AMES, M. H., Assistant Surgeon. Detached from the U. S. Naval Medical School, Washington, D. C., April 3rd, and ordered to the *New Jersey*.

BAKER, M. C., Acting Assistant Surgeon. Detached from the U. S. Naval Medical School, Washington, D. C., and ordered to the Navy Yard, Norfolk, Va.

BAKER, M. W., Passed Assistant Surgeon. Detached from the Naval Hospital, New York, N. Y., and ordered to the Naval Hospital, Portsmouth, N. H.

BAKER, M. W., Assistant Surgeon. Detached from the Naval Hospital, New York, and ordered to the Naval Hospital, Boston, Mass.

BALCH, A. W., Passed Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., ordered to the Naval Hospital, Cavite, P. I., sailing from New York on April 20th, stopping *en route* at London, England; Hamburg, Germany; and other points for special duty.

BUTTS, H., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Asiatic Station.

COHEN, I. F., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Asiatic Station.

DOLLARD, H. I., Acting Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Naval Hospital, Newport, R. I.

DONALDSON, M., Acting Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to duty with Naval Recruiting Party No. 3.

DOWNEY, J. O., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Asiatic Station.

FLINT, J., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Naval Hospital, Canacao, P. I.

FREEMAN, G. F., Passed Assistant Surgeon. Detached from the Naval Hospital, Portsmouth, N. H., and ordered to take a course of instruction in the Naval Medical School, Washington, D. C.

GARTON, W. M., Surgeon. Detached from the Naval Hospital, Washington, D. C., ordered home, granted two weeks' leave of absence, and thence to the *Ohio*.

HAYNES, J. H., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the *Virginia*.

HUFF, E. P., Acting Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Naval Proving Grounds, Indian Head, Md.

JONES, E. L., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Naval Hospital, Mare Island, Cal.

KAUFMAN, J. B., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the *Tennessee*.

KUDER, W. S., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the *Minnesota*.

LEE, A. H., Assistant Surgeon. Ordered to duty at the Naval Medical School, Washington, D. C.

LONGABAUGH, R. I., Acting Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Naval Hospital, Annapolis, Md.

MCDONNOLD, P. E., Passed Assistant Surgeon. Detached from the *Dolphin* and ordered to the *Connecticut*.

MCLEAN, H. T., Assistant Surgeon. Detached from the Navy Yard, Boston, Mass., and ordered to the Naval Recruiting Station, Chicago.

MILLER, J. T., Acting Assistant Surgeon. Detached from the Naval Recruiting Station, Minneapolis, Minn., and ordered to take a course of instruction at the Naval Medical School, Washington, D. C.

MINTER, J. M., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Naval Station, Guam, Ladrone Islands.

MOORE, J. M., Surgeon. Detached from the Naval Hospital, Norfolk, Va., and ordered to duty with the Naval Recruiting Station, Minneapolis, Minn.

ODELL, H. E., Surgeon. Detached from the Naval Hospital, Newport, R. I., and ordered to the Naval Medical School, Washington, D. C., for a course of instruction, and also to duty at the Naval Hospital, Washington, D. C.

PLUMMER, F. W., Passed Assistant Surgeon. Detached from the Naval Recruiting Station, Chicago, Ill., and ordered to take a course of instruction at the Naval Medical School, Washington, D. C.

RAISON, T. W., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Asiatic Station.

RANSDELL, R. C., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the *Maine*.

ROBNETT, A. H., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Naval Station, San Juan, Porto Rico.

SMITH, H. L., Acting Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Naval Recruiting Station, Omaha, Neb.

STEADMAN, W. G., Acting Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Naval Recruiting Station, Providence, R. I.

TOLFREE, H. M., Passed Assistant Surgeon. Detached from the *Connecticut* and ordered to the *Dolphin*.

WINN, C. K., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Asiatic Station.

Births, Marriages, and Deaths.

Married.

ELLIOTT—VAN LENNEP.—In Philadelphia, on Wednesday, April 3rd, Dr. John Dean Elliott and Miss Rebecca Reeves Van Lennep, daughter of Dr. and Mrs. William B. Van Lennep.

FOLEY—MORRIS.—In Roxbury, Massachusetts, on Tuesday, April 2nd, Dr. Timothy J. Foley and Miss Anna I. Morris.

MCGUIRE—CHURCHILL.—In Alpena, Michigan, on Monday, April 1st, Dr. J. Frank McGuire and Mrs. Ella M. Churchill.

POMEROY—BRENNAN.—In New York, on Saturday, March 30th, Dr. J. L. Pomeroy, United States Army, and Miss A. Lillian Brennan.

WAYNE—GREEN.—In Philadelphia, on Wednesday, April 3rd, Dr. Oscar Truitt Wayne and Miss Lillian Hazel Green.

Died.

BEMIS.—In Chicago, on Monday, April 1st, Dr. Joseph G. Bemis, aged sixty-two years.

BERRY.—In Philadelphia, on Thursday, March 28th, Dr. Lawrence F. Berry, aged twenty-five years.

BLAKEMAN.—In New York, on Friday, March 29th, Dr. J. Le Roy Blakeman, aged thirty-four years.

CAMPBELL.—In Greenpoint, Brooklyn, N. Y., on Tuesday, April 2nd, Dr. John Munro Campbell, aged seventy years.

COMBE.—In Brownsville, Texas, on Saturday, March 30th, Dr. Charles Berthand Combe, aged seventy-one years.

DRUMMOND.—In Cobalt, Ontario, Canada, on Saturday, April 6th, Dr. William Henry Drummond.

FARRIES.—In New York, on Sunday, March 31st, Dr. Robert Faries, aged seventy-two years.

FINDLEY.—In St. Louis, Missouri, on Wednesday, March 27th, Dr. Walter Preston Findley, aged thirty years.

FULLER.—In Brooklyn, N. Y., on Wednesday, March 27th, Dr. Frances Van Cleve Fuller, aged fifty-six years.

GRINNELL.—In New York, on Saturday, April 6th, Dr. Ashbel P. Grinnell.

HENDERSON.—In Woodleaf, North Carolina, on Wednesday, March 27th, Dr. A. G. Henderson, aged seventy-four years.

KELLOGG.—In Rochester, N. Y., on Friday, March 29th, Dr. Charles M. Kellogg, aged sixty-one years.

POLLOCK.—In New York, on Thursday, March 28th, Dr. Louis L. Pollock, of Quincy, Massachusetts, aged seventy years.

REILLY.—In Blackstone, Rhode Island, on Sunday, March 31st, Dr. Charles F. Reilly.

RICHARDSON.—In Toronto, Canada, on Tuesday, March 26th, Dr. Samuel Richardson, aged sixty-four years.

SHEPHERD.—In Hartford, Connecticut, on Saturday, April 6th, Dr. George R. Shepherd.

SWARTZLANDER.—In Doylestown, Pennsylvania, on Sunday, March 31st, Dr. Frank Swartzlander.

VOGEL.—In Springfield, Massachusetts, on Friday, March 29th, Dr. J. Oswald Vogel, of Quincy, Massachusetts, aged thirty-four years.

VON BEUST.—In New Albany, Indiana, on Wednesday, April 3rd, Dr. F. W. Bernard von Beust, aged seventy-seven years.

WATTS.—In Olean, N. Y., on Wednesday, March 27th, Dr. Francis E. Watts, aged forty years.

WHITAKER.—In Springfield, Massachusetts, on Tuesday, March 26th, Dr. William A. Whitaker.

WIGGINS.—In Jamestown, N. Y., on Monday, April 1st, Dr. John H. Wiggins, aged fifty-three years.

WINFREE.—In Raleigh, North Carolina, on Sunday, March 31st, Dr. John Mettauer Winfree.

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Original Communications.

A SYNOPOSIS OF THE HISTORIES OF SEVEN CASES OF APPENDICITIS, WITH COMMENTS.*

BY JOHN A. WYETH, M. D., LL. D.,
New York,
Professor of Surgery.

I desire to submit to your consideration the histories of seven cases of appendicitis which have been subjected to operation and are now under observation in this hospital, hoping to gather from their study a correct understanding of the various phases of this infectious process, and to indicate the best methods of treatment.

A compliment paid to the charms of Cleopatra by one of Shakespeare's heroes:

"Age cannot wither her nor custom stale her infinite variety,"

may well apply to the various forms of appendicitis, and although the diseases of this organ belong in large measure to the years of adolescence, yet age, unfortunately, does not wither it.

CASE I.—A lady of fifty years of age, married, mother of one child, now grown, otherwise in average physical condition, was taken with appendicitis in 1897. This resulted in a collection of pus, encapsulated by adhesions, which eight days after the onslaught was opened by me and drained through a small McBurney incision. The discharge of pus, with characteristic putrid intestinal odor was free. No fecal fistula followed, the drainage tubes were removed, and after several weeks the discharge gradually ceased with seemingly complete restoration to her former condition of health. I advised her after two months of convalescence to have the appendix removed, but this was declined. After a lapse of eight years the disease recurred with the rapid formation of another abscess, which burrowed more deeply toward the right lumbar region. This was evacuated through the original wound and a counteropening was made above the crest of the ilium, with through drainage. Eleven months have now elapsed since this last operation, and although she has been carefully watched and free drainage maintained, there is still a daily discharge of approximately a drachm of pus. The patient's general condition is excellent, she suffers no pain, and there is, in my opinion, no danger to her life as long as drainage is properly maintained, but there seems little hope of permanent cure without a radical operation, which shall remove the offending stump.

Comments.—This case teaches the great dangers of delaying surgical intervention at the earliest

moment after the recognition of the symptoms of a typical appendicitis. Had these symptoms been recognized and a radical operation done within the first twelve or eighteen hours of the onset of symptoms, the appendix could have been removed, the infected area rendered practically sterile, the wound closed without danger of peritoneal infection, and without danger of ventral hernia. Procrastination led to the necessity of doing a drainage operation. I do not deem it advisable when an extensive abscess is present to attempt the removal of the appendix, holding it safer to drain by the smallest possible incision, taking care not to break down adhesions by irrigation.

CASE II.—A man, forty-one years old, in good general health, with the exception of a slight indigestion for six weeks preceding the onset of the attack, was seized with severe colicky pains in the region of the navel. There was no nausea or vomiting, nor did he suffer sufficiently to cause him to discontinue his work as an architect. On the following day the attack recurred, and again on the third day with such increasing severity that he was compelled to take to his bed. At that time (November 22nd) he was seen by my assistant, Dr. Charles R. Hancock, who recognized an acute and aggravated form of appendicitis (gangrene), and advised an immediate operation. The temperature was 101° F., and rose within an hour to 102° F. Unfortunately operation was not permitted, and a delay of twelve hours proved disastrous, almost fatal. He was brought to the Polyclinic Hospital at 2.30 a. m., on Friday, November 23rd, presenting well marked symptoms of profound sepsis and intestinal paralysis, due to a widely spreading peritonitis. The operation was performed by Dr. Hancock, assisted by Adjunct Professor Lyle. A free incision was made through the right rectus muscle (Deaver). The peritoneal cavity was filled with a purulent fluid, with marked putrid odor, the appendix (not encapsulated) was gangrenous, had ruptured, and there was found free an enterolith, three fourths inch long by one half inch thick. The appendix was tied off by the silk ligature, disinfected, as much of the infected exudate as was possible removed, and a general toilet of the peritoneal cavity made by pouring from pitchers held at a height, eight to ten gallons of hot normal salt solution (110° F.). This was continued until the fluid came out clear and practically free from odor. A gauze drain was inserted in the long axis of the ascending colon, extending to near the hepatic flexure. A cigarette drain, placed at the stump of the appendix, came directly up through the abdominal incision, which was now partially closed at each end by peritoneal sutures of catgut, with kangaroo tendon in the sheath of the rectus. The patient rallied from the operation, but for the three days following, on account of intestinal paralysis and the inability to obtain a movement from the bowels, his condition was exceedingly precarious.

* A paper read before the Surgical Class of the New York Polyclinic Medical School and Hospital.

us. The abdomen became enormously distended, and the administration of calomel and epsom salts in large doses proved unavailing. Regurgitant vomiting of dark fluid continued for seventy-two hours. Normal salt solution and alum were given by the rectum. On the third day there was a slight escape of gas from the anus, which was soon followed by a free movement with immediate improvement in the general condition. The pulse had varied from 100 to 140. The symptoms of sepsis were still pronounced. On the fourth day the packing was removed and in part renewed. The discharge was profuse and partly fecal in character. From this time on the patient steadily improved. The fecal fistula closed, the flow of pus diminished, and the patient is now entirely well, with no hernia.

Comments.—This case further emphasizes the danger of delay (even for a few hours), after the recognition of general peritonitis and especially when the symptoms point to gangrene of the appendix. The question of the treatment of general peritoneal infection is one of great interest. In this instance a long incision over the rectus gave free access to the entire peritoneal cavity, and it is one of the advantages of this incision that it can be definitely enlarged without materially weakening the abdominal wall. Hot normal salt solution poured from a height from pitchers, is an excellent way of irrigating the peritoneal cavity, without traumatism to the intestines. Another method equally useful is the insertion of a stiff rubber tube, which can be carried to all parts of the cavity, with the minimum of traumatism, and through this irrigation made by allowing the hot solution to fall from an irrigator sufficiently elevated to give the necessary pressure. It is advisable to make no effort to remove the excess of fluid which remains after the outflow is clean. Gauze or cigarette drains through the wound are advised, with the patient in the Fowler position. In very septic cases in women, an opening through Douglas's cul-de-sac, with the insertion of a large soft rubber tube loosely filled with absorbent gauze (Van Buren Knott's drainage tube), and in men the insertion of this method of drainage above the symphysis with a large and small tube, the large tube loosely filled with gauze, the smaller one empty, will give sufficient drainage. Every effort should be made to prevent extrusion of the intestines, and these should be handled no more than is absolutely necessary in the removal of the diseased organ and the septic exudate.

CASE III.—R. S., age ten, on December 10th was seized with pain in abdomen, and on the following day brought to the hospital. Temperature, 100° F.; pulse, 124. The abdomen was somewhat distended, the muscles tense, with sharp pain on pressure over the appendix. Operation was done at once by Clinical Assistant Dr. Charles R. Hancock, who found the appendix red, swollen, and with a pin hole perforation. It was not encapsulated. There was a considerable quantity of fluid with free pus in the peritoneal cavity. Through a free Deaver incision the peritoneal cavity was flushed clean with five or six pitchers of hot normal salt solution, a considerable quantity of which was left in, and the wound was closed without drainage.

Comments.—This operation should have been performed twelve hours earlier, when a positive diagnosis of appendicitis could have been made. Although there was a beginning general peritonitis, with free pus, the boy's condition was so favorable that after flushing with salt solution no drainage

was established. Under such conditions, this method is preferable. It hastens recovery and gives security against ventral hernia. Moreover when the case is under constant supervision, any recurring symptoms of general peritonitis can be recognized and drainage instituted at a subsequent operation. When, however, in the opinion of a surgeon there is grave doubt as to the propriety of a complete closure, temporary drainage from the region of the stump through the wound of incision should be made.

CASE IV.—J. W., twenty-one years old, was admitted to hospital on December 1, 1906. For two years he had had severe attacks of pain in the right iliac region, had gradually lost weight, and complained that his appetite and digestion were poor. The diagnosis of recurring appendicitis was made, and the operation was done by me on December 3. There were found adhesions about the appendix, which was bent upon itself and strictured in two places. The wound was closed by the usual method, the patient made an uninterrupted recovery and was discharged cured.

Comments.—Operation should be advised in all cases of recurring, though mild attacks of appendicitis. Such a very large proportion of these relapsing cases end in acute sepsis that it is best to take advantage of an interval when the patient can be carefully prepared and an operation done with the minimum of risk.

CASE V.—C. S. (colored), twenty-nine years of age, had been ill for two weeks with symptoms of sub-acute appendicitis; temperature 100° F., pain over abdomen, especially marked in the region of the appendix. Adjunct Professor Lyle, of my staff, removed the appendix on December 11th. The recovery was marked by no unfavorable symptom.

CASE VI.—J. K., sixteen years old, was examined on December 2, 1906. She had had several attacks of pain in the right iliac region with nausea and vomiting within the last year. With one of these attacks, about a year ago, she was in bed for one week. In August, 1906, a similar attack occurred, followed by a third about two weeks before she came under my observation. Operation was done in the Polyclinic Hospital on December 4th, after two days of preparation. The appendix was adherent and upon removal was found to be the seat of two ulcers. She recovered without any rise in temperature or pulse beyond the normal, and was discharged cured.

CASE VII.—B. P., eleven years of age, came to me on December 17th. Twelve months ago he had an attack which was thought to be appendicitis. He was seized with colicky pains, followed by vomiting, and was put to bed for about ten days. Six months later he had a similar attack, and five weeks ago, before I saw him, a third, so serious that he was in great pain and vomited more or less continuously for thirty-six hours. The abdomen was tender, the thighs were flexed, and there were all the symptoms of appendicitis. Preparatory to operation his bowels were thoroughly moved by two grains of calomel, given in half grain doses every half hour, followed in twelve hours by two teaspoonfuls of epsom salts. Operation was performed on December 19th. The appendix was red, adherent and near its middle there was an impermeable stricture.

Comments.—On the day following operation this patient developed a temperature of 103° F., with cough and pain in the upper half of the left lung. A localized pneumonia was recognized. The lung cleared up within a week and the patient recovered

with no unfavorable symptom connected with the field of operation.

My conclusions in regard to the technique in appendectomy may be stated as follows:

A perpendicular incision four inches long over the rectus muscle about one inch toward the median line from the linear semilunaris should be made; the centre of this incision should be over a line drawn from the naval to the anterior superior spine of the ilium. The anterior sheath of the rectus is divided in the length of this incision, and the muscular fibres carefully separated with a dull instrument and the finger. If any nerve filaments are seen crossing the line of separation they may be held out of the way by retractors. Branches of the inferior epigastric artery or vein may also be avoided by careful displacement with dull dissectors. If any bleeding is present it should be thoroughly stopped by the ligature before the peritonæum is opened. The posterior lining of the rectus and the peritonæum are now divided also in a longitudinal direction. The peritoneal incision should be no larger than is absolutely necessary for thorough operative work. If the omentum lies next to the peritonæum, it should be carefully displaced toward the median line, and should any coils of small intestine present, they should also be displaced in the same direction. At times, tilting the patient slightly on the left side will aid in this displacement. The trained index finger will now usually recognize the appendix. If not readily felt, the cæcum or ascending colon may be recognized by the longitudinal band which, if followed downward, will be found to terminate in the appendix. This should be carefully loosened from adhesions, if such exist, and brought through the peritoneal opening, allowing only so much of the end of the cæcum to protrude as is absolutely necessary for tying off the appendix and disinfecting the stump. The mesoappendix should now be tied off by the insertion of two or three separate catgut loops and divided. The appendix is clamped by an artery forceps, about one half inch from its attachment to the cæcum and slight traction made upon it by an assistant, while the operator with a No. 2 silk ligature ties it about one quarter of an inch from the cæcum. Tension on this ligature should be sufficiently strong to prevent any possible chance of its slipping. When this is done, a gauze swab is split and carried on either side of the appendix. This swab is held between the thumb and finger of the operator, grasping with it that part of the cæcum immediately at the base of the appendix, which is now divided with the curved scissors about an eighth of an inch beyond the ligature. The swab prevents any possible contact of infectious material with the peritoneal covering of the cæcum. The funnel shaped end of the stump is now burned by a drop of pure carbolic acid carried upon a small wisp of cotton upon a metal probe. The excess of carbolic acid is immediately removed by a drop or two of alcohol applied in the same way. The ligature is divided close to the knot, and the cæcum allowed to drop back into its normal position.

It is not necessary to complicate the technique further. It has been demonstrated that so rapid is the formation of an exudate after irritation of the peri-

tonæum, that within a few hours silk material is covered in and entirely hid beneath a rapid cell proliferation. The omental curtain should now be replaced in its normal position between the anterior abdominal wall and the cæcum. The peritonæum and the posterior investment of the rectus which at times is quite thin, is carefully closed with a running suture of No. 2 catgut. Traction upon the edges of the peritoneal incision, lifting it well forward, enables the operator to carry the sutures in place more rapidly. If this precaution is not taken the omentum or intestines may present through the incision and embarrass this stage of the operation. The anterior sheath of the rectus should now be closed by running suture of kangaroo tendon. No sutures should include in their grasp any of the fibres of the muscle. In subjects where there is a great deal of adipose tissue, it is sometimes advisable to approximate these by subcutaneous catgut sutures, closing the skin wound by a subcuticular suture of running silk worm gut.

My preference for the longitudinal, or Deaver, incision is because it not only gives a perfect command of the operative field, but in cases which turn out to be complicated and necessitate a freer incision, it can be extended upward or downward indefinitely, exposing practically the entire peritoneal cavity with a minimum of danger of ventral hernia as a result of the operation.

I employ the McBurney incision only where an abscess is to be opened, and under such circumstances the opening into the pus cavity is not more than a half or three quarters of an inch in extent. This incision cannot be sufficiently enlarged to meet every emergency, without great danger of ventral hernia.

The Kammerer incision, which opens the sheath of the rectus as just described, and then displaces the right edge of the rectus muscle toward the median line, holding it out of the way until the peritonæum is opened and the operation completed, is objectionable in that the replaced muscle prevents the employment of free drainage when this is found to be necessary.

The method here given of dealing with the stump of the appendix is, in my opinion, in every way preferable; it is simple and safe. So far as my knowledge goes, no accident was ever recorded against it. It can be done with the minimum of traumatism. Moreover, a number of accidents have occurred from other methods. Under no circumstances should the appendix be tied off with catgut.

244 LEXINGTON AVENUE.

STREET DIRT AND PUBLIC HEALTH.*

DR. W. GILMAN THOMPSON, M. D.,
New York.

In any fair minded discussion of the street dirt problem, it should be admitted at the first that the noxious influence of such dirt upon the human organism may constitute a predisposing cause of disease by maintaining a constantly irritated or congested condition of the respiratory mucosa, quite as much as it may act as a medium of the direct conveyance of disease germs. For example, the germ

* A paper read before the Section of Public Health, New York Academy of Medicine, April 1, 1907.

of tuberculosis may be derived from association with a tuberculous patient indoors, but the lowered vitality of the mucosa which favors the development of the germ may be acquired in the street. This statement applies to a large number of both acute and chronic germ diseases.

For the sake of brevity the term street "dirt" will be regarded as comprising any or all of the following ingredients:

1. The ashes, house sweepings, etc., which are freely blown about from exposed ash carts and ash barrels.
2. The excrement of horses and dogs voided in the streets, to become dried, pulverized, and distributed by winds and traffic.
3. The irritating powdered asphalt, ground from the surface of the pavements, and often mixed into a slimy paste with mud, horse dung, and the petroleum drippings from automobiles.
4. Pulverized earth, plaster, iron dust, cement, etc., derived from buildings undergoing construction or demolition, and carried about the streets in loosely constructed wagons.
5. The earth from street excavations, usually impregnated with sulphides and other products from leaking gas mains.

6. The soot from chimneys, which eventually settles in the streets and in the winter becomes visible by blackening the snow.

In addition, as less general filth factors may be added: 7. The garbage which in the tenement districts is frequently overturned into the street, especially after heavy snowstorms, when its removal is neglected.

8. Human excrement which in the crowded tenement neighborhoods is often voided by children or adults in blind dark alleys and ill lighted streets.

When the citizen steps into his street for a short walk the opportunity is afforded him of acquiring one or more of the following maladies: A conjunctivitis or serious trauma of the cornea from a spicula of silica from a passing ash cart; a nasal catarrh of more or less severity, sometimes leading to frontal sinus disease; middle ear disease from irritation of the Eustachian tubes; tonsillitis, quinsy, laryngitis, bronchitis, pneumonia, bronchopneumonia, and influenza. If he is subject to asthma, an acute attack may be precipitated, or if he is subject to chronic heart disease, irritation of his lungs may easily excite an attack of pulmonary congestion or oedema. He may inhale the bacillus tuberculosis or develop a catarrh which makes a previously existing tuberculosis fatal. These are mainly inhalation diseases, and all are dirt diseases, which, collectively, constitute a formidable indictment against street dirt and filth. To a certain extent also they are climatic diseases, but only in the sense that frequent changes in air temperature and in degrees of air moisture may lessen vitality and cause mucous membrane irritation, but this fact must not be allowed to obscure or excuse the dirt factor. Worse climatic conditions exist elsewhere with less disease, and it is no exaggeration to state that nine tenths of the diseases of this type, i. e., the acute inhalation diseases and chronic catarrhal diseases, are due directly and chiefly to dirt inhalation.

But inhalation of dirt is not its only evil. During

the winter the masses of dirt covered snow melt slowly and modify the local climate by begetting moisture and chilliness of the atmosphere which favor the development and maintenance of coughs and colds and rheumatism. The crossings often left ankle deep in slush dammed up by sewers clogged with street refuse, make it impossible to keep the feet dry, although the pavements may be passable, and hence arises another factor in causing serious colds, congestive chills, and in women dysmenorrhoea. In the tenement districts the little children whose only playground is the street are liable to have their sensitive lungs irritated, and their sensitive bodies and circulation chilled to a degree which results in causing no inconsiderable share of our infant mortality. In the tenement districts, moreover, where the street life constitutes so large an extension of the house life, the condition of the streets is most important from a social, moral, and economical standpoint, and hence becomes in many ways a medical problem also. Dirt begets dirt, and the tenement dweller who looks into a filthy street only to see his overflowing garbage pail unemptied for a week and his ashcan ruthlessly tipped over on a snow bank, is likely thereafter to empty all manner of rubbish directly into the street. His hallway and his room become filled with the dirt tracked in from the street by the feet of every incomer, and he soon grows less careful in matters of domestic and personal hygiene. Among the well to do, an enormous quantity of moist dirt is conveyed on shoes and skirts into houses to be warmed, dried, and finally inhaled. Moreover, dust laden street air enters the windows in summer and the cold air boxes of furnaces in winter to be also warmed, dried, and distributed throughout the dwellings to the lungs often of delicate persons or those who are compelled to remain in confined, overcrowded work-rooms, living rooms, and sleeping rooms.

In this city many articles of fresh food, such as milk, meat, fish, vegetables, and fruits, are more or less exposed to contamination by street dust, either when being delivered or kept on exhibition for sale. In this way they are coated with bacteria which may hasten decomposition, or prove injurious to the organism if ingested with raw foods.

In the tenement districts much food is sold from push carts or exposed upon the sidewalks for sale, and dust blows from the street into the cheap groceries or dairies where milk is sold. There is thus abundant opportunity for the bacteria which give rise to the fatal summer diarrhoeas of infants and young children, to contaminate their food directly, or by being inhaled by the infants in the streets, to enter their mouths and be subsequently swallowed with their food.

A minor, but by no means unimportant, matter is the difficulty encountered in getting convalescents out doors when the streets are in an improper condition. In winter they may not be able to endure the spinal and pelvic jarring which ensues in attempting to drive through streets riddled with deep holes, whose depth is disguised by accumulated slush and filth, or if they are to walk, they cannot withstand the dust laden air and mud beslimed crossings. Hence, the feeble must continue to remain housed.

Distinction should be emphasized between the effects of moist and dry forms of dirt upon the public health.

So long as dirt remains moist it is relatively heavy, but also sticky. Its adhesiveness favors its being carried into dwellings, public buildings, street cars, and subways, there to be subsequently dried and pulverized. So long as it remains in the street, practically its only deleterious effect is in retaining moisture which if the streets were clean would more quickly evaporate or be drained off through proper channels. This condition reaches its maximum when snow falls upon a flooring of street dirt, and is soon commingled with it by traffic. The dirt protects the snow from speedy melting, and hence prolongs the period of dampness and chilliness in the streets, especially at night. In this manner aged, feeble, or sickly persons become easily chilled by street exposure, or by opening windows near the ground level. Exposure to such influences, popularly known as "taking cold," reduces vitality or the resisting power of the organism, and is a well known predisposing factor in the acquirement of many diseases, not only of the respiratory system, but of other types.

Dry dirt, on the other hand, remains comparatively harmless while at rest. But in the streets it seldom remains long at rest, being disturbed by every breeze and agitated by the wheels of vehicles, especially by the temporary vacuum created by rapid moving automobiles or street cars, and by street sweeping. The longer dry dirt remains in a given street, the more finely it becomes pulverized, and the more widely it is disseminated in the atmospheric air. When thus atomized and inhaled it acts injuriously upon all the sensitive mucous membranes of the respiratory passages, partly through mechanical irritation and trauma and partly by conveying to them and inbedding in their folds a great variety of germs. These germs are not necessarily those of specific diseases such as the *pneumococcus* or *Bacillus tuberculosis*, for such germs are known to be killed by conditions of prolonged exposure to dryness and sunlight, whereas moisture proves favorable to their longevity. But sufficient nonspecific germs are conveyed by street dust to excite catarrhal or purulent inflammations, and by thus fostering a chronically diseased or irritated condition of the respiratory passages, the latter are rendered liable to more serious infections.

Herein lies the chief menace to health from street dirt. The danger is complicated by the fact that the sputum of patients having chronic tuberculosis, bronchitis, or nasopharyngeal catarrh, expectorated when they are at large in the streets, is swept from the sidewalks and added to the general street dirt.

It is unnecessary to adduce statistics in support of these elementary propositions, so well known by personal experience to many laymen as well as physicians. At certain seasons, when the streets of this city are presenting an exacerbation of their chronic uncleanness, after a day or two of gusty winds, an epidemic of acute coughs and colds and catarrhs is always realized, not only among those who suffer from chronic respiratory ailments, but among those in previous health.

One of the great difficulties in obtaining permanently clean streets in New York city appears to

reside in the multiplicity of authorities controlling them. Any one who has had the experience of asking for the removal of a mound of dirt from in front of his house appreciates this difficulty while he is successively referred from one bureau or department to another. Among these various authorities, all having more or less limited control over street operations, are the Bureau of Public Highways, the Bureau of Street Encumbrances, the Police Department, the Building Department, the City Gas and Water Bureaus, the Health Department, the Sewer Department, Bureau of Street Pavements—all these, besides the Street Cleaning Department, with its subdivision controlling the removal of garbage. Such a degree of subdivision is doubtless necessary in these days of extreme specialization in all classes of labor, but unfortunately it leaves a loophole of escape from complaints by shifting responsibility perpetually from one department to another, thus causing delay, confusion, and even the unhealthful conditions to which we are more or less constantly subjected. When the "white winged" street sweeper in the course of his leisurely peregrinations encounters a pile of filth under a stalled wagon it is easier to pass it by than get the police to cause the removal of the wagon—the responsibility is not his. When he finds a large hole left by the hydraulic mining operations of the hose washing brigade, or perennial excavations of the gas company, and filled with manure and other forms of dirt, in lieu of pavement, it is easier to sweep gently over it than clean it, for the responsibility surely is not his. And the long suffering citizen who finally turns and complains of the foul conditions under which he is compelled to live and breathe in his own street, is met with an incomprehensible statement from the Street Cleaning Department of how many scores of miles of other streets than his own are "swept" every day, or how many other garbage pails than his own are emptied every day. Meanwhile, if he recovers from his attack of pneumonia, he will have leisure to reflect on such gratifying and altruistic statistics.

The problem is doubtless most complex and the conditions in this city most unusual, for are we not told so by each succeeding head of the Street Cleaning Department? Be this as it may, it would ill become this academy to meet merely for criticism without offering some practical proposition for betterment. I would, therefore, submit the suggestion that after further discussion of this important topic this evening, a resolution be acted upon to the effect that:

Owing to the accumulation of street dirt in this city, the health of many citizens is impaired, so as to render them frequently and unnecessarily subject to serious and often fatal respiratory diseases, and that in order to secure permanent improvement in street cleanliness, the mayor of the city be urged to appoint a commission to study and report upon this matter and formulate a proper scientific plan for permanent relief from conditions which afford a constant menace to health as they now exist.

If it is to do nothing more, such a commission might at least ascertain the real reason why we cannot have covered ash carts (!), but if it is to act within its proper scope, it would consider the whole subject from its medical aspects as well as its engi-

neering problems, its economic side, its administrative efficiency and responsibility, and its permanence. Such an inquiry, moreover, should comprise a thorough study of the good results long since obtained in other large cities, and a solution of the adaptation of modern scientific methods as practised elsewhere, to the special local difficulties in New York. Its report would furnish an appropriate basis for legislation and secure permanent relief.

34 WEST FIFTH STREET.

THE TYPHOID SPINE.

BY V. P. GIBNEY, M. D.,
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When the term "typhoid spine" was first suggested in 1889 it was distinctly stated that the term carried with it no pathological commitment. It was declared that for a long time certain spinal phenomena had been observed in connection with typhoid fever, but that no attempt had been made to embody these phenomena into an entity. A suggestion was made, based upon what seemed good foundation, that a periosteal lesion, inflammatory in character and caused by the presence of the typhoid bacillus, was, in all probability, a lesion that could be accepted. Soon after the publication of the original article, other reporters came forward with contributions recording cases which presented a fixed deformity, and the term "spondylitis" was employed to designate a destructive lesion in the bodies of the vertebræ resulting in deformity such as one gets in Pott's disease of the spine. Again, the term "neurosis" was invoked as explaining certain cases where no deformity existed. An osteoarthritis, posttyphoidal and involving the transverse processes and lateral masses as well as the articular borders of the vertebræ, was believed by some writers to be the prevailing pathological condition.

One of the most recent contributors to the subject is Thomas McCrae, of the Johns Hopkins Hospital. His paper on Typhoid and Paratyphoid Spondylitis with Bony Changes in the Vertebræ was read at a meeting of the Association of American Physicians in Washington in May, 1906, and published in the December number of the *American Journal of the Medical Sciences*. He states on page 887: "There may be both a spondylitis and a perispondylitis. As Gibney suggested in 1889, it may be an acute inflammation of the periosteum and the fibrous structures which hold the spine together. Arthritis of the vertebral joints is a possibility, but arthritis of any joint is very rare in typhoid fever." As confirmatory of this last statement let the following case, seen within a fortnight in consultation with Dr. Starr and Dr. Le Conte, in Philadelphia, be narrated:

A girl, 19 years of age, developed typhoid fever early in January of the present year, and four weeks after the invasion and on the subsidence of the fever, the developed deformity was regarded as an exacerbation, and a week later complained of pain about the left hip, the thigh being drawn into adduction and flexion with reflex spasm, strongly suggestive of a joint lesion. For several days following this there was decided tenderness and pain in the groin centering about Scarpa's space. Trac-

the case was seen in consultation a few days later, all joint symptoms had disappeared, but there remained a fullness on the inner side of the thigh, and tenderness on pressure along the shaft of the femur extending quite down to the knee. There was at the same time an increase in the size of the thigh, but no fluctuation nor other evidence of pus formation. It was at once recognized as a periosteal lesion dependent, in all probability, on the typhoid bacillus.

A periostitis of the vertebræ naturally suggests involvement of the articular borders and the foramina of exit of the nerves, and the many cases already on record of bony enlargement are confirmatory of the theory first advanced as the primary pathological lesion.

McCrae's conclusions are:

1. In certain instances of typhoid spondylitis there are certain definite bony changes in the vertebræ.
2. The general features of the condition suggest the probability of organic changes in the spine being an usual occurrence.
3. The similarity of the changes found in typical spondylitis and those found in spondylitis of other infections, especially arthritis deformans, suggest that the latter may be due to various infectious agents.

A reviewer in the *Journal of the American Medical Association*, January 5th, 1907, page 53, after a brief analysis of the prominent feature, of the disease, sums up as follows:

There has been a good deal of dispute as to the nature of the process. Gibney favored the view that it is due to organic changes, probably in the form of a periostitis; Osler inclined to the belief that in most instances it is a neurosis. Of late years there has been a strong tendency to regard Gibney's original views as the more probable, and the case reports of McCrae certainly favor the idea that an actual organic lesion is often present. There is every reason why such organic lesions should occur, if we judge by the behavior of the typhoid bacillus in bony structures elsewhere. Since Quincke first pointed out the frequency with which the causal agent in typhoid is to be found in the bone marrow, increasing attention has been paid to the osseous complications of the disease. Aside from actual osteomyelitis, periostitis is far from uncommon in typhoid fever, and even when actual osteomyelitis occurs it differs from the ordinary forms in its curious chronicity and tendency to spontaneous disappearance without suppuration. In view of McCrae's findings and other similar ones, it is reasonable to suppose that in most instances the typhoid spine, or better, typhoid spondylitis, is an organic lesion of an inflammatory nature associated with the presence of the typhoid bacillus in the periosteum or bony structure of the spinal column. The failure to find definite organic changes in patients with this condition is doubtless due to the difficulty of detecting changes in the spinal column when these are of a localized character and do not impair the integrity of the structure as a whole. That actual deformity does occur is certain, but it seems to be uncommon.

It seems pretty well established by a number of cases already on record that trauma plays a very important part as a factor in the ætiology. The writer of this paper has under treatment at the present time a patient referred to him by Dr. Francis Delafield in May, 1906.

The history this patient gave was that some three years prior to May, 1906, she had typhoid fever and made a pretty fair recovery, but has never been quite as strong as before the attack, and that a year subsequently she fell from a hammock. There were no immediate effects, but later she began to have pain in her

back. There is now a boss involving the eleventh and twelfth dorsal and the first lumbar with a slight lateral deviation, the spinous process of the twelfth dorsal forming the apex. There is fullness on the right side of this shading off into the iliocostal space with marked tenderness. There is no gross spasm on the right side but a little on the left. An x ray photograph shows a thinning of the bodies of the vertebrae on the side of the concavity with some overgrowth of bone as if she suffered from an osteoarthritis. Prompt relief has been afforded by the accurate adjustment of a posterior spinal assistant, and while the case is still incomplete, there has been no increase in the deformity.

The clinical features of the typhoid spine have been so elaborately set forth during the past twelve or fifteen years that it would be out of place to go into further detail on this phase of the subject. But one cannot help but admire the elaborate report of a case by Dr. Leonard W. Ely, of this city, presented at the Orthopedic Section of the Academy of Medicine on November 21, 1902, and published in the *Medical Record* of December 20th. The interesting feature of this case was the utter failure of all methods of treatment and the important part played by time in the final cure.

The reporter this evening wishes to state that he has had fairly good results in a reasonable length of time by resorting to fixation of the column, the avoidance of trauma, the free use of the Paquelin cautery, and the subsequent employment of well directed massage and graded exercises. He begs leave to present one or two cases not heretofore published, and regrets his inability to furnish a more complete set of cases. This is due to a slovenly habit in not keeping a case index. Taking as he recalls the names of the patients whose cases have made an impression, the following are added to those already placed on record:

CASE I.—A gentleman, twenty-eight years of age, was seen in consultation with Dr. Henry S. Stearns and the late Dr. George R. Fowler, on December 26, 1896. In July of that year he had had an attack of typhoid fever which was practically a walking case. At no time were there any alarming symptoms, but from the onset he complained of pain in his back. At the end of five or six weeks he was convalescing, his temperature having dropped to normal. He left his bed, but complained of an occasional pain in his back, and indeed was conscious of some distress all the while. In the latter part of September he made a misstep and felt at the time a sharp pain in his right side, lumbar region. It was not sharp enough to cause him to fall, and after a little rest he was better. Two or three weeks later, while flying a kite, he strained his back, and the pain at this time was so sharp that it doubled him up and brought him to the ground. From that time his pains became more frequent, were more easily induced, and six weeks before this consultation, he was brought to this city and taken on an ambulance from the train to his house. Any attempt at moving or examining him seemed to bring on a terror that was pitiable. Two or three weeks after his arrival in the city his temperature arose to 103° F., and in two or three days it was normal again. We found a point of tenderness over the lateral masses of the first and second lumbar vertebrae, right side. Examination was rather exhausting, and while it revealed no deformity, nothing in the iliac fossa, and only these points of tenderness mentioned, he described his pains as shooting down the course of the anterior crural nerve on the right side. We agreed on the diagnosis and treatment, namely, the Paquelin cautery, three times a week, and a Knight

spinal brace, which we fitted within a few days. On the golfing factory, a little over a month later, he was able to get out of bed easily, had been up and down stairs once or twice, and his sharp attacks of pain had practically disappeared. He continued to improve, and early in August of the same year he strained his back a little, had some temporary pain, mostly fright, and the cautery was advised. A year later this patient challenged the reporter to a game of golf and the challenge was not accepted. Up to the present time, it may confidently be stated that there has been no relapse.

CASE II.—A gentleman, forty years of age, came under treatment March 26, 1899. He had an attack of typhoid fever in October, 1898. He was treated in the Presbyterian Hospital by Dr. Gilman Thompson, and his case was reported as a very severe one and at times critical. He managed to get in all the complications, and early in the disease he began to complain of pain in his back. On convalescing from the typhoid, his back gave him more trouble. He resorted to Turkish baths, shampooing, etc., and finally went to Aiken, where massage and baths were employed, but he found himself getting more and more helpless. When he came under the reporter's observation he walked with a good deal of care, stooped like an old man, and leaned to the left side. The spinal column was flexible enough, but pain was induced by the least jar or any sudden movement. The pains were referred to the loins chiefly beginning at the erector spinæ muscles and would radiate to the outer side of the body. If he made a misstep his muscles would contract and he would utter a grunt like one with hiccough. He was obliged to grasp his thighs at times to steady himself. There was no marked spinal tenderness on pressure. The cautery was employed, and the back was strapped pretty well with adhesive plaster, and a Knight spinal brace was ordered. On March 29th, three days later, his improvement was fifty per cent. as far as appearances went, he reported he felt quite himself again, and on the day before he walked about with comparative ease. The brace was merely fitted, not applied, that morning, and he begged that the plaster be left off in order that he might enjoy a Turkish bath. On March 31st, the following note was made: "He suffered a good deal of pain since the day before yesterday, and he called in Dr. Thompson last night for relief. The brace is applied to-day, and a broad band between the side bars is laced over the back so as to give better support, and he feels much relieved. He was so much better on April 1st that he desired to go to his country home, and on the 3rd of April, a letter was received stating that he had failed to adjust the brace properly and was in great distress. The subsequent history of the case was that of gradual improvement, dependence, apparently, on the frequency with which the cautery was employed and the proper adjustment of the apparatus. On the 24th of May he reported that he was playing golf, had no pain nor ache of any kind, was allowed to leave the brace off for a day or two at a time, and was discharged practically cured. From that time to the present, the gentleman has been seen on the golf links, and he reports that his back never gives him any discomfort.

The value of the cautery as a counterirritant has proved so valuable in the writer's hands that he feels justified, in recommending it above all other counterirritants. The plaster of Paris jacket or corset has not proved so valuable an agent as has the simple Knight spinal brace or the posterior spinal assistant of Taylor. The criss-cross strapping with zinc oxide adhesive plaster has been a valuable adjunct, especially in the milder forms of this disease. Potassium iodide has been given in certain cases, but not with any definite results. Where de-

formity exists, as it undoubtedly does in certain instances, it is necessary to wear apparatus for longer periods. In view of a destructive process going on in the bodies of the vertebrae, the remarks made by McCrae in his conclusions, namely, the similarity of the process to that in arthritis deformans are quite suggestive, and it may be well to call the attention of the Academy to the value of immobilization in cases of arthritis deformans rather than the methods so commonly employed of massage, shampooing, electricity, etc., etc.

It is not intended to throw discredit on the work of a masseur or the various baths throughout this country as well as those abroad, but it is intended to emphasize the importance of a clean cut diagnosis by a careful examination of the parts, by interpretation of the pains in an honest endeavor to determine whether the pains are radiating and due to pressure on a nerve, or whether they are boring pains of surfaces rubbed together, and after having made a diagnosis adopt methods of treatment that may be regarded as rational. If one has an acutely inflamed surface, whether the result of trauma or an exudate or of the surgeon's knife, the first indication is to put the parts at rest and keep them at rest so long as the parts remain sensitive. In spinal lesions it is important to immobilize not only the parts involved but those contiguous thereto, above and below, and to get an accurate adjustment of the immobilizing apparatus. It is often necessary in these very acute cases to supplement this fixation by means of rubber adhesive plaster, criss-cross strips, from an inch to two inches in width, and half encircling the body. It is true that patients frequently complain when the plaster is removed, but they do get so much relief after a pretty good adjustment of same that removal is tolerated, especially if the surgeon remind the patient that the removing of it makes a pretty good counterirritant. It is important also to remember that the apparatus must be worn for months in the average case. Remembering, as we must, that the pains are often caused by trauma, one can readily understand how trauma will induce an exacerbation, and the object of the apparatus is to prevent traumata. A patient often feels so well that he takes liberties with the apparatus and discards it contrary to the advice of the surgeon. He hears so much about gymnastics and athletics and the wonderful skill of the masseur that he takes the case into his own hands, and often gets a relapse as a penalty.

The Paquelin cautery, in conclusion, is insisted upon as a regular line of treatment as long as tenderness and pain on movement exists. Even after all tenderness subsides it is a good plan to employ the cautery occasionally, say once a week or once in a fortnight. It has been shown that even these deformities and areas of infiltration, bony or muscular, disappear after a while, and fortified by this assurance, the surgeon can decide when to begin the convalescing part of the treatment, namely, douches, hot baths, and systematic graded exercises, the object of which is to correct the stiffness developed in the muscles which have been for a time out of commission, and to restore the tone generally to the spinal column.

Nothing has been said thus far about anodynes and hypnotics. The histories of many of the cases

now on record show that these are often necessary, even to the administration of chloroform. The writer does not recall any instances where the drug habit has been acquired. The administration, therefore, of hypnotics must be left to the individual practitioner with the suggestion that, if the aforesaid treatment by fixation and cauterization are carried out, hypnotics will not be in great demand.

16 PARK AVENUE.

THE PATHOLOGY OF FUNCTION. AN EXPERIMENTAL LABORATORY COURSE.*

BY HAVEN EMERSON, A. M., M. D.,

New York.

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An awkward gap in the otherwise well developed and symmetrical course of studies, offered in our leading medical schools at present, has appeared to various writers to lie in an absence of a study of the functional errors resulting from disease. Normal anatomy and histology with physiology as they are offered to first and second year medical students give a sound knowledge of structure and function in the human body. Pathological anatomy and histology offer him the picture of the end results of disease, but what he knows of disordered function depends upon the point of view of his instructor at the hospital bedside or in the dispensary, and, I believe, it is fair to state that almost the entire attention of the clinical instructors is bent upon discovering the errors in structure as betrayed by physical examination and the various clinical tests. This effort tends to make the students look with the eye of the pathologist chiefly, and to omit a comparison between normal and diseased function. However, it is the disordered function of which the patient complains, and it is the pathology of function which we try to bring within physiological limits by our treatment.

Bearing in mind the appeal of Dr. Winfield S. Hall for a course to fill this deficiency, and with the example of the admirable course in the pathological physiology of the circulatory system offered in the autumn of 1905 by Dr. W. G. MacCallum of the Johns Hopkins University, I ventured to give a course of a similar nature to a group of students and physicians in June, 1906.

Most of the methods and procedures used were those ordinarily employed in laboratory courses or demonstrations in physiology, and require little or no description. The course was given in three-hour periods, six days in the week for three weeks. The following is a description of the eighteen sessions.

SESSION I.—*Peripheral Arterial Blood Pressure.* A healthy man, age twenty-eight, was used. The details of the use of various tonometers was explained and the Janeway and Erlanger tonometers were put into operation. In the subsequent records the Janeway instrument with the 13 cm. arm piece was used.

Patient fasting, 10.15 a. m., and in the recumbent position. Pulse 64; respiration 20; systolic pressure 118 mm.; diastolic pressure 80. After eating a breakfast of meat sandwiches, one boiled egg, and a glass of water, he was tested at 10.45. Pulse 80; systolic pressure 124 mm. During the next half hour a summary was given of the usual causes of occasional and per-

Read before the Society of the Alumni of Bellevue Hospital, April 3, 1907.

sistent high and low arterial pressure. Then a series of readings were taken with the tonometer. Recumbent position. Heels lifted by an assistant, the knees being extended until the legs were vertical. Systolic pressure 130 mm. The manometer was repeated by the patient's own effort, resulting in a pressure of 145 mm. The value of abdominal pressure in raising, and the danger of pressure on the thorax in lowering arterial blood pressure, are to be noticed, especially in the methods of artificial respiration where pressure in any way upon the thorax in assisting expiration is to be avoided, while abdominal compression serves the double purpose of emptying the lungs and forcing blood pressure up to an efficient point.

The relative value of passive and active exercises in convalescence, the importance of the action of the abdominal muscles and diaphragm in maintaining pressure during exertion, and the value in cardiac disease of massage and passive movements versus active exercises were thus illustrated.

The Trendelenburg position was assumed and the systolic pressure found to be 140 mm. The legs and abdomen were bandaged with firm muslin from the feet up, and the pressure was read at 130 mm. These observations were introduced to emphasize the relative value of procedures to meet low blood pressure as it occurs in many medical and surgical emergencies. After a rest of five minutes again a control observation was taken. Pulse 68; respiration 22; systolic pressure 122 mm.; diastolic pressure 85 mm.

The subject was then seated on a stool and told to strain as in defecating, and for a period of thirty seconds the pressure remained at 160 mm.; what with the glottis closed and the body braced appeared to be moderate straining, developed a pressure of 140 mm. the risks attendant upon vomiting, coughing or straining in constipation or at urination were thus easily subject to proof, and demonstrated the importance of avoiding such risks in advanced arteriosclerosis. The subject was then allowed fifteen minutes to smoke a cigar, after which pressure was found to be 124 mm. This is not representative of the usual effects of tobacco, as he was accustomed to large amounts of strong tobacco, and the cigar he smoked was small and light.

Then five minims of a 1 to 1,000 solution adrenalin chloride were given subcutaneously. The pressure went to 130 mm. and remained at that level for six minutes. The pulse during the same time dropped to 60, thus illustrating the normal accommodation of the heart to any excessive pressure, and imitating fairly accurately the slow pulse of the arteriosclerotic with a compensating cardiac hypertrophy in whom we so often find a moderate bradycardia.

Five minims of amyl nitrite were administered on cotton, and three readings, taken at two minute intervals. Pulse 114, 92, 76; systolic pressure 90, 100, 118 mm. These sudden changes and equally prompt adjustments of the heart rate under varying degrees of peripheral resistance, are not present in those suffering from various cardiac neuroses or from a doubtful compensation in organic heart disease, or where the general muscular tone has been lost through debilitating disease or lack of nourishment and exercise. Such simple tests, if made clinically, would often tell us more than can auscultation and percussion, of the functional capacity of the heart and vessels.

Two copper wires wrapped with cotton moistened in salt solution were placed well within the nares and faradic stimulation applied until lachrymation became uncomfortable, and the following records noted before, during, and after stimulation:

	Normal.	Stimulation.	Normal.
Pulse	70	56	64
Pressure	118 mm.	134 mm.	129 mm.

The value of this well known reflex vasomotor ef-

fect of stimulation of the fifth nerve is not often appreciated.

Ammonia was inhaled, with a rise of the pulse to 72 and of the pressure to 128 mm.

A rest in the recumbent position of five minutes with a pulse of 64, respiration 20, and systolic pressure of 120 mm., was followed by five minutes of vigorous exercise, when the pulse was found at 82 to 76 and the pressure at 164 to 140 mm., these readings being taken in the recumbent position during a period of three minutes. After five minutes' rest the pulse was 76 and the pressure 122 mm. This offers another useful method of testing the functional efficiency of the circulation when the ordinary clinical methods fail to expose any marked defect. Hyperpnœa was established by the subject's taking a series of forced deep breaths, until slight dizziness occurred, when it was found that the pressure had dropped to 110 mm., and the pulse rate had risen to 104. A control observation five minutes later gave a pulse 76, pressure 120 mm. A cup of hot coffee was given, and five minutes later the pulse was still 76, but the systolic pressure went to 142 to 150 mm.

This occupied three hours. Another full period could well be given to comparative tests between a healthy subject and a sufferer from endocardial, myocardial, and vascular lesions. Sufferers from arrhythmia and various types of the cardiac neuroses, as perhaps the tachycardia of the nicotine intoxicant, or of exophthalmic goitre, could be tested with advantage.

The effects of treatment by massage, the Nauheim baths, or cold and hot spinal douches, and the results of psychical excitement, could be profitably studied and be made the subject of exact demonstration and record.

SESSION II.—*Pericarditis.*¹ *Myocarditis.* A dog was etherized, tracheotomized, and kept continuously under deep narcosis until death was caused at the end of the experiment. The chest wall was shaved and the usual methods of auscultation and percussion were employed to establish the normal outlines of the heart and the character of the sounds. A cannula was inserted in the carotid artery and connected with a manometer arranged for kymographic tracing. The time, in two-minute intervals, and the abscissa for the pressure curve were also recorded upon the drum.

A few tests of the effect of pressure upon several parts of the body were made to accentuate the observations made in the previous lesson. Manual constriction of one or both legs caused a rise in arterial pressure of from 5 to 15 mm. Hg. Pressure upon the abdomen caused a rise of 25 to 30 mm. Pressure upon the thorax caused a drop of 20 to 30 mm.

The sternum was trephined at the third costal cartilage and a cannula inserted into the pericardial sac. 30 cc. of saline solution were injected slowly into the pericardial sac. Cardiac dulness was much increased and the heart sounds became almost inaudible. Dyspnœa was marked, and a displacement downwards of the liver was noticed. The blood pressure was scarcely at all affected by such a moderate amount of pericardial distention. When further injection of fluid was attempted the cannula was found to have penetrated the pericardium and entered the left pleural cavity, and collapse of the left lung followed.

Artificial respiration was established and continued for the following two hours. The thoracic cavity was opened by a median section of the sternum and the heart exposed.

Alcohol, 95 per cent., was then injected into the muscular tissue of the right and left ventricles, a continuous record of blood pressure being kept on the

¹ A much more striking and successful test of experimental pericarditis is to be found recorded in the paper by Dr. W. G. MacCallum, referred to above.

kymograph. Each injection of about 25 minims resulted in a brief period of tumultuous action of the heart, a lack of synchronism of action of the two halves being noticeable. This always caused a prompt, though not severe, drop in carotid pressure, followed immediately by a rise to within a few millimetres of the normal height. By the time six injections had been given, the blood pressure was about 40 to 50 mm. The normal at the beginning of the experiment was about 160 mm. At this time it was evident that the heart was laboring. The apex was blunt and rounded. The heart cavities were engorged, especially on the left side. The blood was of a deep venous color. Each injection caused an immediate coagulation of muscle substance and the ventricle was scarred, as it were, with what appeared strikingly like the myocardial changes of an old heart with wedges of fibrous and fatty tissue replacing the muscle. From this point a subsequent series of 6 to 10 more injections, some into the auricles, and the majority into the left ventricle, produced no further permanent drop in pressure.

Finally an attempt was made to include the anterior interventricular branch of the coronary artery in the field of the coagulation infarct. At once the left ventricle ceased to contract, the carotid blood pressure dropped to zero, the right auricle and ventricle became enormously engorged, and death from asphyxia of cardiac origin ensued in five minutes. Gross examination of the heart muscle showed wedges of coagulated tissue in some places occupying the full thickness of the ventricular wall, and giving a picture similar to that presented in advanced fibrous myocarditis. The coronary branch was the seat of a coagulation thrombus.

It was certainly impressive to have seen a pressure of 40 to 50 mm. maintained over a long period by a ventricle which seemed to have lost the function of about one half its bulk. The effectiveness of vasoconstriction in assisting a falling pressure was thus indirectly shown.

A comparison with pathological specimens and the reading of clinical histories, in the presence of the autopsy material in cases of well marked myocarditis or of coronary sclerosis, would have added interest, in view of the interpretation of clinical signs and symptoms which the experiment offered.

Variations in the production of pericardial effusion readily suggest themselves, such as the use of gelatin solutions or defibrinated blood, and fluids with toxic material; rapid and slow accumulation of fluids; pericardial effusion with and without accompanying pleural effusions. The later results of cardiac failure from pericardial pressure, or from coagulation infarcts, could be obtained by having preparation made some hours before the class assembled.

SESSION III.—*Aortic Stenosis.* A dog was etherized and tracheotomized, and anæsthesia maintained until death was caused at the end of the experiment. The heart was exposed and artificial respiration established. A cannula from the carotid and another from the left ventricle were connected with mercury manometers recording upon a drum kymograph. A cannula in the femoral vein was connected with a water manometer, but delay in the preparation of the apparatus allowed clotting in this cannula, and readings could be taken for only a short period. The carotid and ventricular pressure, a time curve and base line, were recorded upon a continuous paper kymograph. The aorta was constricted gradually with a clamp and the ventricular pressure rose while the carotid pressure fell. The clamp was left in situ and the following tests were made:

Faradization of the nares caused a rise of both pres-

ures, but the carotid presently mounted above the ventricular pressure, owing to reflex vaso constriction. Abdominal pressure caused a rise in the carotid pressure, but a great fall in ventricular pressure, the extra effort to empty the ventricle against the increased aortic pressure causing a failure of the ventricle which had been previously barely compensating for the obstruction at the valves.

Asphyxia was produced by cutting off the artificial respiration. The usual result failed to occur and no rise in the carotid pressure resulted. The failing heart was unable to respond to a need of better circulation through the respiratory centre; normally an increased strength of cardiac contraction follows asphyxia, however produced.

A gradual drop in the carotid and ventricular pressures took place, resulting in frequent clotting in the cannulas. The thrill at the stenosed valve was easily felt by resting the finger lightly on the clamp. Periods of extreme irregularity occurred, with no marked intermittence in the beat. Dilatation of the left ventricle, and later, of all the heart cavities, was progressive from the first establishment of stenosis.

The failure of the pressures was gradual until death resulted with the picture of asphyxia. The heart appeared much flabbier than normal, but no insufficiency of the mitral valve could be demonstrated.

SESSION IV.—*Aortic Regurgitation.* A dog was etherized, tracheotomized, and artificial respiration established, the anæsthesia being maintained until the animal was killed. A cannula in the right carotid artery and one in the left ventricle were connected with mercury manometers which recorded upon a kymograph drum above the abscissa and time record.

A long hooked knife, such as is described and figured in Dr. MacCallum's paper, was passed down the left carotid to the aorta. When the aortic valve was reached the knife was forced through one of the segments, the injury at once resulting in a drop of carotid and ventricular pressures to about one third their previous and normal values.

The effect of various procedures was then tested with the heart thus injured. Raising the hind part of the body by the legs caused a distinct rise in both pressures. Of a saline solution 100 c.c. were injected slowly into the external jugular vein caused a rise in both pressures which persisted. Another 100 c.c. resulted in a slight rise which was not sustained. 50 c.c. more resulted in a drop in both pressures. This illustrates the disadvantages resulting from hydræmic or plethoric conditions in aortic regurgitation. The clinical benefits resulting from measures tending to deplete the circulation and relieve the laboring heart from the necessity of pumping such a volume of fluid as is found in individuals who, owing to their valvular defect, lead sedentary lives, are well recognized. Various Spa courses of treatment, as for example, a salt free diet, mild catharsis, and resistance exercises are based on these principles.

A moderate aortic stenosis was produced and the ventricular pressure rose slightly, the carotid pressure remaining about the same.

Pressure upon the abdomen caused a rise in both pressures. A slight occlusion of the tracheotomy tube giving but moderate asphyxia, or rather producing slight dyspnoea, instead of resulting in a rise of pressure, caused a drop in pressure and almost immediate death.

These various procedures were expected to accentuate the usual observation that, while a severely injured valve may be so compensated for by cardiac hypertrophy that a normal arterial pressure will result, the slightest extra strain from any part of the circulation is likely to overcome the balance and cause prompt cardiac insufficiency.

Observations at such a short interval after the production of the lesion are not supposed to be exactly comparable to the conditions brought on in the years of a chronic valvular disease, yet they bring out enough important lessons to warrant their careful study.

The remainder of the period was spent in operating upon another dog under anæsthetic and aseptic precautions, to produce an aortic regurgitation to be observed at a later date.

The carotid on the left side was exposed, and a small longitudinal incision was made between two pressure clamps. The special knife was then passed into the cut and down to the aortic valve, the handle of the knife occluding the opening in the artery meantime. The aortic valve was passed and an attempt made to cut a segment on the return of the hook. After two attempts the pulse in the femoral artery was noticed to fail in its pressure, and it then became almost imperceptible. The carotid artery was tied above and below the opening, and the wound in the skin was closed. This dog was examined at frequent intervals during the following two weeks, and was autopsied on the last day of the course. Briefly the physical examinations of this dog elicited no abnormal signs except the presence of a murmur which appeared after a few days. This murmur was scarcely audible when the animal was quiet, but after exertion it was distinctly heard, soft, blowing in character, diastolic in time, brief, and heard loudest at the base of the heart, and referred also down the sternum. This murmur grew less perceptible towards the end of the two weeks, but was to be found always in the same position and time. The general condition of the dog between operation and death was not abnormal.

On autopsy a large hæmatoma was found in the upper and anterior mediastinum, opening from a small wound in the common carotid artery where it leaves the aorta. The aortic segments appeared normal except for a thickening of the posterior and the left anterior segments, and the presence of delicate granulations upon their upper surfaces, and two small rice-like fibrous kernels on the aortic wall behind the posterior segments. The injury evidently had caused some temporary incompetence, but repair was already in progress, and undoubtedly there would have been no permanent defect.

SESSION V.—*Pleurisy with Effusion.* A cat was etherized and tracheotomized, and kept under anæsthesia until death, and arrangements were made to record the carotid pressure, the respiratory rate, the abscissa and time curve, and the pressure in the two pleural cavities. To test the instruments, manual pressure was made upon the abdomen, and the carotid pressure rose 50 per cent. with a slight decrease in the negative pressure in the two pleural spaces, and a diminution in the respiratory excursion. Manual pressure on the thorax caused a drop of 60 per cent. in carotid pressure and a decrease in the negative pleural pressure of 50 per cent. Saline solution was then allowed to flow into the left pleural cavity through an aspirating needle to the amount of 95 c.c. The negative pressure upon that side fell 50 per cent. The carotid pressure remained unaffected. Some time was then spent upon the study of the physical signs of the chest as compared with the examination made at the beginning of the session.

Briefly we found flatness with absence of respiratory murmur in the lower part (posterior in the cat), of the affected side, with bronchial voice, or ægophony at the level of the liquid and small moist râles just above (anterior in the cat). After fifteen minutes the negative pressure on the affected side was found to have increased about 20 per cent. over its previous low value, apparently indicating an absorption of much of

the fluid. A further forcing of fluid into the left pleural cavity brought about an urgent dyspnoea, accompanied by the appearance of considerable clear fluid in the trachea. The fluid was then withdrawn by the aid of a vacuum bottle, 60 c.c. being removed in about three minutes. This rapid removal resulted almost immediately in death.

The autopsy showed much fluid and froth in the lungs and what appeared to be a condition of œdema of the lungs. The lungs had not been punctured.

SESSION VI.—*Cardiac High Pressure, Pleurisy, Hemorrhage, and Death.* Two rabbits received 2 c.c. each of adrenalin chloride solution 1 to 1,000 through the vein of the ear. In five minutes all showed prostration with very frequent and shallow respirations and more or less clonic spasm. In ten minutes two had died, A and B. In A death was less immediate than in B and preceded by progressive muscular weakness, very rapid respiration and slight cyanosis of the nose, the lips, and the mucous membranes. No respiratory or cardiac changes had been found on auscultation. An autopsy was performed upon A as soon as the respiration had ceased, and the tissues were blanched and bloodless, as from a fatal hæmorrhage, to such a degree that not a drop of blood flowed on opening the thoracic and abdominal cavities, although peristalsis persisted and cardiac contractions were still visible. The lungs were engorged with blood, and there were areas of intense hæmorrhagic infiltration. (Edema in the usual sense of the term had not been produced. The heart was enormously distended and the left side had ceased to beat. The inferior vena cava was cut below the diaphragm, allowing free hæmorrhage. At once the occasional cardiac systoles, which by this time were limited to the auricular appendage on the right side, became more frequent and more vigorous, and presently extended to both ventricles, even to the apex. This marked improvement in heart action was evidently due to relief from the excessive intravascular resistance which had overcome the heart and caused death. Clinical comparison is obvious.

At the autopsy upon B about the same picture was presented, and, in this instance also, the lungs had given no auscultatory signs of œdema, in spite of the fact that they were engorged with blood, and serous fluid could be forced from their cut surfaces.

C, being a larger animal, recovered after passing through the stage of enfeebled respiration, the effect of the drug wearing off before the heart was overcome. The interesting part of this case of high arterial pressure were the following physical signs: While the respirations were frequent and shallow, a loud blowing murmur was heard at the upper cardiac area. This was a cardiac and not a respiratory murmur. As bodily enfeeblement progressed to the point of complete muscular relaxation the animal lying prostrate upon its side, with the head flat upon the table, the murmur became fainter and was almost lost. In about fifteen minutes, when the animal showed evidence of improvement by quieter breathing and better muscular control, the murmur again became marked, gradually fading in intensity until at the end of half an hour, the animal appearing to have fully recovered, the murmur could not be heard. The rabbit was not killed. This case seemed to present a picture of arterial constriction carried to such a degree as to cause acute dilatation of the heart with a resultant relative insufficiency, probably of both the mitral and the tricuspid valves, the transient action of the drug permitting a resumption of normal circulation without the heart suffering permanent injury.

As a sequel or addition to such an experiment it would be well to study the chronic changes in the larger vessels resulting from repeated doses of ad-

renalin, and a comparison of the breaking strength of normal versus sclerosed vessels under various pressures.

SESSION VII.—*Pneumothorax. Hydro-pneumothorax. Pneumoperitonæum.* A dog was etherized and tracheotomized, the anæsthesia being maintained till death. Arrangements were made to record the carotid pressure, the respirations, both pleural pressures, and the time curve. Physical examination of the chest was made. A second cannula was inserted into the left pleural cavity and air was allowed to enter through the cannula. Blood pressure fell a little and then rose persistently for some time, probably as a result of reflex vasoconstriction usually accompanying moderate asphyxia.

On the left side the negative pleural pressure became equal to that of the atmosphere. On the right side the negative pressure was diminished 50 per cent., ranging from 20 to 40 mm. water pressure instead of 40 to 80. A persistent zero pressure on the left side did not occur, as the vigorous expansion of the chest in dyspnoea caused so sudden and large a negative pressure that the small cannula did not allow entrance of air freely enough to establish atmospheric pressure at once. The pressure fluctuated between zero and 20 mm. water.

The right, or normal side, showed much more movement than the left side, and the respiratory movements were much deeper and slower than normal. Increased resonance but no difference in the breath sounds was noted on the side of the pneumothorax. The coin test gave a sharp difference between the two sides.

The air was then withdrawn from the left cavity and approximately normal conditions of negative pressure and lung expansion were reproduced. Again the pneumothorax was produced with the same results.

A cannula was then used to force air into the peritoneal cavity. At once the carotid pressure fell, and the excursion of the diaphragm and the fluctuation of the pleural manometers became almost nil. On releasing the peritoneal air the pressures resumed their normal levels and excursions. This procedure was repeated a number of times until it was found that an urgent dyspnoea and excessively high carotid pressure of 220 to 240 mm. had developed, and death shortly followed.

This simple object lesson should help us to remember that at least half of the treatment in acute pulmonary affections must be directed to keeping as low a pressure as possible below the diaphragm.

SESSION VIII.—Unsuccessful attempts were made, under ether, to produce mitral stenosis and mitral regurgitation.

SESSION IX.—*Pneumoperitonæum. Hydroperitonæum. Flatulence.* A cat was etherized and tracheotomized, and anæsthesia maintained until death. Carotid pressure, pleural pressure, peritoneal pressure, respiratory rate, and time, were recorded. A valved cannula in the peritonæum also served for the entrance and exit of air or fluid, and for controlling the same.

After the taking of a normal record, air was forced into the peritoneal cavity until there was a pressure equal to that of 100 mm. of water. The respiratory excursions in the carotid tracing were diminished by half and for a while entirely disappeared. The mean carotid pressure at first rose slightly, but in 2 to 3 minutes it was again at its previous level. This rise was due to pressure upon the splanchnic vessels assisting the venous return to the right heart, but obstructing the arterial flow. The return to normal was due probably in part to a compensatory vasodilatation in the other systemic vessels, and partly to diminished diaphragmatic excursion, and hence a lessened passage of blood from the right to the left heart through less

distended lung tissue. If pressure in the peritoneal cavity is moderate, the general blood pressure rises slightly, but if the pressure is excessive, respiratory embarrassment primarily, and cardiac failure secondarily, cause death after a short time.

The coin test above and below the diaphragm on both sides of the body gave definite differences which suggested the test being used as a reliable point in the differential diagnosis between pneumothorax and pneumoperitonæum, a diagnosis which occasionally presents serious clinical difficulties.

The air was released from the peritonæum, and the pressures having returned to normal, water was allowed to flow in gradually until 500 c.c. had entered and a pressure of 100 mm. water was reached, as in the distension with air. Only a slight embarrassment of respiration and scarcely any fall in blood pressure resulted. This agrees fairly with the clinical fact that a large amount of ascitic fluid can be tolerated, when an equal abdominal distension with gas causes serious cardiac difficulty.

The usual signs of fluid in the peritoneal cavity were observed. The fluid was then syphoned off and the pressures allowed to return to normal. Air was then introduced by the rectum and an amount of air equal to the amount introduced into the free peritoneal cavity caused more marked and sudden rises in blood pressures.

The coin test gave distinct bell tympany over the distended colon as it had been given over pneumoperitonæum; this test is, therefore, valueless in distinguishing flatulence from perforation. The air promptly passed the pylorus and the cardia, and escaped by the mouth, an evidence that distension of any great degree could not be established under normal gastric conditions in the cat. This fact implies a sort of safety valve arrangement to prevent serious results from gastrointestinal distension. Such a means of relief certainly is often of service in infants and young children in whom injudicious feeding has caused over distension with food or gas.

The œsophagus was then exposed and tied, to prevent escape of air, and the bowel was distended until abdominal pressure reached about 300 mm. water, when sudden cardiac failure resulted, demanding massage of the heart and artificial respiration for its relief. This seemed to be a reflex splanchnic phenomenon akin to so called solar plexus collapse. When the circulation was well established and the pressures were at their normal level again, the abdominal cavity was opened by a median incision and the contents were laid bare. This was accompanied by absolutely no fall in blood pressure. However, when the intestines were handled, and especially when the pylorus was kneaded, and the splanchnic nerves irritated by pulling, there was a severe drop in pressure which was fairly well relieved by flushing the peritoneal cavity with hot saline solution.

SESSION X.—*Heat. Cold. Hæmorrhage. Shock.* A cat was etherized and tracheotomized. A record was made of carotid pressure and time. Cold air at 12° to 20° C. (the room being at 30° C.) was blown over various parts of the animal's body without appreciable effect on respiration or blood pressure. The abdomen was opened without a change in the blood pressure. Cold air was blown in among the coils of intestines, resulting in a barely perceptible fall of pressure after several minutes.

Hot water flushed freely among the intestines caused an immediate rise in pressure, and a rapid heart rate. Cold water caused a similar, though less marked drop in pressure and heart rate. Iced water was allowed to flow from a height of one foot through an irrigation tube in the colon, and the temperature of adjacent coils of small intestine was found to drop from 35° to

30° C. with an accompanying infrequency of the heart and fall in pressure. Hot irrigation gave a great rise in carotid blood pressure, and a persistent increase in the rate and force of the heart action.

From breathing air at 30° C., the animal was suddenly supplied with air at 15° C. without an appreciable change in the respiratory rate or the blood pressure.

To illustrate the difference in effect of the loss of a small amount of blood when accompanying a severe injury to nerve trunks, and the loss of many times that amount when free from such injury, the animal under observation was bled 10 c.c. from the carotid after the bloodless removal of one hind leg. Immediately after the hæmorrhage, the blood pressure fell nearly to zero, with the accompanying disturbance of fluttering heart and shallow respiration.

A second cat, also fully narcotized and weighing within a few grammes of the same amount, suffered a loss of 50 c.c. of blood, with only a temporary drop in pressure, which as promptly returned to normal. In spite of the fact that the animals were under surgical anaesthesia, and the true production of shock was not accomplished, the crushing injury to the sciatic in the first instance, had so overstimulated or fatigued the vasomotor centre that the loss of the small amount of 10 c.c. of blood was not compensated for by a reflex vasoconstriction.

SESSION XI.—*Intracranial Pressure.* A dog was etherized and tracheotomized, and the anaesthesia maintained until the animal was killed at the end of the experiment. A small trephine opening was made in the parietal region, and a blunt, brass cannula, which fitted exactly, was forced into the hole, the dura having been opened beneath the trephine hole. This cannula was connected by a T tube with a pressure bottle and a mercury manometer.

The intracranial pressure, the carotid pressure, the respirations, the abscissa, and time curves were all recorded on the kymograph drum.

Saline solution from the pressure bottle was gradually allowed to enter the cranial cannula, showing a gradual rise to about 60 mm. of Hg., above which point the cardiac variations in the intracranial pressure were recorded synchronously with the carotid tracing. The gradual rise of intracranial pressure was accompanied pro rata by a rise in carotid pressure, the response being prompt and proportionate, the heights having become 170 and 210 mm. respectively, before any interference was noticed with the respiration. Presently the respirations became deeper and less frequent, the carotid pressure dropped suddenly to zero, and respiration ceased. The intracranial pressure was released and at once the respiration and the blood pressure returned to normal. The procedure was repeated several times with the same results.

The recent complete study and explanation of this whole series of phenomena has been so fully reported by Cushing and Eyster that a detailed explanation will not be entered into here. Suffice it to say, that any increase in general intracranial pressure above the normal is met by a corresponding vasoconstriction whereby the capillary circulation can be maintained in the brain against the unusual pressure from without. If this last persist for any great length of time, the vasoconstriction fails, the cerebral circulation ceases, and the cardiac and respiratory centers fail to act. Clinical paralyses are abundant.

The pressures intracranial and aortic being about normal, 25 per cent. alcohol was injected into the right femoral vein in small amounts, until the respirations were greatly slowed, and the pulse excursion was increased four times. The general blood pressure was but slightly below normal. This was too brief a test

and the giving of alcohol by the vein was too crude a method of administration to establish the difference between alcoholic coma and that of cerebral compression, the low pressure of advanced alcoholism being a useful clinical point which was not reproduced experimentally.

The intracranial pressure was raised to about 70 mm. and hæmorrhages were allowed to occur from the femoral artery. Each hæmorrhage was followed by an immediate fall, a quick rise to above the normal, and a gradual return to normal pressure, as promptly as is the case in an animal not the subject of unusual intracranial pressure. These rises and falls were registered equally by the carotid and the intracranial cannulas.

SESSION XII.—*Artificial Bronchitis.* A cat was etherized and tracheotomized, and anaesthesia maintained until death. A carotid tracing was made and the respirations were counted by the watch. Chlorine water was then allowed to flow slowly into the mixing bottle used for the administration of ether. This process was continued for thirty minutes, when the respirations were found to have reached about double the normal rate and a free supply of air was needed for a few moments. Within forty minutes a few fine râles were heard at the bases of the lungs, and soon all over the pulmonary areas. These râles appeared at the end of inspiration and the beginning of expiration. In forty-five minutes the respiration and the blood pressure were about normal, and the chest was full of large and small moist and mucous râles. Later, sibilant and sonorous râles were heard.

The animal was killed, and the lungs were found to be of a dusky pink color with areas of slight emphysema at the bases and apices. On section, a moderate amount of fluid mucus was pressed from the large bronchi, and, in a few instances, actual mucous casts of the bronchi could be forced out. The condition was that of a moderate oedema or of the early congestive stage of a bronchopneumonia or of a fine capillary bronchitis, although a serous and mucous exudate had formed, such as is found accompanying a simple catarrhal bronchitis.

SESSION XIII.—*Heat, Cold, and Counterirritation.* A cat was etherized and tracheotomized, and the following data recorded:

Carotid pressure, respiration, time, base line, and temperature of the body in various places. The rectal temperature was 38° C. Subpectoral temperature 37° C. (the thermometer being placed between the ribs and the pectoral muscles on the left side). An ice bag having a temperature of 6° C. was applied over the left chest for thirty minutes, at the end of which time the rectal temperature was 34° C. and the subpectoral was 22° C. The heart beats were less frequent. The ice bag was then shifted to the lower abdomen, and a thermometer was inserted among the intestines beneath the bag, through an incision at a distance. After an application lasting ten minutes the intraperitoneal temperature was 31.5° C., the rectal remaining at 34° C. The ice bag was left on for half an hour, when there occurred a marked fall in blood pressure, and a cessation of the respirations. The prompt application of heat to the surface of the body caused a resumption of normal functions. It was about twenty minutes before the temperatures of the body returned to normal.

The heart beats were rendered less frequent by the application of cold to the abdomen than when the ice bag was placed directly over the heart. This would lead one to believe that the effect of cold in slowing the heart in pericarditis, for example, is to be better obtained and usually is obtained, by cooling the circulating blood and not by the local or reflex effect upon the chest wall. The hot water bag upon the chest raised the subpectoral temperature to 40° C.,

but the rectal temperature did not rise above the normal.

A mustard poultice was put upon the left half of the abdomen, and in twenty minutes a faint pinkness of the skin appeared. No changes of bodily temperature at any point were noticed. Respiration and the force and frequency of the heart beat were increased. On removing the skin from the abdominal wall, the arteries and veins in the skin of the left side were seen to be distinctly larger than were those similarly placed upon the opposite side of the abdomen. No differences in the muscles or the peritonæum could be seen.

This picture would certainly lead one to believe in the reflex effect of counterirritation, and to discard the not unusual conclusion that the heat of a mustard poultice acts upon all the tissues, even including those within the cavity over which it may be placed.

SESSION XIV.—Renal Secretion. A dog was etherized and tracheotomized, and the anæsthesia maintained until death, and a cannula was placed in the carotid artery, in order to record the blood pressure. The right external jugular vein was exposed for purposes of infusion. The right vagus was exposed in the neck for stimulation. Cannulas were tied into both ureters and connected by means of a Y tube to a single common outlet tube, for recording the number of drops of urine discharged in a given time. The left kidney was then freed from its fatty capsule and placed in an oncometer box to record, by a tambour upon the kymograph, the variations of the kidney in volume. The five records were made upon the drum in the following order from below upward: base line, time line, drops of urine, carotid pressure, and oncometric tracing.

A normal record was taken and 100 c.c. of hot normal saline solution was put into the jugular vein. A slight temporary increase in carotid blood pressure, a slight rise in the height of the oncometric tracing, and a marked and prolonged increase in urinary secretion resulted. A few drops of amyl nitrate were passed into the bottle through which ether was administered. The blood pressure and oncometric tracings both fell, to recover simultaneously in a few minutes. Urinary secretion increased for some time. The forcing of ether for short periods caused a drop in the blood pressure with a cessation of urinary secretion.

A hot compress upon the abdomen, as well as hot saline irrigation of the peritoneal cavity, caused a rise in blood pressure and an increased secretion.

Five minims of a 1 to 1,000 solution of adrenalin chloride given by the jugular vein, gave a marked rise in carotid blood pressure and equally extreme drop in the oncometric record, with a lessening of the secretion of urine.

Cold saline irrigation of the abdominal cavity affected neither the blood pressure nor the oncometric tracing, but it almost completely inhibited the secretion of urine. Heat caused a resumption of the flow of urine very promptly.

Vagus stimulation gave its characteristic drop in blood pressure, and a low oncometric tracing with a prolonged decrease in urinary secretion.

Time was allowed after each of these procedures to observe a return to approximately normal conditions, before the succeeding test was made.

The adrenalin and amyl nitrite effects were repeated, and afterward, when the tracings had all become normal, the right renal artery, vein, and ureter were tied, to show the effect of congestion thereof as compared with the working of the opposite kidney which had been in the oncometer, and still showed the normal healthy pink color.

The series of tests just observed were intended to explain the mechanism of secretion in the kidney, so far as this is a result of varying conditions in the volume and pressure of the blood flow, without regard to chemical irritation or cellular activity.

One point still needs explanation in regard to the opposite effects upon urinary secretion produced by vagus stimulation and amyl nitrite administration, both of which procedures caused a fall in blood pressure and a fall in the oncometric tracing, while the flow of urine was increased by amyl nitrite and decreased by vagus stimulation. Amyl nitrite dilates the blood vessels of the body at large, producing a fall in blood pressure. The kidney shares in this dilatation, which offers a wide path for the blood through the renal parenchyma. The volume of blood flowing through the kidney may fairly be considered to be greater during amyl nitrite administration, although it is flowing at a low pressure. With vagus stimulation, however, the fall in pressure is a direct result of cardiac inhibition, and the accompanying prompt vasoconstriction is insufficient to bring the pressure to normal, although having a share in causing a diminished flow through the kidney; thus a low pressure and a constricted path result in a diminished secretion of urine.

SESSION XV.—Capillary Circulation. A frog was pithed and a small incision in the flank allowed the extrusion of the urinary bladder, which was then slightly distended with saline solution. The frog was so suspended on a frame that the translucent bladder, hanging between two parallel cover slip glasses, was brought in front of an arc light. The image was then focussed through a low or medium power objective, so that a magnified picture of the capillary circulation could be studied upon a screen about eight feet distant. In this magnified field, a Zeiss objective No. C being used, the white blood cells appeared to be each 10 mm. in diameter, and could, of course, be easily distinguished from the oval nucleated red cells. The nuclei of the red cells were plainly seen, as were also the nuclei of the endothelial cells which compose the wall of the capillaries. The results of pressure upon the bladder wall were seen in a slowing of the capillary flow, followed by stagnation, and immediately following this, in an abundant emigration of white cells through the capillary walls into the surrounding tissue. An observation was made, determining that a reentrance of white cells into the blood stream took place when the circulation had again been reestablished, after the cessation of pressure upon the wall of the bladder.

A few drops of a weak solution of adrenalin chloride were put into the dorsal lymph sac, when almost immediately there was a great contraction of terminal arterioles. The calibre ranged from $\frac{1}{3}$ to $\frac{1}{2}$ of its original amount. This diminution caused an almost complete cessation of the capillary flow, the larger capillaries only being wide enough to allow a sluggish transit of blood cells from an artery to a vein. The heart could be seen in the meantime to beat regularly and forcibly. The effect on general arterial and cardiac pressures of such an universal obstruction to the flow can well be imagined, or compared with the results upon human blood pressure and renal secretion seen in previous sessions. Arteries which had previously allowed four or five red cells to pass abreast in the blood stream, were so contracted as to allow of the passage of only one cell at a time. The process of dilatation and of the gradual resumption of a free capillary circulation was complete in about ten minutes.

drops of amyl nitrite placed upon the skin produced characteristic results, giving a wide capillary path and a slow stream, but its poisonous effect upon the frog's heart caused death in fifteen minutes.

SESSION XVI.—*Heart Stenosis*. A dog was etherized and tracheotomized, and the anaesthesia maintained until death occurred during the experiment. A carotid cannula was inserted, and the arterial blood pressure recorded. The chest cavity was opened, the pericardium opened, and a clamp placed about the left auriculoventricular groove and gradually tightened. The carotid pressure fell, and the pulse excursion became very slight.

The left auricle presently became distended, and the heart beat infrequently and with effort. Then the lungs became congested and deeply engorged with blood, but they remained still of a bright hue. The right side of the heart then became enormously distended, and suddenly the carotid pressure fell nearly to zero as the heart went into fibrillary contraction.

The clamp was removed and heat, massage and faradization were applied without avail. Venesection was not tried. It is reasonable to assume that it would have been successful, even in this extreme condition, for when the left auricle was cut open fully five minutes after fibrillary contraction had begun, the heart resumed a weak but rhythmical contraction and relaxation. The error had consisted in producing stenosis of a high grade too rapidly.

SESSION XVII.—*Secretion of Bile. Peristalsis*. The object of this experiment was to demonstrate the effect of massage and increased respiratory movements upon peristalsis and the flow of bile. The flow of bile from a biliary cannula was observed and the peristalsis could be seen directly through the abdominal wall. It was intended to show the effects upon biliary secretion of various cholagogues, and of variations in the portal and arterial blood-pressures. The demonstration failed because, during the massage of the liver in the early part of the experiment, too much force was used, and the capsule was ruptured. There was not time to repeat the preparation after the cause of failure of the various tests had been discovered.

SESSION XVIII.—This session was taken up with a study of the dog of Session IV with its aortic regurgitation, and an autopsy of the animal, as described, concluded the course.

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(20 EAST SIXTY-SECOND STREET.)

THE RECENT INVESTIGATIONS IN SYPHILIS AND THEIR PRACTICAL APPLICATION.*

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The development and manifestations of syphilis in the human body have been carefully watched and diligently studied for the last four hundred years. Hard, then, is the task of the man who at this late day attempts to say anything new about syphilis. But perhaps it may be possible to unsay some of the things which have been said, and which, though they were at one time new, have never at any time been strictly true.

Two recent important achievements of the investigators in the domain of syphilis not only change our basic conception of that disease and throw new light upon some manifestations occurring during its development, but also call for certain modifications in the action of combating that disease, in accordance with our new conception of the malady. These two achievements are the successful inoculation of animals with syphilis and the discovery of the disease producing agent.

Many attempts have previously been made in the same direction, but they were never successful. The present success is largely due to the scientific ensemble of the laboratories of to-day, and to a peculiarly happy combination of circumstances. The older investigators experimented with lower apes and were unable by their inoculations to produce manifestations similar to those of syphilis in human beings. This gave rise to the conviction that animals are not susceptible to syphilis.

When comparative studies of hæmolysins, agglutinins, and precipitins demonstrated that the blood of higher apes, the anthropoids, had much closer affinity to human blood serum than that of the lower apes, Metchnikoff conceived the happy idea of inoculating simultaneously an anthropoid chimpanzee and a lower ape (macaque). Thus he noticed for the first time the different reactions of the syphilitic virus in the higher and lower apes. In the case of the first he met with complete success, in the latter only with partial success. The anthropoid developed a hard chancre, glands, and an eruption—the macaque only an ulcer and swollen glands.

With the publication of this fact workers in other countries, who even then did not accept the possibility of inoculating apes with syphilis, bestirred themselves, and the research laboratories in Vienna (Finger and Krauss) and in Breslau (Neisser) took active part in the work. At his own expense Dr. Neisser equipped an expedition to Java, where he would have at his disposal a sufficient number and variety of apes. The results were worth the labor.

In the mean time Dr. John Siegel presented to the consideration of the Academy of Medicine in Berlin a protozoon which he called *Cytorrhycles luis*, as the specific microorganism of syphilis. Dr. Schaudinn, a zoologist, whose special studies were in the field of protozoa, was called upon to verify Siegel's findings. His eye was particularly trained to distinguish the minutest spirillum, and it happened fortunately that he was very familiar with the clinical and bacteriological aspect of dourine, a disease of horses contracted during the sexual act, and clinically analogous in many respects to syphilis. Dourine is due to a trypanosoma which Schaudinn at that time considered as a higher stage in the development of the spirochæta. On March 3, 1905, Schaudinn, with the help of Dr. Hoffman, a clinician, examined an unstained smear, obtained from an excised papule. He at once noticed the presence of a particular structure, which earlier investigators had also observed and even demonstrated, without, however, attributing to it any importance. This structure recalled to him the organism of dourine. Knowing the clinical similarity of dourine to syphilis, it was the natural thing for him to associate these structures with syphilis. He described two varieties: One, which he called *Spirochæta refringens*,

* Read at a meeting of the Hon. Soc. Med. Soc. of New York on February 6, 1907.

and which was stained readily and showed a few broad spirals; and a second variety, the *Spirochæta pallida*, which was stained with difficulty, taking a pale rose color by Giemsa's stain. He described the latter as longer and finer than the refringens, and composed of many regular narrow sharp pointed spirals.

Shortly afterward Metchnikoff reported the finding of spirochætæ in smears from inoculated apes.

Then a real race for the investigation of syphilis began, and every country in the world took part in the labors of confirming or questioning the importance of the discovery. Investigations brought out many new points. It was shown that in the lesions where the pallida was found many other forms of spirochætæ and spirilla, as *Spirochæta of balanopostitis*, of *balanitis erosiva*, of *noma spirochæta anserina*, and *Spirochæta dentium*, were seen, which have many of the characteristics ascribed by Schaudinn to the pallida; this was especially true in lesions taken from the genital and oral regions and buccal cavity, the most frequent localization of suspicious manifestations of syphilis. So it came about gradually that of the definite morphology attributed to the pallida by Schaudinn, there remained not one characteristic that could be considered diagnostic of it.

In the medical societies the same structure which some members considered pallida was regarded by others as refringens or some other form of spirillum. In many instances Schaudinn was appealed to, to settle the matter; and he either confirmed the diagnosis of pallida or rejected it, not because he had valid reasons for one or for the other opinion, but on the sole ground of acquired instinct, "ein gewisses Gefühl für das Typische."

At this time Levaditi demonstrated the pallida in tissues of syphilitic lesions and organs. By Levaditi's method the pallida could be distinctly seen in the tissues.

Again, a new impetus was given to the investigation, and in a short time the *Spirochæta pallida* was demonstrated in tissues of every syphilitic organ of congenital syphilis, and in the tissues of lesions of the early manifestations of acquired syphilis. This spirochæta, however, was soon shown to be entirely different from that of the smears. It was described as long and short, thick and thin, with pointed and with rounded or flattened spirals, with sharp, blunt, or buttonlike ends. The important feature of smear preparations, the thinness, was lost in the tissue section, owing to the coat of silver particles around the spirochæta. Some investigators question the presence of the *Spirochæta pallida* in tissue sections; they declare that other spirochætæ and spirilla may be stained and present the same appearance as *Spirochæta pallida*, and that it is impossible to distinguish between them. Others go even further, and deny in toto the presence of *Spirochæta pallida* in the tissues, asserting that the structures seen under the microscope by means of Levaditi's silver imbibition method are in some instances detritus masses, connective tissue particles, cell contours, and more especially nerve fibrils which stain exactly like so called *Spirochæta pallida*, and which are especially well distributed in the organs where spirochætæ were described in large numbers; and that in other instances particles of silver deposited in the

tissue spaces may be taken for spirochætæ. Both sides present arguments which cannot be refuted until we are able to cultivate the *Spirochæta pallida*, which up to the present time nobody has succeeded in doing, since neither the increase in the number of spirochætæ in tissues kept in the thermostat at 37° C. nor the presence of spirochæta in inoculated cornea can be regarded as cultures.

Thus we can at present do little more than state preliminary facts. We are by no means yet in a position to put forward conclusions as to the importance of the rôle which spirochæta pallida plays in the ætiology of syphilis. The facts are:

1. That a structure called *Spirochæta pallida* has been found on the surface and in the parenchyma of all lesions of acquired and congenital syphilis.

2. It has been found in products obtained by inoculation of syphilis into higher and lower apes and into the cornea of rabbits.

3. That it was not found in nonsyphilitic lesions.

This last point requires further explanation. Many writers report the finding of structures which they classify as *Spirochæta pallida* in lesions, viz., carcinoma ventriculi, carcinoma ulcerosum penis, frambæsia, condyloma acuminatum, paraurethritis infectiosa; but their diagnosis is not accepted by others who do not consider these structures *Spirochæta pallida*.

Although a good many syphilographers accept the spirochætæ as the cause of syphilis, experience teaches that in this particular field, that of the discovery of the syphilitic bacillus, the discoverer lives longer than his discovery, and it is safer to wait for more substantial proofs than those now at hand.

We shall be entitled to say that *Spirochæta pallida* is the cause of syphilis only when we prove that it produces syphilis, and not by simply showing that it is present in syphilitic lesions. The only practical application we derive from our present knowledge of spirochætæ is, that we may consider its presence in smears and tissue sections of lesions doubtful as to their syphilitic or nonsyphilitic character, as a warning to be doubly careful in expressing an opinion as to the character of the lesions, even when clinical ocular symptoms fail to appear after a long time of observation. (Finger's case at the Berne Congress.) In such cases only inoculation can decide the character of the lesions, and without this proof such a patient cannot be regarded as free from syphilis and must be accordingly instructed even if not treated.

The main advance was derived from the experiments in inoculation of syphilis into animals. Here the advance is unquestioned. We may say that in the last two years more was learned of the real nature of syphilis than in the fifty years preceding, and all this is due to the labors of several men and their willing and enthusiastic assistants. Here we may not only state scientific facts, but draw important conclusions and be guided by these conclusions in our medical art.

What are the facts? That both the higher apes, especially those of African origin, the so called anthropoids and the lower apes in various degrees, are susceptible to inoculation of the syphilitic virus. The inoculation in lower apes is performed by depositing the virus in deep cutaneous pockets. In higher apes a scratch is sufficient to obtain positive

results. In the anthropoids the inoculated system reacts in the same manner as the human organism, giving the same characteristic manifestations of syphilis with periods of incubation, hard chancre, swollen glands, and skin eruption. Even symptoms of involvement of the nervous system, paresis, and paralysis of the posterior extremities were observed in them.

In lower apes, after a period of incubation, inoculation produces a local lesion, usually with adenitis, but without any skin manifestations. But the virus enters the general circulation and the internal organs. Of such apes, the spleen, glands, testicles, and bone marrow, contain an active syphilitic virus, as was proved by inoculating a macaque with extracts of these organs, and a higher ape, where the same manifestations occurred as when the apes were inoculated with human syphilitic virus.

That the lesions produced in apes on the skin and internal organs are of a syphilitic nature was proved by the following:

1. That the primary lesion developed after an incubation period, as in human syphilis (average twenty-four in man, twenty-nine in the chimpanzee, sometimes fifty to sixty days).

2. That it has the same histological structure as a human chancre.

3. That from introduction of the virus of an inoculated lower ape into a higher ape the same symptoms will occur in the higher ape as from the inoculation of the ape with human syphilitic virus.

4. That it produces in an ape inoculated with simian syphilis immunity against a second inoculation with human syphilis.

5. That a primary lesion is produced as well by inoculation with material from any lesion of human syphilis, acquired or hereditary (be it primary, secondary, or tertiary; blood, sperma, primary, or secondary glands; organs, blood, nasal secretion), as by inoculation with primary or secondary lesions or extracts of organs (as spleen, testis, glands, and bone marrow) of apes.

That confirmation which would convince even a sceptic, namely, a successful inoculation from an anthropoid into a human being, is still lacking for obvious humanitarian reasons. The two occurrences in Metchnikoff's laboratory, one of a voluntary inoculation of a woman seventy-nine years of age with virus from a macaque, the other an accidental inoculation of a caretaker of syphilitic lower apes, can only be regarded as partial confirmation, as in both no secondaries appeared, although in the lesion of the caretaker the spirochæta was found.

The successful inoculations were always performed cutaneously and were always followed by chancres. (It is necessary to have an open blood-vessel, a lesion reaching deeper than the epithelium in order to obtain a successful inoculation. Even the mucous membrane of the tonsils, nose, and conjunctiva are not inoculable unless injured.) When the syphilitic virus was introduced either subcutaneously, intravenously (Neisser, Finger), or intraperitoneally, neither chancre nor immunity were obtained. Why it is so, we do not know. Is the abundance of phagocytic elements in the subcutaneous and peritoneal tissues and their absence in the epidermis the cause of the failure or success of inoculations?

When the investigators gained the knowledge of these fundamental facts they tried to solve many doubtful points in human syphilis, such as superinfection, reinfection, and immunity, by means of simian inoculations.

If an ape was inoculated a second time before the appearance of the chancre of the first inoculation, or even sometimes after its appearance, after a certain incubation period, a second chancre would appear at the point of reinoculation. No result could be obtained from reinoculation during the development of the secondary eruption. Reinoculation was tried in every period of syphilis, and successfully achieved in every state, except during the height of the first early eruption. The system reacted upon such second inoculation in a peculiar manner: When reinoculated in the primary period, the result would be a chancre or papule; when in the later period during the presence of tubercles or gummata, the effect of reinoculation would be a tubercle or gumma. That is, the system responded to reinoculation with external virus in the same manner as it reacted upon its own syphilitic virus.

That the reaction was due solely to the newly introduced virus, and not to any other cause, as secondary infection or trauma, was proved by the failure of producing such an effect by the introduction into the syphilitic organism of nonsyphilitic material. These results were obtained from experiments carried on in human beings and in apes infected with syphilis. They demonstrated that in apes and in human beings a reinfection is possible, not only during the first incubation, but through the whole development of the disease, the system reproducing lesions of that state in which the patient was during the time of reinfection.

The fact that a syphilitic organism in the active stage of the disease could react even in a slight degree upon the introduction of new syphilitic virus was in gross contradiction to our accepted conception of immunity in syphilis.

We understood immunity as a condition in which, with the appearance of the primary lesion, the affected organism while reacting upon its own virus was absolutely immune to new infection, at least, through the whole active course of the disease. Experiments proved that reinoculation is possible, not only after the appearance of the primary lesion, but during the whole period of the disease, the reaction manifesting itself with more or less intensity. This shows that the system is not imbued with a complete immunity, but with a partial immunity which varies in intensity during the development of the disease, increasing gradually with the appearance of the primary lesion, reaching its maximum during the early manifestations upon the skin, and diminishing by degrees until both virus and immunity entirely disappear. According to the degree of the immunity the reaction of the system is more or less pronounced, and with the total disappearance of the immunity and virus a complete reaction with a hard chancre, glands, and eruption is possible. Consequently, clinical observations where several ulcers appear in succession after the development of the first lesion must not be considered as due solely to mixed infection, but may be regarded as the product of superinfection by the same virus which caused the first lesion, their milder clinical course and aspect

being due to the milder reaction of the partially immunized system.

Moreover, the very important question of reinfection is also to be viewed differently. We regarded reinfection as proof that the system was totally free from the virus, but to acknowledge such reinfection we required hard chancre, swollen glands, and skin manifestations to follow a second infection; we considered the manifestations of such cases, where only a chancre or a chancre with swollen glands was observed, not as a reaction of the system to the freshly introduced virus, but as manifestations of the old virus. At present we have to accept two forms of reinfection, a partial one, corresponding with the partial immunity of the system, and an absolute reinfection, in cases where the system was entirely free from virus and immunity. Such absolute, complete reinfection may happen, but they are seen very rarely, because the fortunate syphilitics who reach such a stage of freedom from the previous virus are of an age where they have but very few opportunities to expose themselves to new infection. We would oftener see such complete reinfection of patients if lues was contracted in the very early part of their lives.

The tertiary manifestations of syphilis were not regarded as infectious. Gummata were considered as a product of the toxins of the syphilis producing agent in association with pus producing microorganisms. Although a large number of clinical observations seemingly spoke for the infectiousness of gummata, no absolute proof could be given that the virus was conveyed by the gumma, and other sources of infection were suspected.

Since anthropoids, when inoculated with the products of a gumma, developed the same symptoms as when inoculated with primary or secondary lesions of human syphilis, we were compelled not only to consider gummata contagious, but also to believe that their virus was the same as that of the primary lesions, showing that it did not undergo a qualitative change during its stay in the system.

The appearance of late lesions of syphilis on certain localizations of the skin can be traced to the changes produced by the syphilitic virus in the same localizations during the early manifestations of the disease on the skin. There is a strong probability that the occurrence of tertiary manifestations in the internal organs is facilitated by the involvement of those organs during the secondary period, but up to the present time there has been no clinical proof of this involvement. The successful inoculation of anthropoids with extracts of internal organs of inoculated apes and the successful inoculation with the spinal fluid of a syphilitic man during his early papular manifestations (Hoffman), go to prove that the virus is present in the internal organs during the early period, and that the foundation for the tertiary manifestations in those organs is laid by the syphilitic virus during the early stages of the disease. This fact is very important in the management of the treatment of syphilis.

Many experiments were made to test the virulence of various fluids, excretions, and secretions of syphilitic subjects. Saliva, nasal discharge in hereditary syphilitic coryza contain the living virus; milk of syphilitic women, during confinement, on the other

(Neisser and Finger), no conclusion can be drawn, since the material used for inoculations could not be regarded as pure spermatic fluid. In cases where the genitourinary organs of the father are affected with tertiary manifestations a syphilitic child may be born no matter how old the infection of the father may be. Successful inoculations were made with arterial and venous blood of syphilitic patients, no matter whether the blood was obtained before or during the appearance of the early eruption and also when obtained (shortly) after death.

The virus was found in the blood in very small quantities, and there is reason to believe that the virus is only present there in certain periods, that it does not remain in the blood, but is only carried by it to various tissues.

What have we learned from experimental inoculations about the properties of the syphilitic virus? It is very delicate. A high temperature, 50° C., and a low temperature, 10° C., destroy its virulence, it loses its virulence after six hours' exposure to normal temperature, it does not pass the porcelain filter; therefore we may hope to see it by means of the microscope. It has a predilection for certain organs during the latency of the process, especially does it favor bone marrow and testicles. This and not the glands, as formerly believed, are to be considered the main dépôt of the virus during the latency of the process. The presence of the virus in those organs during the latent period was demonstrated by successful inoculations. But recently a simpler method has been devised by which we can track the enemy to its lair. We are able to demonstrate not only the presence of the syphilitic virus, antigen, in the system and in the separate organs, but also the presence of the product which the syphilitic virus stimulates the organism to produce, that is, the antibody. In other words, we are enabled, not only to tell whether or not the subject, even in the latent period of the disease, is suffering from syphilis, but also whether or not the given subject has had syphilis. For this method extracts of organs, respectively, blood serum or blood extracts of the subject to be examined are required. For practical purposes blood sera and blood extracts only come into consideration. This method was devised in Metchnikoff's laboratory by Bordet and Gengou, and later elaborated by da Moreschi, Wassermann, Bruck, and Neisser to the diagnosis of syphilis.

The method consists in combining a hæmolytic system with a specific antigen-antibody mixture. The hæmolytic system consists of (1) red blood corpuscles from animal species A, (2) immune inactivated serum from animal species B, which has been treated with red cells from animal A. When the blood cells of animal A are brought in contact with the inactivated immune serum no hæmolysis takes place; but if the immune serum is reactivated by the addition of normal serum which furnishes the necessary complement, hæmolysis occurs.

If, on the other hand, a syphilitic antigen and antibodies are brought together and the complement added to them, they absorb the complement so that when blood cells A and immune serum are added hæmolysis can no longer take place. The absence of hæmolysis shows the presence of antigen with its corresponding antibody. In order to demonstrate a

syphilitic antigen we must have a positive syphilitic antibody and vice versa.

By means of this method the presence of antigen and antibody was demonstrated in suspicious cases of tabes in doubtful neoplasms, in syphilis of the brain, in oculomotor paralysis, and in mixed skin diseases where the diagnosis between psoriasis and syphilis was uncertain.

The method is still in its infancy. What its development promises for the diagnosis and prognosis of syphilis I need not enlarge upon. Suffice it to say that a physician will be able to tell his patient whether he is or has been suffering from syphilis, or whether he is cured.

It only remains to consider the bearing of inoculation experiments upon prophylaxis and treatment.

I. Commercial Pasteurization—condemned.

II True Pasteurization, say 170° F. for fifteen minutes. (Tempera- ture and time suggested by Pro- fessor Pearson of Pennsylvania)	Cost to the City	Advantages and Disadvantages	A Advantages	B Disadvantages
Health and mortality of the City				

No advantage for it, it would start a new industry, a, adulteration, b, proper pasteurization.

c Destroys typhoid and diphtheria bacilli, and very probably the tubercle bacillus and its spores.

1. Bottle infection.
2. Would make milkmen careless.
3. Loss of cream, and poor creaming.
4. No acid preservation.
5. After pasteurization milk needs greater care.

III. A substitute.

The suggestion of Metchnikoff to apply a 30 per cent. calomel ointment to suspicious abrasions as soon as possible after infection can be followed without any danger, although we cannot expect satisfactory results from the procedure, as the inoculation experiments upon which the suggestion is based are open to question.

Serotherapy has not proved a success, as it is impossible to obtain an attenuated virus. We must still rely upon mercury in the treatment of syphilis, but the inoculation experiments have served to emphasize one point in regard to its application. Since it was proved that the internal organs are involved in the early period of the disease, the active virus not only preparing the ground for the destructive tertiary manifestations in those organs, but also itself remaining active and virulent during the tertiary period, the salutary specific action of mercury must be brought to bear upon the virus intermittently for a protracted period in both stages of the disease. That is, in tertiary manifestations mercury and not potassium iodide is the remedy par excellence.

These are the results obtained in a few years from laboratory investigations in a field where the clinicians remained supreme for centuries. But we are still far from the goal, it must be striven for, and eventually it will be reached. Let us hope that with the combined efforts of the laboratory savant and clinician we will soon achieve the devoutly to be wished results for the benefit of mankind.

28 WEST FIFTH AVENUE, N. Y.

PASTEURIZATION—ITS ADVANTAGES AND DISADVANTAGES TO THE MUNICIPALITY.*

By JOSEPH ROBY, M. D.,
Rochester, N. Y.

The advantages and disadvantages of pasteurization to the municipality might be considered in a political sense, that is, whether there should be a

municipal plant for pasteurization or whether pasteurization should be made compulsory on the milk dealers. I am going to eliminate this phase of the question, simply confining myself to its advantages and disadvantages. Supposing one had only to deal with individuals or companies trying honestly to do their best. What should be the advice? It must be scientific advice, even if it opposes some of our preconceived ideas, for one is certainly inclined to dismiss the subject by saying it is all nonsense. One thing seems to be certain. The tendency to label food products correctly, and this should apply to milk. If it is pasteurized the dealer should tell how and when on each bottle or can.

In order to make the discussion clear to myself, I have put it down in the following table:

The so called commercial pasteurization where milk is heated to 155° F. for a few seconds, I think should be condemned from every point of view, for it would not surely destroy the dangerous organisms, but would, on the other hand, probably increase their subsequent growth, and therefore, although not sour, would leave a much more dangerous milk, because it takes away the index ordinary people have as to the good quality of the milk, and would allow unscrupulous dealers to put any kind of product on the market.

True pasteurization should be considered more carefully. Of course, it would not eliminate the necessity for inspection of adulterated milk. In this sentence are two words that have crept into the milk question that I rather wish could be eliminated. They are "inspection," which does well enough in this place, for milk is simply examined critically as to the adulteration, but at the farm and creamery it should be, instead of inspection, expert supervision. And the other word is "adulteration." There should be a distinction made between adulterated milk where some foreign substance has been added, and milk below standard, which may have come directly from some cow or be due to rather careless methods of handling, so that the first patron got the cream and the last the skimmed milk. It is a well known fact that Holstein cattle are liable to give milk below standard. In fact, all of the prize cattle at the St. Louis Exposition gave milk below standard. It was said at a milk conference here lately that dealers should not breed this kind of cattle, but what they are after, is the milk solids at a low price, and if they can be produced cheaper from Holsteins than Jerseys, I imagine Holsteins will be the breed used. Incidentally, Holstein milk is said to be more digestible by young infants, a point which should be carefully investigated.

Under subdivision "B" it would certainly need as many inspectors to see that pasteurization and subsequent all important handling were correctly done.

* Read at a session of the Section on Public Health, New York Academy of Medicine, March 12, 1907.

Under subdivision "A" of the second division appears to me the only excuse for pasteurization. The minimum temperature and time for surely killing every one of these organisms should be determined by extensive investigation, so that there can be no difference of opinion among bacteriologists, and the dealers should be informed of the result of this investigation. However, these infections are relatively rare. In Rochester since 1904 there have been two typhoid epidemics traceable to milk, and one each of scarlet fever and diphtheria, with a total mortality of five. Although pasteurization would have prevented three of these, yet they could have been prevented by a sufficient knowledge on the part of the farmer. Intelligent supervision can markedly cut down the minute instructions about these diseases. Children who are more liable to diphtheria and scarlet fever should keep away from the stable at milking time and from the milk at all times. Minute instructions should be given about any sore throat which might be diphtheria, and antitoxine should be used to immunize should a case develop. In order to avoid the danger of so called bacillus carriers, new employees should be carefully questioned, and if anything suspicious turns up they should have a Widal and urine examination. All milkers should wash their hands very carefully, and have special milking clothes.

It must be a choice of evils, and the danger of typhoid, scarlet fever, and diphtheria is, I think, outweighed by the dangers of pasteurization.

Under subdivision "B": Firstly, pasteurizing the milk alone would not overcome the danger of bottle infection. In Rochester this fall a milkman delivered milk in bottles at a house, where there was a case of typhoid fever. Three weeks later about twenty cases of typhoid were reported, one after the other, among this man's patrons. All the cases were severe, with four deaths. So that if pasteurization is recommended on account of these diseases, the bottles also must be pasteurized, or previously sterilized.

Secondly, one of the chief objections is that it would make the milkmen much less careful of their product, for they certainly would say to themselves that, as long as this milk is to be pasteurized, it does not make any difference how we take care of it, how old it is, or how much infected it is. And in this way very poor milk would be pasteurized, and probably put into infected cans and bottles, with the expectation that it would keep all right if the milk alone had once been pasteurized.

Thirdly, it certainly interferes in some way or other with the digestibility or nourishing power of the milk, whether it is by the destruction of the ferment or the coagulation of the albumen, or by destroying the emulsion of fat, or by all together, or by something else (destroying immune bodies), I do not know. Children fed for any length of time on pasteurized milk, if they do not have scurvy or rickets, at least look very anæmic.

Fourthly, possibly because of this indigestibility pasteurization is in no sense a cure-all for all diarrhoeal diseases of infancy. At least, if it is, I know of no figures to prove it. In the valuable and extensive investigation by Dr. Holt and Dr. Park, the very poor results reported were from "heated" (pasteurized) store milk. Of course, even poorer

results were obtained with a raw milky culture material, containing from one to twenty million bacteria per c.c. Ordinarily, there would be no choice between a raw milk containing millions of bacteria and the same milk heated to 80° C. It might be suggested that this would be a choice of evils because one cannot get a less infected milk, and it would be true were it not easily possible to get a better milk. Knox reported Shiga infections in fifteen fed on heated milk and eleven on raw milk. La Fetra and Howland eighteen on raw milk and fourteen on breast milk and four on sterilized milk. I have seen a mortality of 87.5 per cent. in institutional children fed on pasteurized milk, against a mortality of 5 per cent. in breast fed children in the same institution.

I regret that there are no exact figures on the mortality of the children fed at the Rochester stations when the milk was pasteurized, and since it has been given raw. But this summer one station reported thirty-five children fed, with one death; another sixty-five with no deaths, or a hundred with one death, a mortality of one per cent. I have watched more or less closely the effect of the certified milk and know definitely of only two deaths from all causes. I suppose about fifty children are being fed on this milk right along.

Fifthly, Bergey and others have proved that milk needs much greater care after pasteurization than when raw, and in Dr. Holt's investigation, the bacteria increased more rapidly in the pasteurized than in the raw milk.

This closes what I have to say with regard to pasteurization, but if I may be allowed to speak further, I should like to say something about a substitute, for if we condemn wholesale pasteurization, we must suggest a better method. This was described some time ago, but it has been slightly misunderstood. It is not a scheme for certified milk plants, they do not need it, but one to clean up the entire milk supply of a city. It is meant for the ordinary farmer. I will not go into details, but simply say that it is a slight change in the size of can so that it may be used as a milk pail. In fact, the size now adopted by the Boston milk dealers. It is sterilized at the milk station, shipped to the farmer with instructions not to touch it. He milks through a small opening covered by sterile cheese cloth into the can, removes the cheese cloth, replaces the metallic cover and immediately sinks the can in ice water, in a trough, which overflows at the level of the neck of the can. The can is either then taken to the creamery, mixed and standardized or better, shipped direct to the consumers. I know that most of the infection comes, first and foremost, from possibly clean, but infected strainer cloths. (May I pause to object to one other word connected with milk, that is, "clean." It gives a very strong impression. We hear a great deal about absolute cleanliness.* It is something more than that. Imagine the surgeon satisfied with a clean knife, or the bacteriologist with a clean test tube. Some one said to me not long ago, "Why, I do not see how he can have typhoid in his route. He has a nice, clean place.") Utensils and strainer cloths must be sterilized, and one cannot depend upon the farmer to do it.

The infection comes secondly from the infected vats, cans, bottles, and separators. I do not fear the air infection in a wet creamery. Supposing a

hundred organisms to the square foot fall into the milk, a tank four feet square would receive sixteen hundred organisms. Where would they be in that many gallons of milk? It is the original flaring pail, the handling at the farm, and its subsequent handling all along the line which infects milk. The Boston health report for 1905 shows 98.5 per cent. under 500,000 at the farm, 87.6 per cent. under 500,000 at the station, a difference of 10 per cent.; 54.4 per cent. on the wagons, difference, 33.2 per cent.; 28.5 per cent. at the stores, difference of 26 per cent.

This scheme prevents the original infection in the stable by the open pail and clean, but not sterile strainer, and prevents danger of typhoid from washing utensils in infected water on the farm, the immediate cooling and the delivery in the original package keeps the milk comparatively sterile. This last advantage is most important, for by the Boston figures it can be seen that the greatest infection occurs during the handling by the milk dealers.

Pasteurization to kill the tubercle organism has been left to the last because most important. We have never done anything very much with any disease but smallpox and diphtheria. I don't believe we will with tuberculosis until we have a vaccine or an antitoxine. Thanks to Pearson and Gilliland, this is within our grasp. I look forward to the time when every cow in the world is immunized against tuberculosis and our children are all drinking milk containing immune bodies, and pasteurization to prevent this dreaded disease would simply put off this happy condition.

52 SOUTH FITZTHUGH STREET.

MODIFIED BUTTERMILK IN INFANT FEEDING.*

By C. F. JUDSON, M. D., and R. O. CLOCK, M. D.,
Philadelphia.

Buttermilk has recently taken its place as a legitimate food for infants. For the past twenty years foreign pædiatrists have given this method of feeding their serious attention. J. L. Morse was one of the first American writers to call attention to the value of buttermilk, in a paper published in the *Archives of Pediatrics*. Notwithstanding, comparatively few pædiatrists have recognized the advantages pertaining to buttermilk diet in certain forms of disease. Moreover, the prejudice against this form of feeding in the minds of many mothers is deep seated and often cannot be overcome.

The chief practical difficulty is to procure a fresh buttermilk from daily churnings. Some of our dairies now furnish a reliable product. In the second place, it is not an easy matter to heat buttermilk to the boiling point without coagulation of the casein in large lumps, too large to pass through the nipple. A small quantity of wheat or barley flour is added for the purpose of preventing this clotting; it must be gradually sifted, with constant stirring.

The buttermilk fed to the twelve infants which I report by no means met all the requirements of an infant food. The dairyman churned but twice a week, so that the buttermilk when it reached the hospital was often two days old. The degree of acidity was not determined, it varied considerably from day to day. The buttermilk was kept on ice from the time of its preparation until it reached the hospital.

The average composition of whole buttermilk

(according to Salge) is proteid 2.5 to 2.7 per cent., sugar 3 to 3.5 per cent., and fat 0.5 to 1 per cent. To this some sugar is added to bring the proportion of sugar up to 7, or 8, or even 10 per cent.; besides a small quantity of wheat flour, and if desired small amounts of cream, can be incorporated in the mixture. It is then heated to the boiling point for a few moments, cooled, and kept on ice until used. This is the usual mode of preparation recommended by foreign pædiatrists.

In preparing the buttermilk for these cases two deviations were made from the usual method. The casein was diluted considerably to make the proportion present 1.5 to 2 per cent., and the sugar added only in sufficient amounts to bring the proportion present in the mixture up to 5 per cent. Moreover, the mixture was not brought to the boiling point, but heated only to from 140° to 155° F. for ten minutes, so that the lactic acid bacteria were not destroyed. Robinson's barley flour was added instead of wheat flour, one half ounce to each pint and a half, and cane sugar solution (6 and 9 per cent. strength) used to dilute the casein. The method of preparation of the weaker mixture was as follows: Ingredients used were one pint of buttermilk, eight ounces of a six or nine per cent. solution of cane sugar, one half ounce of Robinson's patent barley.

1. Make a paste of the flour and a small quantity of the sugar solution.

2. Add buttermilk and the remainder of the sugar solution to this paste and mix thoroughly.

3. Heat the mixture to 155° F. for ten to fifteen minutes, stirring constantly.

4. Remove from stove, cool, and place on ice.

In feeding the infants on buttermilk the *principle followed* was to begin with a moderately strong mixture, which we called "two thirds" mixture, containing 1.0 to 1.5 per cent. fat, 4 to 5 per cent. sugar, and 1.5 to 1.75 per cent. proteid. After tolerance for this mixture had been established, as evidenced by normal temperature and good condition of the stools, the fat percentage was increased. If the infant's digestion still remained good, the formula was increased to "three fourths" mixture with a simultaneous increase in the fat percentage. The three fourths mixture contained 1.5 to 2.5 per cent. fat, 5 per cent. sugar, and 1.75 to 2.00 per cent. proteid.

The twelve infants treated were severe cases of malnutrition, marasmus, enteritis, or enterocolitis. The prostration and other toxic symptoms quickly disappeared in most cases after buttermilk diet was instituted. Eight infants gained in weight (in one the gain was only temporary), while four infants could not tolerate the diet. The gain in weight was in most cases irregular, but steadily upward, and averaged one half ounce daily. Some gained more rapidly for shorter periods.

The longest period of continuous feeding on buttermilk was six weeks. During this time no evidences of rachitis developed; on the contrary, the muscles became firm and the skin lost its dryness. The color improved, and the infants were quiet and happy and slept well.

The appearance of the fæces of infants on buttermilk diet was at first brown and pasty, and very offensive; later the evacuations became yellowish brown, and finally yellow. The stools contained as a rule mucus, showing the catarrhal inflammation

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of the intestines. After buttermilk diet was instituted, the improvement in the intestinal condition was shown by the disappearance of mucus from the stools and the absence of offensive odor.

From our limited experience with buttermilk feeding, its advantages appear to us to consist principally in that we can give a sufficient amount of proteid to these cases of wasting (1.5 to 2.5 per cent.), and that the casein lactate in the mixture is in a finely subdivided form which admits of easy digestion. The low fat content of the mixture (1 to 2 per cent.) does not seem a disadvantage, since many of these infants show an intolerance for fat. Moreover, buttermilk feeding for our infants was used as a temporary feeding, to bridge the way, after satisfactory gains had been made, to corresponding milk formulæ. The proportions of sugar in our formulæ (4 to 5 per cent.) are distinctly low, and more decided gains in weight might have been obtained with higher sugar content (7 to 8 per cent.). In any case the results obtained were sufficiently favorable to encourage us to pursue this mode of feeding further.

The degree of heat applied to the buttermilk did not exceed 155° F. (140° to 155° F.), so that the lactic acid bacilli were not destroyed. The bacterial flora in the fæces were probably modified, but unfortunately we could not carry out this line of investigation.

Comparing the results of buttermilk feeding in the class of cases mentioned with the results obtained from milk formulæ, and whey and cream mixtures, the results are certainly equally good. This must be ascribed chiefly to the large amount of soluble proteid furnished in finely subdivided form. The proportion of soluble albumin to casein is also somewhat greater than in plain milk.

From our limited observation we consider that buttermilk feeding should not as a rule be continued as the exclusive food for an infant, even with the addition of cream, for a longer period than eight to twelve weeks; but the attempt should be made as soon as the child's condition permits to change over to a milk mixture of corresponding strength.

CASE I.—E. D., premature infant, seven months old twin, was fed for ten days on a weak buttermilk mixture without any gain in weight.

CASE II.—E. A., three months old, enterocolitis. When the buttermilk was started the stools were five to seven a day, green, and contained mucus and curd. The temperature became normal at the end of one week. After four weeks of buttermilk diet the child had gained one pound. Enough cream was added to the buttermilk to make the proportion of fat 2 per cent.

CASE III.—H. G., five weeks old, severe catarrhal enteritis with malnutrition. Infant was fed for five days on a weak buttermilk mixture. The stools changed from green to brown and became less frequent, the blood and mucus disappeared.

CASE IV.—G. H., four months old, enterocolitis. The signs pointed to follicular ulceration. Marked improvement resulted from a buttermilk diet; after a preliminary loss of six ounces, the child gained ten ounces in one week; but subsequently succumbed to an attack of acute gastric indigestion.

CASE V.—E. K., eight months old, weight on admission, nine pounds six ounces, had been sick for ten weeks with chronic bronchitis and marasmus. The child had chronic intestinal indigestion with occasional attacks of enteritis. This child was fed for the first

week on broths and cream, with dextrinized barley gruel, and gained thirteen ounces on this diet. It was then given a weak buttermilk mixture, and gained eight ounces in two weeks. After an intermission of a week on account of acute indigestion, the buttermilk diet was resumed with a gain of ten ounces in the last two weeks. It was then transferred to a milk formula and sent out of the hospital. Weight, eleven pounds four ounces.

CASE VI.—S. S., three months old, marasmus, weight, seven pounds one ounce, was in the hospital six days only and fed for three days on a weak buttermilk mixture. This case was complicated by severe gastritis, and did badly.

CASE VII.—J. V., four months old, marasmus, chronic intestinal indigestion, weight, seven pounds five ounces on admission. On a milk formula the child lost nine ounces in one week. He was then fed for six weeks with a buttermilk mixture, containing small amounts of cream, which was gradually made stronger. He gained thirty-seven ounces in six weeks, or over six ounces a week, and was sent out of the hospital to be fed on milk according to formula.

CASE VIII.—W. M., seven weeks old, weight, nine pounds twelve ounces on admission, suffered from intestinal indigestion and malnutrition. Before admission he had lost fourteen ounces in weight in three days from acute enteritis. He was fed on milk formula for two weeks and lost fourteen ounces. Then a buttermilk mixture was given with the addition of a small amount of cream, and in six weeks fifteen ounces were gained. During this time the infant passed through a severe attack of bronchitis.

CASE IX.—W. B., twelve weeks old, malnutrition, weight, nine pounds five ounces on admission. After being fed on various milk formulæ for a month and losing weight with loose greenish stools, curds, etc., the child gained seven ounces on a buttermilk mixture in twelve days and the stools became normal.

CASE X.—F. C., one year old, enteritis, bronchitis, and purpura. Weight eighteen pounds. This child gained fourteen and one half ounces in four days of buttermilk feeding.

CASE XI.—V. H., four months old, enterocolitis, was fed on buttermilk for three days without improvement.

CASE XII.—D. M. C., two months old, severe gastritis and enteritis, weight, seven pounds eight ounces. This infant vomited buttermilk each time it was given, but gained on a whey, cream, and dextrinized gruel mixture.

1539 PINE STREET.

TUBERCULOUS PERITONITIS. WITH REPORT OF CASES.*

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My incentive for the following brief survey of the subject of tuberculous peritonitis was derived from the observation of three cases of this disease recently treated in the gynecological department of the Maryland General Hospital, and I am indebted to Professor Moseley for the privilege of reporting these cases. I am of course aware that such a small number of cases can scarcely be of very great statistical value, but my purpose in presenting them is rather as being merely illustrative of certain interesting characteristics of this peculiar disease. Much has been said and written concerning tuberculous peritonitis during the past fifteen years or so, and much has been added to our knowledge of the disease, but there are still many points

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on which medical opinion has failed to focus itself very clearly, and hence we are still in the dark with reference to certain important characteristics of the infection.

Every abdominal surgeon encounters cases of tuberculous peritonitis with greater or less frequency, for it is by no means uncommon, although statistics as to its frequency are rather difficult to obtain, at least from the clinical point of view. This can be readily understood when we consider the difficulty and uncertainty attending its diagnosis and the fact that it is so often secondary to a tuberculous process elsewhere in the body. Statistics from autopsy findings are more easily obtained, although not perhaps of the same value. In 15,222 autopsies collected by Williams from the autopsy reports of Schmalmack, Munstermann, Phillips, Borschke, and himself, tuberculous peritonitis was found in 444, or 2.9 per cent. Hence, we are probably justified in our statement that tuberculous peritonitis is not an uncommon disease.

As to the ætiology of this condition, the active agent of course is the bacillus tuberculosis. The predisposing causes do not seem to be of very great importance in the production of the disease. It is quite common in children, rather rare in old people, and most frequent between the ages of twenty and forty. It has been generally considered to be more frequent in females than in males, the collective cases of Osler, Bouilard, Häne, and Maurange giving the proportion as about two females to one male. The Mayos, in a recent article on the subject, state that at operation they find four times as many females as males suffering with this disease. Autopsy findings, on the other hand, seem to show a preponderance of males, the difference being probably explainable by the fact that women are so much more frequently subjected to laparotomy than are men, while autopsy material, on the other hand, is made up largely of male subjects. The disease is said to be somewhat more frequent among negroes than among Caucasians, which is in accord with the well known susceptibility of the negro to tuberculosis in all its forms. As local predisposing causes we may consider all conditions lessening the resistance of the peritonæum to infection. In this connection, Williams lays stress upon the frequent association of cirrhosis of the liver with tuberculous peritonitis. Seifert found this association in 14 or 15 per cent. of all cases, and Kelynack in 10 per cent. Williams thinks that the interference with the portal circulation produced by the cirrhosis may increase the tendency to tuberculous invasion, although this would not seem to coincide with the well known fact that pulmonary tuberculosis is rather infrequent in congestive conditions of the lungs, as for instance, in chronic valvular disease of the heart. The same author suggests the importance of general arteriosclerosis in the production of the disease, but this does not seem to have been observed by others.

A discussion of the ætiology of this disease would not be complete without some mention of the mode of entry of the organism into the peritoneal cavity. This is a question which even now is in a more or less unsettled condition, and widely different opinions are held by different authors. At the outset we may state that it is now the generally accepted

view that in by far the large majority of cases tuberculous peritonitis is secondary to a tuberculous process elsewhere in the body. Borschke, for example, in 226 autopsies found the process in the peritonæum alone in only two cases, and Munstermann found only one primary case in forty-six of tuberculous peritonitis. As might be expected, the lungs are most often the primary seat of the disease, the bacilli reaching the peritonæum through the blood stream, or, occasionally, by direct extension. The intestinal tract is by some considered an important avenue of infection, especially in children, while others again deny its importance as a portal of entry in this disease. Borschke, in his 226 autopsies, failed to find a single case of primary intestinal tuberculosis. The infection may also originate in the pleura, in which case it probably often passes downward through the lymphatics of the diaphragm, as seems to have been demonstrated by the occurrence of cases involving especially the under surface of the diaphragm and the upper surface of the liver. (Spillman) The bronchial and mesenteric lymph glands and the osseous and articular systems are also mentioned as possible primary seats of the disease.

The most fruitful source of discussion in this connection, however, has been as to the importance of the female genital organs, especially the Fallopian tubes, in the production of the disease. Osler states that 30 to 40 per cent. of all cases of tuberculous peritonitis show tubal involvement. Williams, however, insists that infection through the tubes is not one of the important causes of the disease, and that when tubal and peritoneal involvement coexist the tubal disease is secondary to the peritoneal. The Mayos, on the other hand, have taken a decided stand in favor of the importance of the rôle played by the tubes in infecting and reinfecting the peritoneal cavity. Edebohl, of eight cases of tuberculous peritonitis which he reports, considers five of tubal origin, while the possibility of infection through the female genitalia seems to be further exemplified by Vierordt's case, in which tuberculous peritonitis was definitely preceded by a purulent vaginal discharge in which tubercle bacilli were demonstrated.

Several anatomical types of this disease are described, and the anatomical division to a considerable extent corresponds with the various clinical types generally recognized. Although receiving different names from different authors, three chief types are usually spoken of: The serous or ascitic, the fibrinoplastic, and the fibrous or adhesive. As Osler has pointed out, however, the various forms of the disease probably in reality represent only different stages of the same process, the varying anatomical picture depending upon differences in the site of the process, its duration, the resistance of the individual, and other such factors. In other words, a process beginning for instance with the formation of miliary tubercles on the peritoneal surface, could easily, in the same manner as a pulmonary tuberculous process, pass through stages of confluence of tubercles, caseation, ulceration, and possibly marked fibroid formation.

The clinical history of this disease presents no very characteristic picture. The onset may occasionally be very acute, so acute as to lead to the

Diagnosis of such conditions as acute perforative appendicitis or strangulated hernia, as in the two cases reported by Spillman and Thoman. As a general rule, however, the disease has a very slow and in most cases an insidious beginning. The patient complains, perhaps, of minor disturbances of the stomach or bowels, with usually more or less tenderness and pain of an indefinite character over the abdomen, although occasionally the pain may be quite severe and colicky in nature. There may be diarrhoea or constipation, or an alternation of these two conditions. An evening rise of temperature is often noted, although Osler, who has made a careful study of this phase of the subject, states that the temperature is often, and rather characteristically, subnormal for weeks and even months at a time, varying from 95° F. to 97.5° F., although in the evening it may rise to normal or even a little above normal. The same author speaks of an occasional peculiar tendency to pigmentation of the skin surfaces, especially of the face, observed even in some cases where the suprarenal bodies are not involved in the disease. Sooner or later there is usually more or less abdominal enlargement, most marked of course in the ascitic form of the disease. Pronounced ascites, however, is not usual, Biat observing it in only thirteen of sixty-eight cases. Even where there is no ascites, however, there is apt to be some abdominal enlargement as a result of subperitoneal thickening and infiltration, together with the marked grade of tympanites so often noted. A sign which Edebohl considers almost pathognomonic is "the presence of plaque-like localized thickenings of the deeper portion of the abdominal parities, perceptible to gentle touch, and imparting to the palpating finger the sensation as if the peritoneal surfaces of the abdominal wall were occupied by urticaria wheals or pomphi of various sizes."

Very frequently as a result of the involvement of various viscera or the sacculaton of the peritoneal exudate, tumorlike masses are formed which are of the greatest significance from a diagnostic point of view. The importance of this tumor formation may be appreciated from the statement of Osler that of ninety-six cases of tuberculous peritonitis in which laparotomy was done, thirty-six had been diagnosed as tumor, ovarian or otherwise. The tumor masses occurring in this disease are divided by Osler into four groups: (1) Omental tumors; (2) sacculated exudates; (3) retracted or thickened intestinal coils; (4) enlarged mesenteric glands. Of these the most common are those formed by sacculated exudates, these encysted collections being often very misleading in their resemblance to ovarian cysts, as in the case so elaborately reported by Dr. William T. Howard of Baltimore, in 1885.

As is well known, the now generally accepted treatment for at least a large proportion of cases of tuberculous peritonitis is operative. The failure of many surgeons to resort to operation in these cases has been probably chiefly due to the fact that instances of spontaneous cure of this disease not only occur, but are quite numerous. Such cases are reported by Bouillard, Comby, Vierordt, Borchgrevink, Oehler, Marfan, Anderson, and many others. To show how strong is the tendency to recovery in some cases, Louis cites the case of a man, twenty-

four years of age, who was suffering with an advanced form of this disease, with emaciation, pleurisy, and marked ascites. In this condition he fell a victim to Asiatic cholera, and although almost purged to death, he made an excellent recovery, not only from the cholera, but also from the tuberculous peritonitis. In considering the reports of cases of spontaneous cure of this disease, however, we must bear in mind that the diagnosis in these cases was made on clinical evidence alone, and hence in some cases at least is open to doubt.

The first laparotomy for tuberculous peritonitis was performed in 1862 by Sir Spencer Wells, who, operating on a case of supposed ovarian cyst, was surprised to find a condition of tuberculous peritonitis, and even more surprised, no doubt, to find that his patient made a complete and permanent recovery. Since that time many cases of this disease have undergone operation, a large number unwittingly through mistaken diagnosis, but many after correct appreciation of the condition. There is probably nothing in the whole realm of surgery more striking than the cures which so often follow laparotomy in tuberculous peritonitis. Aldibert, for instance, reports 82 per cent. of cures, Ochsner 84 per cent., Parker Syme 30 per cent., Roersch 75 per cent., Maurange 80 per cent., and Galvani 86 per cent. All authors are agreed that the most favorable cases for operation are those of the ascitic type, which, fortunately constitute the largest group, according to Wunderlich, 68 per cent. of all cases. The operative procedure usually recommended is simple laparotomy with evacuation of the ascitic fluid. To this simple procedure most operators add thorough irrigation with normal salt solution, while a few employ instead weak antiseptic solutions of boric acid, carbolic acid, thymol, bichloride of mercury, and other similar agents, but it is probable that no increased benefit is derived from any of these additional measures, while there is some danger attending their use. The same may be said of the use of camphor naphthol, as recommended by Rendu, or iodoform, which is employed by some operators either in dry powder or in emulsion. The question of drainage or nondrainage seems to have been settled in the negative, as the use of a drain prolongs convalescence very materially and often leaves behind a permanent fistulous tract.

The importance of another phase of this subject has been recently emphasized by the Mayos in a paper published last year, in which they assert that the source of infection, and, further, of constant reinfection of the peritonæum is in females usually through the Fallopian tubes. In accordance with this view they have adopted the routine of removing the tubes and ovaries in all cases in which this is practicable, and their results seem to warrant this procedure. They state that before resorting to this measure, a considerable percentage of cases did not maintain their improvement after operation, and in the course of years many would return for further operation, some as often as four or five times. This, they believe, was due to the fact that the Fallopian tubes served as channels of constant reinfection of the peritoneal cavity after apparent cure. On the other hand, of twenty-six radical tuboovarian operations done for the cure of this condition, twenty-five recovered, and in none has

any further operation been necessary. Of these twenty-six cases, seven had previously been operated on by simple laparotomy from one to four times, so that the comparative results of these cases are certainly striking and suggestive.

Probably the most puzzling question in connection with this peculiar disease is as to the reason for the cure that so often follows even simple laparotomy. Many views have been advanced, some ingenious and some fanciful, but none fulfilling all requirements. Among the theories advanced to explain the cures in these cases may be mentioned (Abbe): (1) The traumatic effect of the laparotomy; (2) the contact of the air with the peritonæum; (3) the formation of adhesions as a protective to the absorbing surface; (4) the action of radiated sunlight; (5) the access into the peritoneal cavity of bacilli of putrefaction antagonistic to the *bacillus tuberculosis*; (6) simple diminution of pressure of the ascitic fluid, favoring recuperation of heart and lung action; (7) the psychic influence of the operation; (8) the reflex action of handling the peritonæum; (9) the inflammatory reaction produced in the peritonæum, with encapsulation and absorption of the bacilli.

Basing their opinion on their view that the tubes serve as the main sources of infection and reinfection, as stated before, the Mayos believe that the recovery which follows simple laparotomy is due to the fact that withdrawal of the fluid allows the fimbriated end of the tube to come into contact with and adhere to surrounding structures instead of floating in the fluid as before the operation. In this way the avenue of further entrance of organism is shut off, and cure often results. If this were so, however, simple withdrawal of the fluid by aspiration or tapping should suffice to bring about a cure, and this we know is not the case. So that the question may still be considered an open one, as none of the theories as yet advanced seem to fulfill all requirements.

The following cases, as I stated at the outset, while perhaps presenting no very extraordinary features, serve to illustrate some of the characteristics of the disease we are considering:

CASE I.—The patient was a young white woman, aged twenty-one, unmarried, who entered the hospital complaining especially of almost constant dull aching pains in the lower abdomen. This pain she had observed more or less for a number of months, but it had become much worse during the preceding four or five weeks, and was more marked on the right side. The bowels were inclined to constipation, and there were frequent attacks of nausea, although appetite remained unimpaired. Menstrual flow was regular in occurrence, fairly free in amount, and accompanied by some pain. The temperature was normal, without any evening rise. The family history was good, presenting no tuberculous taint. The general appearance was one of exceptionally good health, patient being well nourished, inclined to stoutness, and possessing a healthy ruddy complexion. Examination of heart, lungs and kidneys was negative. The vaginal examination revealed a marked cervicocorporeal ante flexion, and a small indefinite mass at right horn of uterus, otherwise being negative. The patient's pain and discomfort persisting, exploratory laparotomy was decided upon and performed. The operation revealed marked thickening of the peritonæum, adhesions of the omentum to the pelvic viscera, including the bladder, and innumerable pearly gray

tubercles studding the entire parietal and visceral peritonæum. A moderate amount of ascitic fluid was present. The tubes and ovaries were not markedly enlarged or thickened, the only apparent involvement of the amnion being a deposit of inflammatory lymph and a miliary tuberculosis of the serous coat, as in the peritonæum generally. The abdominal cavity was thoroughly irrigated with normal salt solution and closed without drainage. The patient made an uninterrupted, complete, and apparently permanent recovery, as she has reported to the hospital for examination a number of times since her discharge, and states that she is in perfect health.

This case, I think, may be considered fairly typical of the serous form of the disease, and illustrates especially the peculiar latency of its symptoms so often noted. In this patient there was, as far as we were able to learn, no tuberculous family taint, no discoverable tuberculous lesion in the lungs or other organs, and in every way the patient seemed to be unusually healthy and robust. The result of the case, moreover, serves to illustrate the completeness of the cure so often effected by even a simple laparotomy.

CASE II.—The patient was a woman, age twenty-five colored, married, who was admitted to the hospital on May 31, 1906, as a case of ovarian cyst. A few days before entrance she had been delivered of a child, her third, and after delivery, as she said, her abdomen remained almost as prominent as it had been before. Before she became pregnant she had enjoyed good health, and there had been no abdominal enlargement. She began to suffer with pain and tenderness over practically the entire abdomen in March, the seventh month of her pregnancy. Other symptoms complained of were headache, tendency to diarrhoea, and occasional attacks of vomiting. Some time before her last pregnancy she had suffered with pain on micturition for a period of several months, but this no longer annoyed her. I mention this fact because of the importance which some authors, notably Kelly, attach to dysuria as a symptom of tuberculous peritonitis. The patient's temperature after entrance to the hospital presented a regular evening rise, varying from 98° F. in the morning to 101° F. in the evening. No subnormal temperature was noted. Examination of the lungs disclosed an area of consolidation at right apex. Vaginal examination revealed a large subinvolved uterus, and the large mass above the uterus which caused the abdominal prominence and which evidently contained fluid. The abdomen was enlarged to about the size of a full term pregnancy, percussion eliciting flatness over the most prominent portions of the abdomen and modified resonance in the flanks. So that it was at first thought the tumor was a large ovarian cyst, with possibly some inflammatory complication, and as a matter of fact it was not until the patient was on the operating table that a presumptive diagnosis of tuberculous peritonitis was made, largely from the fact that the relaxing effect of the anæsthetic made palpable an indefinite deep seated mass extending across the upper abdomen, which later proved to be the thickened infiltrated omentum.

At the operation the peritonæum was found to be at least 1 cm. thick, with considerable infiltration of the underlying layers of the abdominal wall. On opening into the peritoneal cavity a considerable amount of viscid yellow fluid escaped from a large sac-like cavity formed by the adherent intestinal coils just behind the abdominal wall. The peritonæum was universally studded with various sized whitish and grayish tubercles. The omentum was enormously thickened and infiltrated, forming a solid mass stretching across the upper portion of the abdominal cavity. The uterus

was enlarged and retroverted, both tubes greatly thickened, broad ligaments infiltrated, vascular, and friable, and there was general congestion of the pelvic viscera. Double salpingo-oophorectomy was performed, the abdominal cavity washed out with normal salt solution and closed without drainage. The patient did not rally after the operation, but became gradually weaker, and was soon unable to take nourishment, dying about three days after the operation. The autopsy showed the condition noted at the time of the operation, and in addition a tuberculous involvement of the upper lobe of the right lung.

The especial points of interest in this case are, first, the existence of the tuberculous area in the lungs, these organs probably constituting the primary focus of the disease. This case was one of the fibrinoplastic type, and it is of interest to note that the tumorlike prominence produced by the sacculization of the peritoneal exudate led at first to the wrong diagnosis of ovarian cyst, while the other tumor mass, the omental tumor, was the means of setting us on the right track. This case, furthermore, is interesting from the standpoint of the possible influence of pregnancy on the production and subsequent course of the disease. This woman had been pregnant three times within as many years preceding her admission to the hospital, so there is a strong possibility that one of these pregnancies was influential in the production of her trouble. Moreover, the disease in all probability began before her last pregnancy, during which there was marked exaggeration of her symptoms. Kelly states that 28 per cent. of his cases are distinctly traceable to a preceding labor or miscarriage, but I have found no mention in the literature of the influence of the pregnant condition on the course of the disease, although it is but natural to suppose that it would scarcely be a benign one. This case, finally, illustrates the unfavorable prognosis of cases of the fibrinoplastic type, especially where there is an associated lung lesion.

CASE III.—This patient was a white woman, a widow, aged thirty-five, who entered the hospital on August 9, 1906, complaining of severe pain in the pelvic region, radiating to the back. She had suffered in this way for eight or nine months. She had had two children and one miscarriage. The menstrual flow, which was normally rather scanty, had for the past few months been almost absent. The patient complained also of loss of appetite and frequent headaches. The temperature record showed a regular evening rise, varying from 99° F. in the morning to about 102° F. in the evening. The family history presented nothing of significance. There was some cough, but physical examination of the lungs was negative, while the sputum was not examined bacteriologically at this time. Vaginal examination showed the uterus to be somewhat enlarged and apparently anteфлекed, while in either iliac fossa there was a dense matted mass apparently consisting of the adherent and prolapsed tubes and ovaries. The existence of tuberculous peritonitis was not suspected, but at operation an advanced stage of the fibrinoplastic type was found, with practically no ascites, but an extensive plastic exudate over the peritoneal surface. The intestinal coils were glued together in a very confusing manner. The uterus was enlarged and retroverted, the similarity to anteфлекion, on vaginal examination, being due to the marked infiltration and thickening of the bladder walls, producing a mass anterior to the cervix which simulated in feel the fundus of the uterus. The tubes and ovaries were buried low

in the folds of the broad ligament, and on account of their low position and the vascularity and friability of the tissues, no attempt was made to remove them, the abdominal cavity being merely irrigated with normal salt solution and closed without drainage. The patient recovered from the immediate effects of the operation, but failed to gain strength. An examination of the sputum before she left the hospital showed the presence of tubercle bacilli. The subsequent course was one of steady decline, and we were informed that she succumbed to her disease a short time after leaving the hospital.

Little comment is necessary concerning this case. Like the preceding one, it is an example of the fibrinoplastic type of the disease, and like the latter, was complicated by the presence of a tuberculous lung lesion. It, moreover, illustrates again the frequent failure of operation to effect a cure in cases of this type.

To sum up the essential points in this disease around which medical opinion seems to have crystallized with any degree of certainty, we may state:

(1) The exciting cause of tuberculous peritonitis is the *Bacillus tuberculosis*.

(2) This disease occurs most frequently between the ages of twenty and forty, and, according to clinical experience at least, is more common in females than in males.

(3) The disease is, in the great majority of cases, secondary to a tuberculous focus in some other part of the body, most frequently the lungs.

(4) There seems to be no doubt that infection through the Fallopian tubes may occur, but its frequency is disputed.

(5) The onset of the disease is usually slow and insidious and its clinical course presents few definite or characteristic symptoms.

(6) The diagnosis is generally difficult, and is often not made until operation or autopsy.

(7) The prognosis in the ascitic form of the disease is comparatively good, and in the nonexudative variety bad. In any form it is of course correspondingly modified by the existence of tuberculous disease in other parts of the body.

(8) The treatment in most cases should be operative, consisting in laparotomy, with removal of the Fallopian tubes when practicable.

(9) No satisfactory explanation has as yet been offered as to the reason for the cure which so often follows operative treatment in this disease.

839 N. PATTERSON PARK AVENUE.

Therapeutical Notes.

A Salt Free Regimen for Scarlatina.—M. Pater, in a communication to the Société médicale de Paris (*La Tribune médicale*, August 18, 1906), has found that the withholding of salt from the food of scarlatinal patients exerts a remarkable influence in greatly reducing the tendency to albuminuria. Under this treatment also the patients gain weight more quickly than under a strict milk diet. He states that the achlorinated diet is without danger in scarlatina, and protects from nephritis much better than an absolute milk diet. He also asserts that it shortens the duration of the disease by abbreviating the period of convalescence.

Cataract Treated by Potassium Iodide.—Bourgeois (*Revue française de médecine et de chirurgie*, August 10, 1906) recommends potassium iodide in solutions of 2.5 per cent. as a local bath to the eye by means of an eyecup, with the lids partially opened, for a period of one or two minutes at a time. It is stated that this is useful only against cases of incipient cataract. The treatment should be instituted as soon as the patient finds his vision failing, and when ophthalmoscopic examination shows that calcification has not far advanced and is just beginning.

Effects of High Frequency Currents Upon Glycosuria.—Widal and Challamel (*La Tribune médicale*, August 18, 1906), for a methodical study of two cases of glycosuria subjected to electrical treatment, concluded that the claims of those who advocate the therapeutical application of high frequency currents in this condition cannot be maintained. They could detect no modification of the glycosuria nor of the exchanges of chlorides and of nitrogen following this treatment. The conditions of the experiment were such that the slightest action upon the glycosuria by the electric current would have been easily detected had any such action really existed.

Therapeutical Effects of Thyreoid Grafts in Man.—Hector Christian read a communication before the International Medical Congress, at Lisbon, upon Thyreoid Tissue Implantation (*Wiener klinische Rundschau*, August 12, 1906). He found that in some recent cases the transplanted pieces not only did not undergo degeneration, but actually hypertrophied, contracting adhesions with newly formed tissue, so as to take on all the characters of normal glands. One case of myxœdema, after two operations, was completely cured in the course of three months. Christian has also applied this method to the treatment of cretinism with asserted good results. The younger the patient, the better was the result. In addition to these two diseases, he applied the same method of treatment to allied conditions, such as dwarfing, inability to walk at three or four years of age, delayed dentition, defective speech, obesity, personal untidiness; and in all cases the transplantation of thyreoid tissue manifested a favorable influence. He observed children in a few months to grow ten centimetres in height, the teeth erupted rapidly, and those who could not speak a single word at the time of the operation, shortly afterward began to talk a little, and in a year's time spoke fluently. The results, on the whole, of thyreoid implantation are, therefore, quite satisfactory, not only from the immediate effects, but also in regard to the permanence of the improvement.

Nocturnal Enuresis.—The most frequent causes of this bad habit are hyperacidity of the urine and abnormally deep sleep. When the former is proved to be present, it is usually enough to give alkaline remedies in order to obtain a cure. When the wetting occurs as a consequence of too deep a sleep, the best measure to adopt is systematic awakening of the child. In order to carry out this method thoroughly in the case of inveteracy, and to force the child to get accustomed to waking up at the critical moment, the following procedure has been tried

with success: The child lies upon a mattress composed of two layers of metallic tissue separated by a dry cloth (woollen or flannel). Each of these layers is connected by a wire to the working part of a loud electric bell placed above the bed. As soon as the first drop of urine has damped the cloth, and so made contact, the bell rings furiously, and awakens the sleeper. By reflex inhibition the action of the bladder is stayed. From two to five repetitions of this experience are said to be sufficient for a radical cure (*Gazette médicale de Paris*). Before this treatment is carried out, all possible sources of reflex irritation must be carefully eliminated, such as threadworms in the rectum, stone in the bladder, an elongated, contracted, or adherent prepuce. Relief has been known to follow the removal of adenoids. A good plain, nonstimulating diet is best for the child, and no evening meals should be taken. The child should be taught to sleep on either side, not on the back, and, as suggested, awakened at certain intervals. Attention to these matters often brings about a cure, but should they fail then drug treatment may be resorted to. Belladonna is the best remedy, and children bear it well. Sir William Whitla suggests the following mixture to be prescribed for a child seven years old:

R. Potassii bromidi,	5i.
Liquoris belladonnæ,	5ss.
Syrupi simplicis,	5i.
℞. M. S. Teaspoonful before retiring.	

It is found that liquoris strychninæ hydrochloridi, combined with liquoris atropiæ sulphatis, has given excellent results.—*The Practitioner*, April, 1907.

Heat Considered as a Physiotherapeutical Agent.—Dr. J. A. Rivière (*Annales de physiothérapie*, 1906), after defining heat, points out its favorable action on the feeble, anæmic, and nervous. At the same time, in treatment by climate one cannot separate heat from light, the latter being most important. Thermic agents are the most ancient and most deserving, but their technical application is nowadays better understood and more precise. Heat is one of the most important stimulants to living cells. The hot bath is the most common means of applying heat as a therapeutical agent, and is useful in a great number of conditions; it is contraindicated in plethoric individuals and in advanced tuberculosis. The usefulness of local applications of hot water is well known. The general hot douche is a remarkable means to bring blood to the surface of the body, to accelerate the circulation, etc. Nothing is more cleansing than the moist vapor bath, since it cleans out the pores from within by the expelling force of hypersecretion. Certain skin eruptions are easily cured by these vapor baths, and it is not rare with their disappearance to find a marked increase of uric acid in the urine. Radiant heat baths—a sun bath being the best—can be made artificially by lamps. The author has long since urged the use of heat in acute illnesses; in typhoid and appendicitis especially a judicious combination of calomel, water, and heat is strikingly useful. Negative results in these cases are due to neglect of one of the factors, usually heat. Cold applications and cold baths explain the great mortality of fevers.—Through the *Archives of the Röntgen Ray*.

Treatment of Leucoma of the Cornea.—Bourgeois (*Revue française* from *Union médicale et scientifique du Nord-Est*, April 15, 1906), as a substitute for the usual treatment of patches of the cornea by massage and mercurial preparations, recommends a collyrium of lithium benzoate. Since the majority of writers attribute corneal opacities to the deposit of lime salts in the layers of the cornea, he was led to employ this salt in five per cent. solutions in sterilized water as a solvent. It produces no irritation of the cornea, and its use may be continued for a long time. The best treatment of corneal patches is to continue the usual measure, long beyond the usual period, and to commence massage as soon as it can be supported. In old cases the treatment must be a long one.

Angina of the Chest in Neurasthenics.—Le Nord-Est (*Bulletin général de thérapeutique*, March 23, 1907) says that neurasthenics suffering with attacks of angina pectoris should first be assured that there is no organic heart lesion, and then should be subjected to hydrotherapy with warm douches, cold packs, etc. With these, antispasmodics may be associated:

- R Potassium bromide,
Sodium bromide,
Ammonium bromide,
Syrup of bitter orange peel,
M. S. One or two tablespoonfuls daily.

The following is preferred to bromides:

- R Ethereal tincture of valerian,
Syrup of ether,
Water of peppermint,
M. S. In tablespoonful doses.

Or the following:

- R Ammonium valerate,
Syrup of ether,
Potassium bromide,
Peppermint water,
M. S. To be given in tablespoonful doses.

Also to be given in tablespoonful doses:

- R Ammonium valerate,
Sodium bromide,
Ammonium bromide,
Water,
M. S. To be given in tablespoonful doses.

Each tablespoonful contains 0.15 of ammonium valerate and 0.50 of a mixture of the bromides. Instead of these mixtures, the valerian may be given in powders:

- R Powdered valerian,
Camphor,
M. S. To be given in tablespoonful doses.

Amyl valerate is, of all the preparations of valerian, the one which suits the best at the moment of access of false angina pectoris in neurasthenics. Lemoine recommends the following formula:

- R Amyl valerate,
Oil of sweet almonds,
Syrup of ether,
Distilled water,
M. S. Make an emulsion and after shaking the bottle take the above at one dose, in half a glass of milk.

Chenopodium as a Vermifuge.—H. Brüning (*Medizinische Klinik*, July 22, 1906) has experimented in the children's wards of the Rostock Hospital with *Chenopodium anthelminticum*, an old vermifuge remedy apparently forgotten in Europe,

but still used in the United States. He is persuaded that it is equally efficacious with santonin, while it has the advantage over the latter drug in not being toxic. He gives the oil (essence) of chenopodium in doses of 0.25 to 0.50 gramme, repeated three times daily, at intervals of one or two hours. After the last dose he gives some castor oil. He has found the following formula especially useful:

- R Oil of chenopodium,
Gum arabic, finely pulverized,
Distilled water,
Syrup of bitter orange peel,
Ft. Emulsion.
And
R Oil of chenopodium,
Egg yolk,
Oil of sweet almonds,
Gum arabic, in powder,
Distilled water,
Ft. Emulsion.

Brüning considers that this vermifuge is equally serviceable against the oxyuris vermicularis, the trichocephalus, and the ankylostoma or uncinaria.

Treatment of Lupus Erythematosus by Ignipuncture.—Sabouraud (*La Clinique*, February 1, 1907), after indicating the tuberculous character of erythematous lupus, declares that the best treatment is that with the galvanocautery. If this method has not given successful results in the past, it is because the operators did not realize the fact that the disease invades the deeper layers of the skin, and their cauterization was too superficial. The disease generally appears in young adults who are suffering with some form of tuberculosis; who have enlarged glands or cicatrices from scrophulous abscesses, or other tuberculous stigmata. In some, however, the infection may be latent and the point of departure of the disease may not be discoverable. Numerous ointments have been prescribed, but their value is uncertain, since the lesions sometimes disappear spontaneously, leaving a scar. The least objectionable are the caustic applications, of which the following is an example:

- R Precipitated sulphur,
Salicylic acid,
Pyrogallic acid,
Resorcin,
Ichthyol,
Petrolatum,
M. S. To be given in tablespoonful doses.

All ointments containing pyrogallic acid will stain the skin, however, and can only be employed upon regions where the skin is ordinarily invisible. The very best treatment is by ignipuncture, with a galvanocautery with a very fine point. This should be applied to the border of the lesion, and at a red heat and not at a white heat. The red heat is necessary, since the cauterization should be deep and bleeding will not be produced as it would with the higher temperature. The periphery of the lesion is thus penetrated by a series of punctures, two or three millimetres in depth, about the size of a pin head and about one millimetre apart. Reaction will last about a week. The cauterization is to be repeated every three weeks. After the third treatment marked improvement is usually observed. Some cases are obstinate and require prolonged treatment, but small and medium sized lesions are cured after five or six séances.

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LORD LISTER.

The nineteenth century produced some men who did so much for suffering mankind that they deserve to have their names inscribed in golden letters in the great hall of fame. Morton introduced anæsthesia and made it possible for persons to undergo the most dangerous operation without pain, while Lister brought out the idea of asepsis and paved the way for the surgeon to perform the most difficult operation without fear of sepsis.

Joseph Lister was born on April 5, 1827, in a suburb of London, and celebrated his eightieth birthday a few days ago. So long ago as in the first quarter of the last century it was suspected that certain bodies or organisms were the causes of pyæmia. Oliver Wendel Holmes and Ignaz Philipp Semmelweis maintained this with regard to puerperal fever, while Louis Pasteur, in 1862, proved by filtration that air contained small living bodies which would produce sepsis. To exclude, therefore, the air with its pus producing organisms from a wound, and so prevent pyæmia, was the logical aim of Lister's researches. Morgan had used zinc chloride for this purpose, and Polli the sulphides. Lister now taught (1867) that carbolic acid should be sprayed over every wound from the first incision for the operation until the last piece of bandage had been applied. He had found, in 1864, that phenol had the property of preventing pus formation. The operative field, the instruments, the hands of the surgeon and assistants and nurses, the bandages, all were to be carbolized, either with a solution or a

paste. Lister furthermore distinguished between asepsis and antiseptis; he demonstrated that asepsis could only be achieved by the use of some antiseptic material, such as alcohol, oil of turpentine, carbolic acid, corrosive sublimate, and iodoform.

The theory of sepsis has since undergone many changes, the antiseptic fluids have been improved upon, and the aim of our surgeons is no longer antiseptis, but asepsis. Many of us still remember the disagreeable smell and the feeling of numbness of the hands produced by Lister's carbolic spray. Thirty years ago a surgeon could be recognized by the odor of phenol; his home as well as the hospital was impregnated with it.

The results of Lister's antiseptic treatment have been wonderful. But it took some time before his great idea was universally accepted. Like all great discoverers, he was opposed, severely criticised, and even ridiculed. But his results spoke for themselves, and to-day hundreds of thousands of patients should lift up their hands and thank this man for his work, and there should not be one physician who would not gratefully acknowledge the pioneer labor of Joseph Lister. True, the idea was not his alone; he was not the only and first man to preach it; but it was he who first put the idea into practice, demonstrated its truthfulness, and laid the foundation of our present knowledge of sepsis. There were other men before Columbus who spoke of the water route to India, but, still, Columbus discovered America. There were others who spoke of pus producing organisms in the air, but Lister discovered asepsis.

Lister was forty years of age when his epoch making writings appeared in the *Lancet* (March 16, 23, and 30, April 27, and July 27, 1867). In these essays Lister gives credit to Pasteur, describes his own researches in pyæmia, states that his attention was called, in 1864, to carbolic acid as a disinfectant, and says that his first experiments with carbolic acid as an antiseptic were conducted in the Glasgow Royal Infirmary in March, 1865. He then cites the history of eleven patients treated with carbolic acid by his method, and describes his carbolic acid paste. He is well aware of the occasional effect of carbolic acid upon the skin.

Mr. Joseph Lister, of Edinburgh, published in the *Lancet* of 1855 lectures on clinical surgery during the winter session of 1854 to 1855 by James Syme, Esq. Professor Joseph Lister, of Glasgow, was the writer of the before mentioned articles in the *Lancet* in 1867. Sir Joseph Lister (after 1883), of King's College, London, wrote in 1891 in the *Lancet*, while Lord Lister (since 1897), who retired into private life in 1892, defended as a member of the House of Lords in 1898, in a splendid speech, the necessity of vaccination.

THE ALCOHOL QUESTION.

Two things have happened recently that seem to have led to unusual popular interest in the question as to the wisdom of employing alcoholic drinks medicinally and in other ways. One of them is a communication signed by sixteen British physicians of great eminence, published in the *Lancet* for March 30th. The signers declare their belief in the correctness of the opinion that in disease alcohol is "a rapid and trustworthy restorative." "In many cases," they add, "it may be truly described as life preserving, owing to its power to sustain cardiac and nervous energy while protecting the wasting nitrogenous tissues." They further say: "As an article of diet, we hold that the universal belief of civilized mankind, that the moderate use of alcoholic beverages is, for adults, usually beneficial, is amply justified. We deplore the evils arising from the abuse of alcoholic beverages. But it is obvious that there is nothing, however beneficial, which does not by excess become injurious."

The other thing is the publication by the Putnams of an English translation of a remarkable German book, by Dr. J. Starke, strongly advocating the habitual use of alcohol in moderation under the strenuous conditions of modern life. A short notice of the book appears elsewhere in this issue of the *Journal*. Between them, these two publications have incited some of the New York newspapers to present the views of several well known physicians. As might have been expected, these views differ radically, and we doubt if the public will be much benefited by being made acquainted with them. Physicians are not always free from fanaticism, which, on this question, may take either the one direction or the other, that of the very free stimulation advocated fifty years ago by Todd or that of the absolute disuse of alcohol said to be carried out literally by Sir Frederick Treves, of whom it is reported that he will not allow a drop of any alcoholic drink to be taken into his house.

It seems to us that both these extremes should be avoided, and we think there is a great deal of sense in what the *Sun* represents Dr. Francis Delafield to have said: "I use it myself as a beverage whenever I feel like it, and prescribe it to my patients when I think it will do good." Nobody questions that the immoderate use of alcohol is to be deplored, and we as a profession ought to consider whether we cannot do more than we are now doing to combat the drink habit. We think Dr. Crothers, of Hartford, is quite right in pleading, as he has recently done in the *Albany Medical Annals*, for the more general instruction of medical students in the means of reclaiming persons who are falling into the habit.

THE PATHOLOGICAL SOCIETY OF PHILADELPHIA.

Pathological societies have had a vast influence in building up the scientific medicine of the present day. One of the oldest and most important of the American organizations of this sort, the Pathological Society of Philadelphia, is about to celebrate the completion of fifty years of its existence. The celebration, which may really be considered as an event of national interest, will occupy two days, Friday, May 10th, and Saturday, May 11th. It will be recognized that this is a convenient time for men returning from the Washington meeting of the Congress of American Physicians and Surgeons and for those who may be inclined to come to the Atlantic seaboard a little in advance of the Atlantic City meeting of the American Medical Association.

The first day's proceedings will include the following addresses: The Rôle of Protozoa in Pathology, by Dr. Frederick G. Novy, of Ann Arbor, Mich.; The Newer Pathology, by Dr. Simon Flexner, of the Rockefeller Institute, New York; The Dynamic Point of View in Pathology, by Dr. A. E. Taylor, of the University of California; and Pathology and Practice, by Dr. William Osler, regius professor of medicine in the University of Oxford. The commemorative meeting will be held at 4 o'clock in the afternoon, in the Pennsylvania Hospital, where the society's first meetings were held, in 1857. At that meeting Dr. Osler's address will be delivered. There will be a dinner in the evening. An exhibition meeting will be held on Saturday. Those of our readers who may wish to learn further particulars may address Dr. David Riesman, No. 1624 Spruce Street, Philadelphia.

PROFESSOR POLITZER'S RETIREMENT.

We have received a circular concerning a proposed commemoration of the approaching retirement, by reason of the age limit, of Hofrat Professor Politzer from the chair which for forty-six years he has held with great distinction in the University of Vienna. It was at first intended to hold a public celebration, but it seems that several deaths have lately occurred in Professor Politzer's immediate family, and that on that account he requested the committee not to hold such a celebration. Consequently it has been decided to have medallions struck bearing Politzer's portrait, after a model by Telcs. On a day to be designated the medallion in gold will be presented to Professor Politzer, together with an address bearing the names of all the subscribers to the fund. Copies of the medallion in silver and bronze will be given to the subscribers—one of silver for a subscription of \$5 (24 kronen),

and one of bronze for a subscription of \$2.50 (12 kronen). Should there be a surplus after the necessary expenses have been met, it will be put at Professor Politzer's disposal for the furtherance of some scientific object. Remittances, accompanied by the name, titles, and exact address of the sender, all plainly written, should reach the treasurer not later than May 15th. They should be addressed: "Dr. D. Kaufmann, Vienna, VI, Mariahilferstrasse 37."

Among the members of the medical profession all over the world it is not the otologists alone who will desire to take part in the proposed tribute, though it is in otology that Politzer is most prominent. In our own country there must be many who in past years listened with satisfaction to his lectures, but are not specialists in diseases of the ear. Naturally the committee, which represents not Austria-Hungary alone, but seventeen other nations, is made up mostly if not altogether of otologists. Our American representative is Dr. Herman Knapp, of New York. Great Britain is represented by Dr. Urban Pritchard, of London, France by Dr. M. Lermoyez, of Paris, and Germany by Geheimrat Professor A. Lucae, of Berlin. Such distant countries as Japan and Buenos Aires are among those represented on the committee. The list of subscribers will certainly be worldwide.

ALLEGED LUNACY IN ACCUSED PERSONS.

Senator Agnew has introduced into the legislature of the State of New York a bill providing that, on the strength of an affidavit by any two duly qualified examiners in lunacy who, as the result of personal examination, at the instance of counsel for either side, declare a person accused of felony to be in their opinion insane, the judge, if he is satisfied that justice requires such a course, shall commit the accused to a State hospital for observation for not less than three or more than six weeks, the superintendent of the hospital or the physician in charge of the accused to report to the court at the end of three weeks and, if necessary, again at the end of six weeks.

It is said that Senator Agnew's bill has been submitted to several alienists of repute, and that they approve of its provisions. It is obvious that some legislation is needed to relieve us from the present absurd methods of dealing with the plea of insanity, but it is equally obvious that such legislation ought to be very carefully considered by members of the medical and legal professions before it is enacted. Senator Agnew's bill seems commendable in its main object, but we think that it ought to include a provision for the suitable remuneration of the certifying medical officer of the hospital, and it is doubtful if the discretion vested in the judge

would often come into play, for he would be a bold jurist who should ignore the testimony of two qualified examiners in lunacy.

THE RELATION OF THE KIDNEYS TO METABOLISM.

In a preliminary communication by Bainbridge and Beddard (*Proceedings of the Royal Society*, lxxix, B528) the effects of the removal of large portions of the kidneys on metabolism are reported. Cats were used as the experimental animals. The authors find that removal of three quarters or more of the total kidney weight in these animals is followed by loss of appetite, wasting, and death within a few days or weeks. An increased output of nitrogen in such animals is not of constant occurrence, and it takes place only in animals which have lost twenty-two per cent. or more of their initial weight at the time of its onset. Consequently it may be assumed that the kidneys have no direct influence upon nitrogenous metabolism and that the increased output of nitrogen is simply the result of inanition and is of the same nature as that observed in starving animals. After removal of a portion of one kidney and after subsequent removal of the opposite kidney the animals were still able to pass a concentrated urine; and, furthermore, the amount of urine is not necessarily decreased. Judging from these experiments, may we, then, conclude that in extensive renal disease in man the primary effect is upon the nutrition of the patient, and that the disorder of metabolism is a secondary result of this inanition?

THE HEALTH OF THE ISTHMUS OF PANAMA.

In the month of February the total population of the Canal Zone, Panama and Colon, was 92,494. There were 278 deaths, corresponding to an annual death rate of 36.7 in a thousand of the population. There were five deaths from typhoid fever, thirty-eight from ordinary malarial fever, five from æstivoautumnal fever, one from malarial cachexia, three from hæmoglobinuric fever, one from smallpox, five from dysentery, one from bacillary dysentery, three from amœbic dysentery, five from beri-beri, thirty-three from tuberculous disease of the lungs, two from general tuberculous disease, five from bronchopneumonia, forty-one from pneumonia, and one from congestion and apoplexy of the lungs. The three causes of highest mortality among the working forces on the canal were pneumonia, malarial fever, and accidental traumatism. The average sick rate among the canal employees was twenty-four in a thousand. There were three cases of smallpox; two patients were removed from incoming vessels by the quarantine department, and one case originated on the isthmus. No other quar-

autinable disease occurred. This seems to us a very satisfactory state of things.

Obituary.

HENRY DE WITT JOY, M. D.,
OF NEW YORK.

Dr. Joy died at his home, in the borough of Richmond, on Monday, April 15th, at the age of sixty-five. A few years ago he had an attack of apoplexy. His recovery from the resulting paralysis was slow and incomplete, and we understand that his death was the result of a fresh stroke. For several years Dr. Joy was the chief medical officer of the Sailors' Snug Harbor, on Staten Island. Before that he had served for a long time as a surgeon on the vessels of the Pacific Mail Steamship Company. In that capacity his efficient professional work and his engaging personal qualities made him exceedingly popular.

JOHN H. WIGGINS, M. D.,
OF JAMESTOWN, N. Y.

Dr. Wiggins died at his home on April 1st, in his fifty-third year. He was a native of Pennsylvania, but most of his life was spent in the State of New York. He took his medical degree from the University of Buffalo, and entered upon practice in Jamestown in 1879. For several terms he was president of the Jamestown Medical Society and of the Medical Society of the County of Chautauqua. As has been the case with many prominent physicians, Dr. Wiggins was attracted to medicine while he was engaged in the practice of pharmacy. He was held in high esteem as a practitioner in his section of the State, and he was widely known as a man of exceptional literary ability. It is but a few months ago that we had the privilege of publishing an article of his in which he dealt in a masterly way with the usefulness of the nurse not overtrained.

FRANK B. SWARTZLANDER, M. D.,
OF DOYLESTOWN, PA.

Dr. Swartzlander died at his home on Sunday morning, March 31st. The cause of death was acute nephritis. Born in Bucks County, Pennsylvania, on February 9, 1838, he was graduated from the University of Pennsylvania in 1863. He immediately entered the army as assistant surgeon of the Seventy-fourth Pennsylvania Volunteers, and participated in the battles of Chancellorsville, Gettysburg, and John's Island. He was one of the operating surgeons on duty in the famous School House Hospital at Gettysburg, the Medical Headquarters of the Third Division of the Eleventh Army Corps. When the Seventy-fourth Regiment was mustered out he accepted a commission as assistant surgeon of volunteers, and was sent south to join Sherman's army at Savannah. He remained in Savannah until the close of the war, serving as surgeon of the Marshall Scriven and Pavilion House Military Hospitals, returning north with Sherman's army, and participating in the famous review of all the armies in Washington. He came to Doylestown in 1866, and was engaged in the active practice of his profes-

sion until within a few hours of his death. He was a man of public spirit, broad and generous sympathies, and cultivated tastes. Joining the trained skill of the scientist with the modesty of the constant student, he was the dean of the medical fraternity in his local field and a favorite and prominent factor in the community. A few years before his death he presented to his home town and county a lofty and beautiful flag staff, the largest and most perfect wooden spar in America, which remains a fitting monument to his civic virtue and patriotism. Dr. Swartzlander belonged to the Grand Army of the Republic, the Military Order of the Loyal Legion, and the Masonic Fraternity. He was also a member of the State and County Medical Societies, having been president of the latter and also serving as its treasurer for many years. In 1867 he was appointed physician and surgeon to the Bucks County Hospital, and served consecutively for twenty-three years.

News Items

The Diagnostician is the title of a new monthly medical journal which has made its appearance in Cincinnati.

The American Gastroenterological Association will hold its tenth annual meeting at Atlantic City, N. J., on June 3 and 4, 1907.

The Congress of American Physicians and Surgeons will be held at Washington, D. C., on May 7, 8, and 9, 1907, under the presidency of Dr. Reginald H. Fitz, of Boston.

The Association of American Physicians will hold its twenty-second annual meeting at Washington, D. C., on May 7, 8, and 9, 1907, under the presidency of Dr. Francis P. Kinnicut, of New York.

The American Surgical Association.—The 1907 meeting of this association will be held at the Shoreham Hotel, Washington, D. C., on May 7th to 9th, under the presidency of Dr. Dudley P. Allen, of Cleveland, Ohio.

The Buffalo Academy of Medicine.—The meeting of the *Section in Pathology* announced for Tuesday evening, April 16th, has been postponed until Tuesday evening, April 30th.

The Death of Mr. Theodore D. Buhl.—Messrs. Parke, Davis & Co. announce the sudden death of their president, Mr. Theodore D. Buhl, which occurred in New York on April 7, 1907.

The Graduate Medical School of Cincinnati opens for the first time this spring. The teaching force is the faculty of the Medical College of Ohio, the Medical Department of the University of Cincinnati, with which it is connected.

The Medical Jurisprudence Society of Philadelphia.—At a meeting of this society, held on the evening of Friday, April 12th, Dr. Arnold Lorand, of Carlsbad, Germany, read a paper on the Pathogeny of Crime.

The Annual Meeting and Banquet of the Association of Ex-Resident Physicians of the German Hospital, of Philadelphia, will be held at the University Club on Friday evening, April 26th.

The Seton Hospital at Spuyten Duyvil.—Four salaried positions on the resident staff of this hospital are open for competitive examination, to be held on Monday, April 29, 1907. For particulars apply to Dr. Lewis F. Frissell, 113 East Fifty-sixth Street, New York.

The Saratoga Springs Medical Society.—The programme for a meeting of this society, held on Friday evening, April 19th, included a paper on Anæsthesia, by Dr. D. C. Moriata; discussion opened by Dr. G. H. Fish; and the report of a case, by Dr. J. F. Humphrey.

The Philadelphia Alumni Association of the Medico-surgical College held a smoker at the University Club on Tuesday, April 16th. The graduating classes of the three departments of the college—medicine, dentistry, and pharmacy—were the guests of the association.

The Woman's Hospital Society of New York City.—A meeting of this society will be held at the residence of

Dr. Douglas E. Smith, 295 West Eighth Street, at 8.30 p. m., April 24th. The programme for the evening includes a paper by Dr. Charles R. Hyde, of Brooklyn, entitled "Some Notes on Gonorrhea of the Ocular Surface."

The Association of American Medical Colleges will hold a meeting at the Hotel Russell, Washington, D. C., on Monday, May 6, 1907, under the presidency of Dr. George M. Kober. Other officers of the association are: vice-presidents, F. C. Waite, Ph. D., and Dr. H. W. Loeb; secretary-treasurer, Dr. E. C. Zippin.

The Medical Club of Philadelphia held a reception on Friday evening, April 16th, in the Bellevue-Stratford Hotel. Mr. Richard Watson Gilder, the editor of the *Century Magazine*, was the guest of honor. The following gentlemen acted as a special committee to assist in the reception of Mr. Gilder: Dr. S. Weir Mitchell, Mr. Edward W. Bok, Mr. Owen Wister, Mr. John Luther Long, Mr. Albert H. Smith, and Dr. Alfred C. Lombard.

The Medical Society of the County of Erie, N. Y.—The programme for a meeting of this society, held at Buffalo, on Monday evening, April 8th, included the following papers: The Need of a Trained Microscopist in Every Community, by Dr. William C. Krauss; Gunshot Wounds of the Body, by Dr. V. Kenerson; The Physician in the Wild and Woolly West, by Dr. George E. Fell.

The National Association for the Study and Prevention of Tuberculosis will hold its third annual meeting at the New Waldorf Hotel, Washington, D. C., on May 6-8, 1907. The officers of the association are: President, Dr. Hermann M. Biggs; vice-presidents, Dr. Lawrence F. Flick and Dr. Vincent Y. Bowditch; treasurer, General George M. Sternberg; secretary, Dr. Henry Barton Jacobs.

The Syracuse Academy of Medicine. At a meeting of this academy, held on Tuesday evening, April 16th, the following programme was presented: Opsonic Index, by Dr. A. C. Mercer; Uric Acid: Its Significance and Nonsignificance, by Dr. F. P. Knowlton; Actinomycosis: Report of a Case, by Dr. Frank M. Morrow; Pathology, by Dr. H. S. Steensland.

The Cumberland County (N. J.) Medical Society.—The annual meeting of this society was held at Bridgeton, on Tuesday, April 9th. Dr. E. S. Corson was elected president, and Dr. A. J. Mander, of Millville, was elected secretary for the ensuing year. Dr. John C. Loper read a paper on Pneumonia. The question of life insurance examination fees was discussed, but the society took no action thereon.

The Death of John Wyeth, Esq., of Philadelphia.—Mr. Wyeth, the head of the well-known firm of manufacturing chemists, under the style of John Wyeth & Bro., died at his home in Philadelphia, on Saturday, March 30th. Mr. Wyeth had long been identified with this firm and was well known through the country to physicians, chemists, and pharmacists. At the time of his death he was about seventy-three years of age.

The Tri-Professional Medical Society of New York.—The seventh regular meeting of this society was held on Tuesday evening, April 16th, at the Madison Avenue Hotel, corner of Ninety-second Street and Madison Avenue. The programme for the meeting included a paper by Dr. H. E. Lewis on Therapeutic Optimism vs. Therapeutic Nihilism. The discussion was opened by Dr. F. A. Sturgis and Dr. A. O. Goelet.

Appropriations for New York State Hospitals.—Bills making the following appropriations have been signed by Governor Hughes: Mr. Rogers's, making appropriations for Binghamton Hospital, \$50,000 for new dining room and kitchen, \$81,000 for nurses' home, and \$7,500 for water supply; Middletown Hospital, \$81,000 for nurses' home; Hudson River Hospital, \$81,000 for nurses' home; Kings Park Hospital, \$62,000 for new laundry.

The Cincinnati Hospital Annual Competitive Examination for Internes, just held, resulted in the choice of the following: James T. Kennedy, Earl Wilson, P. H. Schroeder, A. L. Guthrie, Frederick W. Case, James J. Jennie, M. L. Griffith, J. G. Stammel; alternates, Franz W. Miketta, E. W. Ends, and T. R. Dickson. Five of the successful candidates were from the Medical College of Ohio, and three from the Miami Medical College.

Section in Otology and Laryngology of the College of Physicians.—At the regular meeting of this section, held on Tuesday evening, April 16th, Dr. A. A. Bliss exhibited a

Foreign Body of Unusual Character Removed from the Nose, and a Foreign Body Removed from the Larynx; Dr. D. Braden Kyle read a paper on Resection of the Cartilagenous Epiglottis; and Dr. B. H. Paine reported a Case of Septic Meningoencephalitis or Cerebritis.

Section in Ophthalmology, College of Physicians.—At the regular meeting of this section, held on Tuesday evening, April 16th, Dr. George M. Gould read a paper on The Refraction Change Dependent Upon Glycosuria; Dr. William G. Spiller read a paper on Paralysis of Upward Associated Ocular Movements; Dr. William Zentmayer reported A Case of Keratitis Disciformis and Epithelioma of the Lid Successfully Treated by the Local Application of Potassium Chlorate.

The Mortality of Connecticut.—According to the State Board of Health's *Monthly Bulletin* for March, 1907, the total number of deaths during the month was 1,558. This was 42 less than in February and 69 more than in March of last year, and was 308 more than the average number of deaths during March for the five years preceding. The death rate was 18.3 for the large towns, for the small towns 19.6, and for the whole State, 18.6. The deaths reported from infectious diseases were 293, being 18.8 per cent. of the total mortality.

The Octavia Hill Association.—The Octavia Hill Association, of Philadelphia, is endeavoring to secure the passage of a law which shall require owners of tenement houses to provide suitable and sufficient sanitary equipment in these houses. The bill requires that tenement houses be licensed, that regular sanitary inspections be made by the Board of Health, that a minimum amount of air space shall be prescribed for each occupant, and that sanitary plumbing be provided.

The Fairfield County (Conn.) Medical Association.—The annual meeting of this association was held at Bridgeport on Wednesday, April 10th. The election of officers resulted as follows: President, Dr. Edwards M. Smith, of Bridgeport; vice-president, Dr. David C. Brown, of Danbury; treasurer, Dr. James D. Gold, of Bridgeport; secretary, Dr. Frank W. Stevens, of Bridgeport; counselor, Dr. Gould A. Shelton, of Shelton; censors, Dr. W. B. Cogswell, of Stratford; Dr. Frederick Schavoir, of Stamford; and Dr. William S. Randall, of Shelton.

The Northern Medical Association of Philadelphia.—The annual dinner of this association was held on Wednesday evening, April 10th, at the Hotel Edouard. Dr. Ernest A. Kelsey was toastmaster. Dr. Walter L. Pyle responded to the toast, The Anomalies and Curiosities of Medicine; Dr. Henry Beates to the toast, Medical Legislation; Dr. John B. Deaver to the toast, Modern Surgery; Dr. Charles P. Noble to the toast, The Ladies; and Dr. Charles K. Mills to the toast, Some Reminiscences of Philadelphia's Teachers and Practitioners.

Scientific Society Meetings in Philadelphia for the Week Ending April 27, 1907.—Monday, April 22nd, Mineralogical and Geological Section, Academy of Natural Sciences; Society of Normal and Pathological Physiology, University of Pennsylvania. Tuesday, April 23rd, Philadelphia Neurological Society. Wednesday, April 24th, Philadelphia County Medical Society. Thursday, April 25th, Pathological Society; Entomological Section, Academy of Natural Sciences; Section Meeting, Franklin Institute. Friday, April 26th, South Branch, Philadelphia County Medical Society; Northern Medical Association.

Philadelphia Personals.—Dr. J. William White, professor of surgery in the University of Pennsylvania, has been appointed advisory surgeon to the Pennsylvania Railroad.

Dr. W. W. Keen has been made an honorary member of the German Surgical Society.

Professor Friedrich Müller, of Munich, delivered a lecture on Some New Aspects in Diagnosis, in the medical amphitheater of the University of Pennsylvania on Friday afternoon, April 12th.

Dr. John J. Gilbride has been appointed instructor in diseases of the stomach at the Philadelphia Polyclinic and College for Graduates in Medicine.

The Union County (N. J.) Medical Society.—The thirty-sixth annual and one hundred and forty-fourth regular meeting of this society was held at the Elizabeth General Hospital on April 10, 1907. The programme included the presentation and report of several interesting cases, as well as the reading of a paper on Food by the retiring president, Dr. Thomas E. Doland. The following officers

were elected: President, Dr. Horace R. Livengood; vice-president, Dr. B. Van D. Hedges; secretary, Dr. P. DuB. Bunting; treasurer, Dr. Alvin R. Eaton, Jr.; censor, for five years, Dr. Ellis W. Hedges; annual delegates to the State society, Dr. J. B. Harrison, Dr. Thomas E. Dolan, and Dr. Thomas F. Prout.

The Clinical Society of the New York Postgraduate Medical School and Hospital. At a meeting of this society, April 11, 1907, the following programme was presented: Presentation of patients; presentation of specimens, instruments, and apparatus; reports of cases; papers of the evening: Some Points in Aural Disease of Interest to the General Practitioner, by Professor James F. McKernon; The Management of Acute Otitis Media and Its Complications, by Dr. R. L. Loughran; The Management of Chronic Otitis Media and Its Complications, by Professor John B. Rae; discussion by Professor Roosa, Professor Phillips, Professor Douglass, Professor Davis, Professor Harris, Professor Bryant, Professor Chapin, Professor Opdyke, Dr. Putnam, Dr. Sheedy, and Dr. Lovell.

The Mortality of Boston.—The total number of deaths reported to the Board of Health for the week ending April 13th, was 203, as against 234 the corresponding week last year, showing a decrease of 31 deaths, and making the death rate for the week 17.58. The number of cases and deaths from infectious diseases was as follows: Diphtheria, 46 cases, 4 deaths; scarlatina, 40 cases, 2 deaths; typhoid fever, 5 cases, no deaths; measles, 9 cases, no deaths; tuberculosis, 50 cases, 22 deaths; smallpox, no cases, no deaths. The deaths from pneumonia were 26; whooping cough, none; heart disease, 29; bronchitis, 6; marasmus, 5. There were 13 deaths from violent causes. The number of children who died under one year of age was 33; under five years of age, 48; persons over sixty years of age, 50; deaths in public institutions, 70.

The Hartford (Conn.) Medical Society.—A meeting of the *Surgical Section* of this society will be held on Monday, April 22nd. The programme arranged for the meeting is as follows: Presentation of Patients and Specimens: (a) Amputation of Hip Joint, by Dr. E. W. Wells; (b) Obstructive Tumor, Following Gallstones, by Dr. T. N. Hepburn; (c) Large Tumor of Bowel, Resection, by Dr. J. B. Boucher; (d) Pyonephrosis Following Calculus, by Dr. C. E. Taft. Relation of Cases: (a) Chronic Pancreatitis, with Postmortem Records, by Dr. J. B. Boucher; (b) Three Cases of Pancreatitis: 1. Fat Necrosis; 2. Acute Suppurative; 3. Chronic Interstitial, by Dr. F. B. Willard. Subject of the evening: (a) Pathology of the Pancreas, by Dr. I. W. Kingsbury; (b) Surgery of the Pancreas, by Dr. E. R. Lampson; (c) discussion opened by Dr. O. C. Smith, Dr. W. R. Steiner.

Society Meetings for the Coming Week:

MONDAY, April 22nd.—Medical Society of the County of New York.

TUESDAY, April 23d.—New York Medical Union; New York Dermatological Society (private); Buffalo Academy of Medicine (Section in Obstetrics and Gynecology).

WEDNESDAY, April 24th.—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society.

THURSDAY, April 25th.—New York Academy of Medicine (Section in Obstetrics and Gynecology); Brooklyn Pathological Society; Brooklyn Society for Neurology; Hospital Graduates' Club, New York.

FRIDAY, April 26th.—Academy of Pathological Science, New York; New York Society of German Physicians.

The New York Academy of Medicine.—At a meeting of this academy, held under the auspices of the *Section in Dermatology*, on Thursday evening, April 18th, the subject for discussion was Recent Advances in the Knowledge of Syphilis, divided as follows: The Morphology of the Spirochæta Pallida, illustrated by specimens and lantern slides, by Dr. James Ewing; The Inoculation Experiments, by Dr. Charles M. Williams; Serum Diagnosis and Serum Therapy, by Dr. Sigmund Pollitzer; The Practical Application of the New Knowledge, by Dr. Boleslaw Lapowski. Discussion by Dr. L. Duncan Bulkley, Dr. Simon Flexner, Dr. William S. Gottheil, Dr. Edward L. Keyes, Jr., and others.

The *Section in Laryngology and Rhinology* will hold a

meeting on Wednesday evening, April 24th, with the order as follows: Presentation of Patients; Papers: Some Observations Upon the Causes of Voice Failure in Public Singers (a) by Mr. W. J. Henderson; (b) by Dr. D. Bryson Delavan. Discussion by Dr. F. E. Miller, Dr. H. H. Curtis, Dr. R. C. Myles, and others. Exhibition of Specimens and New Instruments: A Laryngeal Mediator for the Patient's Use, by Dr. Sidney Yankauer.

The *Section in Obstetrics and Gynecology* will present the following programme at a meeting to be held on Thursday evening, April 25th: Presentation of Specimens; Papers: Why the Ovaries Should Not be Removed, by Dr. W. Gill Wylie; Why the Ovaries Should be Removed, by Dr. Leroy Brown. Discussion by Dr. Boldt, Dr. Coe, Dr. Goffe, Dr. Wells, and others.

Infectious Diseases in New York:

As are delivered to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending April 13, 1907:

	April 13.		April 6.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	80	8	92	18
Smallpox	1	..	4	..
Varicella	69	..	73	..
Measles	469	6	415	21
Scarlet fever	438	14	392	16
Whooping cough	75	7	74	12
Diphtheria	341	39	319	38
Tuberculosis pulmonalis	466	200	386	211
Cerebrospinal meningitis	17	15	18	10
Totals	1,936	289	1,773	326

The Health of Philadelphia.—During the week ending April 16, 1907, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Typhoid fever	116	13
Scarlet fever	26	3
Chickenpox	35	0
Diphtheria	60	12
Cerebrospinal meningitis	25	12
Measles	46	4
Whooping cough	15	3
Tuberculosis of the lungs	85	75
Pneumonia	73	87
Erysipelas	19	6
German measles	2	0
Cancer	1	28
Mumps	8	0
Tetanus	1	0

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 10; diarrhoea and enteritis, under two years of age, 25; puerperal fever, 1. The total deaths numbered 617, in an estimated population of 1,500,595, corresponding to an annual death rate of 21.31 in a thousand population. The total infant mortality was 145; under one year of age, 119; between one and two years of age, 26. There were 36 still births, 19 males and 17 females. The temperatures were seasonable. The total precipitation was 0.31 inch.

Statement of Mortality of Chicago for the Week Ending April 6, 1907, compared with the preceding week and with the corresponding week of 1906. Death rates computed on United States Census Bureau's figures of midyear populations—2,107,620 for 1907, 2,049,185 for 1906:

	Apr. 6, 1907.	Mar. 30, 1907.	Apr. 7, 1906.
Total deaths, all causes	686	744	660
Annual death rate in 1,000	16.97	18.40	16.80
Sexes			
Males	360	431	382
Females	326	313	278
Age			
Under 1 year of age	125	159	116
Between 1 and 5 years of age	94	68	56
Between 5 and 20 years of age	51	47	43
Between 20 and 60 years of age	277	335	292
Over 60 years of age	139	135	153
Important causes of death			
Apoplexy	13	11	15
Bright's diseases	48	45	53
Bronchitis	17	23	22
Consumption	87	85	87
Cancer	26	34	25
Convulsions	9	17	6
Diphtheria	8	8	8
Heart diseases	58	55	52
Influenza	7	3	8
Intestinal diseases, acute	39	30	29
Measles	10	3	4
Nervous diseases	25	27	24
Pneumonia	146	172	135
Scarlet fever	13	16	9
Scurvy	5	11	3
Typhoid fever	4	5	10
Violence other than suicide	33	29	30
Whooping cough	10	8	2
All other causes	128	162	140

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

April 2, 1907.

1. **Central Hydrocephalus with Regard to the Aqueduct of Sylvius.** By WILLIAM G. SEFTON and ALBERT R. ALLEN.
2. **Myelocystitis.** By CARROLL P. HAYWARD.
3. **Pathology of Paralytic Agitation.** By CARL D. CAMP.
4. **Acute Otitis Media.** By W. J. LEACH.
5. **Influences on the Physiological Action of the Sodium Alkaloid.** By OSCAR HARRY BROWN.
6. **Nervous and Physiological U. S. Pharmacopoeia and National Laboratory Preparations.** By HENRY P. HYNSON.
7. **The Modern Surgery of the Bladder and Rectum.** By SAMUEL CLARK and CLARK.
8. **General Consideration of Renal Pressure in Arterio-sclerosis and Bright's Disease, with Suggestions Concerning the Therapeutical Control of Persistent High Blood Pressure.** By ALBERT R. ALLEN.
9. **Gonococcus Conjunctivitis in Adults and Infants.** By J. B. HOLLOWAY.
10. **Study of the Oponins.** By ERNEST A. KNORR.
11. **Gonorrheal Prostatitis.** By J. BAYARD CLARK.
12. **Idiopathic Neuritis.** By PHILIP ZENNER.

3. **Pathology of Paralysis Agitans.** Camp states that paralysis agitans is not a neurosis, nor is it secondary. Its anatomical basis of the symptoms, muscular rigidity, tremor and the symptoms dependent on them, lies in the affection of the muscles. The disease itself is probably a general toxemia, and there is suggestive evidence that it is due to alteration in the secretion of the parathyroid glands.

4. **Acute Otitis Media.**—Leach gives the following treatment in acute otitis media: In the acute simple otitis media it consists of alleviating the pain and treating the nose and throat with cleansing antiphlogistic agents, to facilitate drainage and ventilation to the tympanum by the Eustachian tube as soon as possible. The pain is best relieved by instilling within the external canal a 4 per cent. solution of cocaine, preceding it with a douche of hot boric acid solution; having the patient lie on the opposite side to the one affected, and then applying heat and repeating the douche and cocaine frequently if necessary. If the bulging of the drum and the pain increases after thirty-six hours' treatment, then do a myringotomy and drain thoroughly, making the incision in the most dependent part of the bulged portion of the drum, which will usually be found in the posteroinferior quadrant. Myringotomy can be done without pain after the instillation of a 10 per cent. solution of cocaine, with a 1 to 1,000 solution of adrenalin. If the drum is not incised it will finally rupture and slough with ragged edges and frequently does not close, leaving the ear exposed to the constant danger of infection. By relieving the intratympanic pressure and tension of the membrane by means of the incision the nutrition and reparative power of the drum are preserved, and, as any clean cut wound will heal more quickly and surely than one made by sloughing, we shall, therefore, lessen the danger of permanent perforation. But more important than all, by early incision we lessen the danger of bacterial invasion of the mastoid cells with its consequent mastoiditis. The cavity should be evacuated and good drainage kept by aspiration and by douching with warm antiseptics. When the discharge has ceased use 10 per cent. ichthyol in liquid petrolatum and continue until the drum is healed, during which time the nose and throat must be constantly treated. We now begin with special measures to restore hearing, then after each nasopharyngeal treatment we practice politizerization, which has for its special object free ventilation of the tympanic cavity. If tympanic ventilation is interfered with by stenosis of the Eustachian tube it must be

opened, or closing of the tube must be prevented, and then we must remove any and all nasopharyngeal obstructions, such as adenoids, enlarged tonsils, septal spurs, enlarged turbinates, polypi, deviated septum, etc. If there is simply a Eustachian salpingitis we may have to resort to bougies. As these nasopharyngeal abnormalities are the greatest cause of tympanic disease, as well as of many other troubles, it is far more expedient to remove them than to wait and only partially succeed in restoring the middle ear after it has been disturbed by these abnormalities.

5. **Differences in the Physiological Action of the Salts of an Alkaloid.**—Brown says that the acid with which certain alkaloids, strychnine, quinine, and morphine are combined alter decidedly the pharmacological action of the alkaloid—at least in regard to their toxicity for paramacia. The most toxic salts of strychnine and quinine are in most instances at least those which stimulate catalytic processes the most markedly. The salts of morphine with the smallest degree of toxicity, in some instances at least, are the salts of those acids, the sodium salts of which stimulate the catalysis the most markedly.

9. **Gonococcus Conjunctivitis in Adults and Infants.**—Holloway reports one hundred and twenty-nine cases of gonococcus infection, dividing the series in two groups: 1. Those in which the infection occurred subsequent to labor, or gonococcus conjunctivitis. 2. Those in which the infection could be traced directly to birth, or conjunctivitis neonatorum. Of the one hundred and twenty-nine cases that came under observation, seventy-two cases could be included under gonococcus conjunctivitis, and fifty-seven under conjunctivitis neonatorum. Of these seventy-two cases of the former involving one hundred and six eyes, fifty-four cases occurred in adults, forty-four of which were males and ten females, while the remaining eighteen cases were among children, and only four of these were of the male sex. Among the adults there was a bilateral involvement in nineteen cases and a unilateral involvement in thirty-five cases, and in the latter series the left eye was involved twice as often as the right, the actual numbers being twenty-three and twelve. Among the children fifteen cases were bilateral and thirteen unilateral. Among the solutions used for cleansing, boric acid solution was given the preference, with potassium permanganate a close second, while bichloride solution, formalin, and silver nitrate were each used in about an equal number of cases and would rank a poor third. It may be said that in association with these sterile water and physiological salt solution were used in some cases. The various silver salts in gonococcus conjunctivitis used were: Silver nitrate was employed in 31 eyes, with subsequent involvement of the cornea in 8, or 25.8 per cent.; argyrol in 20 eyes, with corneal involvement in 4, or 20 per cent.; protargol in 4, with no subsequent corneal changes; silver nitrate and argyrol in 6 eyes, with corneal involvement in 2, or 33 1/3 per cent.; no silver preparation in 2, with one eye developing corneal changes, or 50 per cent. It is thus shown that 16 of the 64 eyes above enumerated developed some abnormalities in the corneal tissues. Among these silver nitrate was used in 2 eyes that were enucleated, one that was blind or had but light perception, one that had a moderate reduction of vision and 4 that had slight or no impairment. So that among the 31 eyes in which silver nitrate was used there was a practical loss of the eye in 3 cases, or 9.67 per cent. In the eyes treated with argyrol 2 were blind or had but light perception, one had a moderate reduction, while another had but slight or no impairment of vision. Here the practical loss of eyes would equal 10 per cent. In conjunctivitis neonatorum we find that 50 of these eyes were treated with silver nitrate, with subsequent corneal involvement in 6, or 12 per cent.;

14 eyes were treated with argyrol, in which but 1 developed corneal changes, or 7.14 per cent.; 16 with silver nitrate and argyrol, with 2 showing corneal changes, or 12.5 per cent.; 2 with silver nitrate and protargol, in both of which the cornea became involved, while in thirteen eyes no silver preparation was used and none of these developed abnormalities of the cornea. In the eleven eyes that developed some change in the corneal structure while under observation, the treatment was as follows: With silver nitrate one eye was blind, or had but light perception, while in 5 there were varying degrees or no visual impairment. This gives a total loss of vision in 2 per cent. of the eyes so treated. With argyrol one eye became blind, or a total loss of vision in 7.14 per cent. In the 2 eyes with corneal involvement treated with silver nitrate and argyrol, neither resulted in a destruction of vision, while in the 2 treated with silver nitrate and protargol the corneal changes were extensive and produced blind eyes.

MEDICAL RECORD.

April 13, 1907.

1. Treatment of Acute Cardiac Affections in Childhood.
By ADOLF BAGINSKY.
2. Local Thermoherapy, By W. GILMAN THOMPSON.
3. Aneurysm of the Arch of the Aorta Which Ruptured into the Esophagus in a Young Woman Without External Evidence of Syphilis,
By GEORGE L. PEABODY.
4. Diagnosis of Early Pregnancy, with Reference to a Particular Sign,
By LOUIS J. LADINSKI.
5. Symptomless Mastoiditis, Followed by Meningitis and Death,
By A. B. BENNETT.
6. Prolapse of the Rectum: Report of an Operation for the Relief of the Condition in a Dement,
By JAMES K. HALL.
7. Aspiration in Otitis Media Acuta, By PERCY R. WOOD.
8. Arrested Mental Development,
By HUBERT RICHARDSON.

1. Treatment of Acute Cardiac Affections in Childhood.—Baginsky observes that there are two questions which must be considered in regard to this subject: (1) Should any resort be had to venesection at the height of the disease in these cases; and (2) is early puncture with the needle indicated where an extreme degree of pericardial effusion is present? Venesection, formerly in great favor, but later abandoned, has recently been revived by some English authors as a therapeutic procedure. The author has used the method in two cases, one of acute endocarditis complicated with pericarditis, the other of acute cardiac dilatation with violent heart action, with some success as regards the pain and overactivity. The disease itself did not seem to be in any way affected, and the pain and dyspnoea returned. The second case ended fatally. On account of this experience Baginsky feels that he can scarcely recommend the abstraction of blood in these cardiac cases as a safe or efficient procedure, for, aside from the difficulty of controlling subsequent hæmorrhage, there is also the danger of septic infection from the wound caused by the leech bite. Exploratory puncture of the pericardial sac is undoubtedly indicated in certain cases where the diagnosis of a large pericardial effusion can be made with accuracy. This, however, is sometimes a very difficult matter, particularly in children, where the condition may be confounded with acute cardiac dilatation. Another remedy which has lately been revived by the French writers is the application of vesicants over the cardiac area. Baginsky does not recommend this procedure, which is not only cruelly annoying and distressing for children, but is inefficient. There is also a danger to life in using this method, for the wounds caused may become the site of a diphtheritic infection, as has been shown in a number of instances. The suggestion should, therefore, be abandoned.

2. Local Thermoherapy.—Thompson remarks that the topical application of thermoherapy is of little if any value in controlling deep seated visceral hæmorrhages, congestions, or inflammations. Experiments demonstrate that the ordinary means of applying local heat and cold to the surface completely fail to affect the temperature of structures lying beneath the skin to any practical extent, so long as the peripheral circulation remains active. Thermoherapy as applied to the peripheral structures of the body is of so much importance that more adequate facilities should be provided for its employment.

4. Diagnosis of Early Pregnancy, with Reference to a Particular Sign.—Ladinski is convinced that a diagnosis of early uterine pregnancy can be made or excluded in nearly every instance with almost absolute certainty. The probable signs of pregnancy in the early months are: (1) Changes in the shape and consistency of the body of the uterus; (2) increase in size of uterus; (3) changes in the cervix; (4) intermittent contractions of uterus. Of these signs the last two, namely, changes in the cervix and intermittent contractions of the uterus, can be looked upon only as corroborative signs. The author has found, however, that the change in the consistency of the uterus is an invariably constant and positive sign of early pregnancy; and, furthermore, that this change can be detected frequently as early as the fifth week, but always in the sixth week of pregnancy. As an indication of pregnancy it is in his opinion equally as reliable as any of the positive signs of advanced pregnancy, such as foetal heart beat, passive and active movement of the foetus, and outline of the foetus. This change can be felt in the median line in the anterior wall of the body of the uterus just above the junction of the body and cervix; in other words, in the isthmus of the uterus, a circular area the size of the tip of the finger, which presents to the palpating finger the sensation of an elastic fluctuation. As pregnancy advances this area increases in size in a crescentic manner, until between the third and fourth month, when nearly the entire anterior body, with the exception of the upper crescent of the fundus, partakes of this change, and gives the cystic fluctuating feel to the examining finger. The change appears in the anterior wall of the uterus when the uterus is in the normal position or slightly anteverted, but in extremely retroverted or retroflexed uteri the elastic area appears in the posterior wall, but instead of being perceptible in the fifth or sixth week of pregnancy, is usually felt in the sixth or seventh week. As to the manner of obtaining this sign, it is absolutely essential that bimanual palpation be employed: While the external hand fixes the uterus by counterpressure, and the anterior wall of the uterus from the cervix to the fundus is palpated with the internal finger or fingers, the elastic area in the body of the uterus, immediately above the cervix, will be readily made out; the size of the area will correspond with the duration of pregnancy. The recognition of this elastic area does not require any special skill or dexterity; the ordinary technique and tactile sense requisite for a bimanual examination, combined with a correct interpretation of the change noted in the wall of the uterus, will enable the general practitioner to make a diagnosis with the same ease as the specialist. Again, the absence of this sign is an absolute indication for the exclusion of uterine pregnancy. In the absence of this change in the uterine wall, pregnancy of more than five or six weeks can be positively eliminated, even in the presence of other presumptive or probable signs. The author believes that the peculiar elasticity found in early pregnancy is in all probability due to the extreme vascularity of that particular portion of the uterine wall, and to no other cause; but later, however, the fluctuating feel of the body of the uterus is no doubt due also to the presence of the gravid sac.

7. Aspiration in Otitis Media Acuta.—Wood describes his middle ear aspirator as follows. It consists of a glass tube three inches long with a reservoir for exudates. The aural extremity tapers and is tipped with rubber, and to the other is attached a syringe with a good sized air chamber. When in place the rubber tipped end seals the opening, the piston is drawn out gently and retained until the reservoir fills, or until no further exudates, blood, or serum escape. By this means these cavities are relieved of vast quantities of pathological secretions which would never entirely drain away or be absorbed, but remain throughout life to threaten the integrity of the parts. While this procedure does not exactly sterilize these parts, by the removal of vast quantities of microorganisms their preponderance over the living tissues is destroyed. Another feature not to be ignored is the favorable influence exerted by the blood letting principle applied by the instrument. It relieves congestion, soothes pain, and hastens convalescence.

BRITISH MEDICAL JOURNAL.

March 30, 1907.

1. The Diagnosis of Certain Forms of Renal Disease, By J. R. BRADFORD.
2. Albuminuric Retinitis, By W. H. JESSOP.
3. Remarks on the Treatment of Syphilis, By G. PERNET.
4. Researches on the Bacteriological Diagnosis of Cholera, Carried Out by Medical Officers of the Sanitary, Maritime, and Quarantine Council of Egypt, By M. A. RUFFER.
5. Insanity: Its Causes and Increase (*Lumleian Lectures, III*), By G. H. SAVAGE.

1. Renal Disease.—Bradford says that a diagnosis of serious renal disease should never be made merely on the strength of urine examination, nor should it be excluded because a single urinary examination fails to show the presence of albumin. So called functional, cyclical, or physiological albuminuria is of interest mainly because of the errors of diagnosis which are liable to be made. The most constant factor in the production of the albuminuria is posture, hence the terms "postural" or "orthostatic" albuminuria. The influence of diet is often extremely small; on the other hand, posture produces the most marked effect. As long as the patient remains in the recumbent position, the urine remains free from albumin. Thus the urine secreted in the night and passed the first thing in the morning contains no albumin. But even after a few moments of assuming the erect posture the urine becomes albuminous and remains so all day. Two distinct forms of acute nephritis may be recognized, in one of which dropsy is well marked, and in the other dropsy is absent. The ultimate outlook is more grave in the former. The dropsy cannot be correlated with the mere severity of the urinary changes. The dropsy is characterized, not only by its well known distribution and its tendency to involve the looser subcutaneous tissue, but also by its great persistence and often by its severity. It is much more difficult to treat than the dropsy of heart disease. It never involves the subcutaneous tissues to a high degree without at the same time affecting the serous cavities and the solid organs. Pulmonary oedema is here important, owing to its frequency and danger. Syphilis and acute nephritis are often closely associated; the specific disease is often running a mild course at the time the nephritis first shows itself, and is frequently overlooked. The albuminuria is usually intense and persistent.

2. Albuminuric Retinitis.—Jessop reports three cases of albuminuric retinitis occurring in cases of parenchymatous, chronic interstitial, and acute nephritis of pregnancy, respectively. Retinitis is more often observed in chronic interstitial nephritis than in parenchymatous nephritis, and much less frequently in acute nephritis. The disturbance of vision varies

greatly and bears no marked relation to the intensity of the retinitis or to the kidney mischief. Patients rarely become blind, except suddenly from uræmic poisoning. The sight, if affected, is gradually impaired, and good acuity of vision is often retained to the end of life. This is because the actual yellow spot area is little affected, though the retinal lesions may be very gross. In acute nephritis the sight may be recovered permanently; in the other forms any improvement is only slight and temporary. The prognosis, except in the acute nephritis of pregnancy, is very serious; the duration of life, after the ocular signs are present, is limited to months, very rarely years.

4. Cholera.—Ruffer gives the results of a series of researches on the bacteriological diagnosis of cholera, special attention having been paid to the agglutination test. His conclusions are as follows: 1. A certain number of vibrios, although agglutinating to some extent with cholera serum, are sharply differentiated from the cholera vibrio morphologically, by the fact that they are multiciliated. 2. Whereas some vibrios found in ship water are agglutinated by very dilute solutions of cholera serum, others are agglutinated by far stronger solutions only. The latter form a transition stage, so to speak, between the nonagglutinating and the highly agglutinating vibrios. 3. Although an active cholera serum agglutinates all the vibrios to some extent, yet only two of these vibrios when injected into animals produce sera having a powerful agglutinating effect on cholera vibrios; two sera had the same property, but to a slighter extent, and two had none. The experiments support the conclusion that it is not advisable to trust to the agglutination test only in the bacteriological diagnosis of cholera. The test is useful, but not specific.

5. Insanity.—Savage, in the third of his Lumleian lectures, takes up the ætiology of insanity under the following heads: *Alcoholism*. Alcoholic excess has long been considered as one of the most powerful causes of insanity; yet England has become much more sober and at the same time the number of insane has steadily increased. Alcohol affects the nutrition of the brain and may be called a nerve toxine. It produces acute symptoms which may pass from delirium to mania, and finally to a chronic hallucinated state. In many ways alcoholic excess resembles in its results senile mental decay. Chronic alcoholism leads to a state of the nervous system allied to that produced by strong neurotic heredity. Alcoholic parentage tends to produce mental weakness and criminality in the offspring. Alcohol leads to delusional insanity, to recurring mania, to delirious mania, and later to dementia of a peculiar type. It plays an important part in the production of general paralysis of the insane—i. e., in combination with syphilis. *Influenza*. The toxine of this disease has a special harmful effect upon the nervous system. It destroys sleep and injures the digestion and general nutrition. The number of suicides always rises rapidly after an epidemic. It may produce any form of psychopathy, acting as either a predisposing or an exciting cause. The severity of the influenza has no relation to the form or gravity of the insanity. The author's general conclusion is that, though there is undoubtedly a great increase in the numbers of the insane, it does not follow that there is any ground for fear that the race is rapidly degenerating. There is increase in general paralysis of the insane, and also of those suffering from terminal dementia. There is doubtless a growing nervousness which means less ability to withstand the strains of life, and the indication is to reduce these strains and thus prevent mental breakdowns.

LANCET.

March 30, 1907.

1. The Increase of Insanity. (*Lumleian Lectures, I*), By G. H. SAVAGE.

4. *References to Otorhinology and Rhinology to General Practice.* By Sir F. SEMON.
5. *Compensation for the Toxic Conditions of the Nervous System (Hutchinson Lectures, III).* By E. F. BUZZARD.
6. *The Heart and the Nature of the Heart.* By C. BOLTON.
7. *Cerebrospinal Fever.* By N. RAW.
8. *A Series of Cases of Puerperal Septicæmia; With Comments on the Pathology of the Disease.* By A. K. GORDON.
9. *Chloretone and Its Uses, Especially in Chorea.* By W. E. WYNTER.
10. *"Pulmonary Hypertrophic Osteoarthropathy," Occurring in a Case of Congenital Heart Disease.* By H. B. SHAW and R. H. COOPER.

3. Acute Toxic Conditions of the Nervous System.

Having in the third of his Goulstonian lectures, discussed the ascending myelitis, Landry's paralysis, and acute toxic polyneuritis. His conclusions regarding the ascending myelitis are as follows: 1. A group of cases which may have the same clinical picture, but which may arise either spontaneously or as a secondary complication in other conditions, deserves the name acute ascending myelitis. 2. These cases are characterized from the clinical point of view by an acute ascending paralysis associated with marked loss of cutaneous and deep sensibility of all kinds and with loss of sphincter control, and anatomically by an acute inflammation of the spinal cord, affecting both the white and gray matter, beginning generally in the lower dorsal or lumbar regions and spreading upwards to the medulla. 3. Both on experimental and clinicopathological grounds there is evidence to support the view that the inflammation is due to an infection of the lymphatic system of the spinal cord; in other words, that the disease is a spinal lymphangitis. 4. The condition is not a specific one and may be due to the action of various microorganisms. There is no particular age incidence nor is there any instance of an epidemic tendency. The two conditions from which Landry's paralysis must be differentiated, are acute poleomyelitis and acute toxic myelitis. As compared with acute poleomyelitis, the constitutional symptoms of Landry's paralysis are less marked, the range of temperature is lower, and the malaise, anorexia, and vomiting less frequent. There is moderate pain during the onset of the paralysis, but none in the paralyzed limbs. Recovery from the paralysis, if it occurs, is slow and evenly distributed without marked atrophy. In both diseases the paralysis is usually flaccid, and the sphincters escape as a rule. In acute toxic neuritis constitutional symptoms are often entirely absent. There is numbness accompanied by sharp pains in the extremities, and marked tenderness of the muscles is the rule. The motor phenomena are very important, and must be carefully tested. The limbs, and especially their peripheral portions, are more affected than the trunk. In conclusion the author states his belief that there are four kinds of acute paralysis which may be clinically and anatomically differentiated, and that (a) acute poleomyelitis is an acute specific fever in which the nervous system is attacked through the circulation; (b) acute ascending myelitis a spinal lymphangitis; (c) Landry's paralysis possibly a species of spinal lymphatic intoxication; and (d) acute toxic polyneuritis a toxæmia producing a parenchymatous degeneration of the lower motor neurons.

4. **Acute Heart Failure.**—Bolton states that acute failure of the heart is brought about by any condition interfering with the emptying of its cavities during systole or the filling of its cavities during diastole. Interference with the heart in its capacity as a force pump may be brought about in two ways; either by deficiency in its muscular power or by an increased resistance to the output of blood. Deficient power occurs in acute degeneration of the muscular fibres due to some poison as in diphtheria, typhoid fever, alcoholism, etc. Here

the indications are (1) to prevent or diminish the degeneration; (2) to lessen the work of the heart; and (3) to stimulate the heart over short periods when fatal syncope is threatened. The first indication can only be successfully met in the case of diphtheria where we have diphtheria antitoxine at our service. In typhoid fever we have no antitoxine, but by reducing the fever by means of cold baths we prevent heart failure. In pneumonia the nerve centres are probably implicated as well as the heart muscle fibres. Acute heart failure may result from alcoholic poisoning, which is a depressant to the cardiac muscular tissue and leads to fatty degeneration. An increase of the normal resistance to the output of the heart leads to an increase of the work done, and if the heart muscle is diseased, to heart failure. Such an increase of work results from excessively high pressure either in the systemic or pulmonary bloodvessels. Acute Bright's disease is an example of a condition producing high arterial pressure, and mitral stenosis, emphysema, and pneumonia of conditions causing obstruction in the pulmonary circulation with consequent failure of the right ventricle. The diastolic filling of the heart may be affected by the diastolic quantum of blood being either too great or too small. Excessive filling of the cardiac cavities may be caused, for instance, by excessive muscular exertion, or by rupture of an aortic valve with regurgitation and acute dilatation of the left ventricle. Any condition raising the intrathoracic blood pressure will diminish the diastolic blood quantum—the best examples are pericardial effusion and hæmorrhage into the pericardium. Finally, a diminution in the total amount of blood, as seen in hæmorrhage and vasomotor paralysis occurring in shock, both produce acute heart failure, owing to the diminished filling of the cavities during diastole, and also through muscular weakness resulting from deficient circulation in the coronary vessels. Shock is due to impairment or breakdown of the vasomotor mechanism. The bloodvessels lose their power to accommodate for changes of position, and stimulation of a sensory nerve causes no vasomotor response. The indications for treatment are to restore the vasomotor tone or to increase the volume of blood. Strychnine is useless, and the best results are obtained by repeated injections of adrenalin in conjunction with saline infusions. Bandaging the legs and abdomen so as to increase the amount of blood in the larger vessels is also of service. Rupture of the heart, due to fatty degeneration, acute abscess, etc., always leads to death. Pleural effusion is liable to be accompanied by acute heart failure, due to a rise in the intrathoracic pressure, and to obstruction of the pulmonary circulation.

LA PRESSE MEDICALE.

March 23, 1907.

1. *Surgical Treatment of Fractures of the Lower End of the Humerus.* By J. HUCHET.
2. *Infantile Hygiene. Principles of Artificial Nursing. Prevention of Infantile Enteritis.* By PAUL LONDE.
3. *The Alimentary Regime to be Instituted in Measles.* By J. D.
4. *Gonorrhea, Rhinitis, and Bier's Cupping.* By R. ROMME.

1. **Fractures of the Lower End of the Humerus.**—Huchet recommends suture of the fragments in all cases, because the fracture may be reduced more accurately, and because better union may be promoted by the removal of splinters, clots, and fragments of tissue, and because the condition of the nerves may be determined.

March 27, 1907.

1. *Souvenirs of the Russo-Japanese War. What I Saw of the Battle of Mukden from a Medical Point of View.* By J. J. MAIGNON.
2. *Intoxication with Sodium Salicylate in Children.* By ALFRED MARTINET.
2. **Intoxication with Sodium Salicylate in Children.**—Martinet quotes the following conclusions from Lang-

renal, who published an article on this subject in the *Archiv* last year. 1. Secondary symptoms which occur in the acid poisoning of diabetes. 2. The toxic dose is variable and is dependent on the individual idiosyncrasy and the constipated condition of the patient. 3. Acetone may be detected in the urine and in the breath. Its presence constitutes one of the first symptoms of the affection, and may perhaps be considered a true danger signal. 4. Treatment consists essentially in keeping down the acidity of the urine by the administration of large doses of sodium bicarbonate and in keeping the bowels open.

LA SEMAINE MEDICALE.

Neuronophagia. By P. MARINESCO.

Neuronophagia.—Marinesco alleges that neuronophagia is not a new entity, but a process which is already well known, and therefore proposes to replace it with the word necrophagia.

BERLINER KLINISCHE WOCHENSCHRIFT.

1. Hyperemesis Gravidarum. By K. HANSEN.
2. Concerning a Case of Rubeola. By A. LINDENHEIM.
3. Concerning the Method of Testing the Strength of the Heart. By E. HOKE and J. MENDE.
4. Protargol Ointment and Scar Formation. By R. B. MILLER.
5. Concerning the Studies Regarding Tuberculosis (Continued). By P. EHRLICH.
6. Recent Experiences Concerning Tuberculosis of the Skin. By A. ALEXANDER.

2. **Febrile Reaction After the First Application of Mercury in the Early Stage of Syphilis.**—Lindenheim states that in twelve out of one hundred and six cases of secondary syphilis, the first application of mercury was followed by a rise of temperature, which soon fell to normal and could be ascribed to nothing except the mercury.

3. **Katzenstein's Method of Testing the Strength of the Heart.**—Hoke and Mende believe that Katzenstein's test not only gives no certain information in regard to the condition of the heart, but that it completely fails in cases of great cardiac insufficiency, and in such cases is absolutely useless and dangerous to life.

4. **Protargol Ointment and Scar Formation.**—Müller strongly recommends the application of a protargol ointment to burns as productive of a better cicatrix than would otherwise be obtained. The formula he uses is:

- R Protargol, 3.0 grammes;
Dissolved in aq. dest. frig. 5.0 grammes;
To be mixed with lanol. anhydr. 12.0 grammes;
Petrol. flav., 10.0 grammes.
M. ft. ungt.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

1. Concerning the Value of the Phenomenon of Complement Deviation in the Differentiation of Capsule Bacteria. By R. BAUSCH and K. MEYER.
2. The Early Treatment of Syphilis. By THALMANN.
3. The Alexander-Adams Operation. By SPÄTH.
4. Paralysis of the Ocular Muscles After Lumbar Anesthesia. By ACH.
5. Concerning a Case of Great Pulmonary Hæmorrhage with Mitral Stenosis and a High Degree of Sclerosis of the Pulmonary Artery. By SCHWARTZ.
6. *Bacillus Coli Immobilis Capsulatus* (Wilde) in a Case of Purulent Cerebrospinal Meningitis. By NÖGGERATH.
7. Cure of a Carcinoma by Sunlight, Together with Some Contributions to Immediate Light Treatment. By WIDMER.
8. An Aseptic Obstetrical Binder. By ROTHSCHEID.
9. M. Schwab's Method to Determine the Coagulability of the Blood. By BERNBAUM.

2. **The Early Treatment of Syphilis.**—Thalmann concludes his long article with this statement, which may be said to cover the whole: There is only one rational treatment of syphilis, and that is the early treatment.

3. **The Alexander-Adams Operation.**—Späth states that the best method of treating a prolapsed uterus which causes sterility or other trouble, when pessaries have failed or cannot be used, is the modified Alexander-Adams operation, because it is easily performed, is without danger, is certain in its results, and produces no disturbances during labor. He says that the more the surgeon operates the better will be his final results.

4. **Paralyses of the Ocular Muscles After Lumbar Anesthesia.**—Ach reports that in three out of four cases the abducens were met with in the surgical clinic at Munich following lumbar anesthesia, which had been administered in four hundred cases. Three of these followed the injection of stovaine, one that of tropacocaine. Three were monolateral, one was bilateral. The paresis appeared from four to eleven days after the operation, and lasted from six to forty-three days. In one case the anesthesia lasted half an hour, in two it was incomplete, and in the remaining one no anesthesia was produced. After a review of the literature on the subject he recommends that tropacocaine be used in preference to stovaine because of the greater influence of the latter on the motor nerves, that small doses be given, that no concentrated solutions be used, and that absolute rest on the back be maintained with the upper part of the body raised, at least after the operation.

6. ***Bacillus Coli Immobilis Capsulatus* (Wilde) in a Case of Purulent Cerebrospinal Meningitis.**—Nöggerath reports a case of purulent cerebrospinal meningitis in a girl, sixteen years of age, in which the bacteriological diagnosis was made by means of lumbar puncture. The clinical diagnosis was confirmed at autopsy.

7. **Cure of a Carcinoma by Sunlight.**—Widmer reports a case of a woman, eighty-one years of age, who had a cutaneous carcinoma on the back of her hand. Operative treatment, as well as cauterization, was refused. The hand was exposed for several hours a day to the direct rays of the sun, and the growth gradually disappeared.

ARCHIVES OF PEDIATRICS.

1. Anæmia Infantum Pseudoleucæmica. By T. S. WESTCOTT.
2. Modified Wet Nursing. By T. S. WESTCOTT.
3. Typhoid Infection Conveyed by a Convalescent Infant. By T. S. SOUTHWORTH.
4. Hypertrophic Stenosis of the Pylorus in an Infant. By R. B. KIMBALL and F. HARTLEY.

1. **Anæmia Infantum Pseudoleucæmica.**—Koplik considers this condition a symptom complex, in which confusion has been introduced by the variety of descriptions which have been given. Recent blood studies show that the early descriptions by von Jaksch and others were incorrect; their idea being that they were dealing with a primary specific condition or disease of the blood with enlargement of the spleen and liver. The idea of von Jaksch that there was a leucocytosis in all the cases has been abandoned. Other writers have considered the condition as a primary anæmia very closely allied to true leucæmia and liable to degenerate into this disease. The author thinks this position is also untenable. The theory which at present seems to meet with most approval is that the condition is a secondary anæmia due to disturbance of nutrition which reacts on the blood forming organs, and carries with it changes in the blood due to disturbance of the functions of the blood forming organs. It is not due

to primary disease, of the spleen or the bone marrow, but is traceable to disturbed function of the intestine which reacts on other organs and causes severe anæmia.

2. Modified Wet Nursing.—Westcott thinks it is unfortunate that the more or less successful treatment of the problems relating to milk as the food for infants has led in a great measure to the displacement and disappearance of the wet nurse. The plan which is suggested for cases of malnutrition in infants in which it is impossible to bring a wet nurse to them is to use human milk in conjunction with artificial food, each bottle of food containing a definite portion of such human milk. The necessity for such a mixture may result (1) in the profound prostration and physical weakness of the infant which renders active efforts at nursing impossible, (2) in the refusal of the infant to take the nipple, as in children already weaned or accustomed to the easy suction of the bottle, (3) in the inability to procure the constant service of a wet nurse, though a portion of her milk may be obtained. Such a milk supply must be collected and transported with all possible care. The average yield for the day must be apportioned in equal quantity for each feeding, the human milk being simply one ingredient in the mixture. Gradually the artificial ingredients can be increased and the human milk diminished according to the given conditions.

3. Typhoid Infection Conveyed by a Convalescent Infant.—Southworth thinks attention has been directed in the past, too, exclusively to water milk, shellfish, etc., as the carriers of the typhoid infection. Only recently has it been suggested that the convalescent from this disease may still harbor the bacilli in sufficient numbers to be a menace to the public health. The difficulty in obtaining proof that convalescents are a source of danger is great, hence the desirability of collecting positive evidence in this direction. Such a case is reported in an infant from a house hold in which several members had the disease, being removed after an afebrile period of four days to a family in very humble circumstances and uncleanly surroundings. His stools were still frequent and very offensive. In the course of three weeks three children in this household developed typhoid fever.

4. Hypertrophic Stenosis of the Pylorus in an Infant Eight Weeks Old, Operation, Recovery.—Kimball and Hartley recall that this subject has assumed importance within eight years, seventy-one cases of operation having been reported in that period, of which there was recovery in 53 per cent. The diagnosis of this condition in an infant is, usually very difficult, and in most cases it is merely suspected. Diagnostic points in such cases are usually constipation, vomiting, and emaciation. In the case narrated, however, there was no constipation, the loss of weight was inconsiderable, and peristaltic waves were observed only once. At the time of operation the infant weighed eight pounds and two ounces. The operation showed that the pylorus contained a smooth hard mass one inch in diameter, which nearly occluded it. Gastroenterostomy was performed with entire success, the subsequent history of the infant being also entirely satisfactory.

THE JOURNAL OF CUTANEOUS DISEASES.

April, 1907

1. Diet as an Ætiological Factor in Diseases of the Skin, By HENRY W. STELWAGON.
2. Diet as a Therapeutical Measure in Diseases of the Skin, By GEORGE HENRY FOX.
3. Dermatitis Exfoliativa, By BURNSIDE FOSTER.
4. The Significance of Indican in the Urine of Those Afflicted with Certain Diseases of the Skin, By M. F. ENGMAN.

1. Diet as an Ætiological Factor in Diseases of the Skin.—Stelwagon reminds us that certain foods are

toxic in some individuals, these constituting the so called idiosyncrasies. In others the eruptive phenomena, while not to be attributed directly to the food itself, result from overeating; this giving rise to indigestion, crowding the eliminative organs and resulting in faulty metabolism. In others, but more especially in those having cutaneous disease tendency, underfeeding as well as improper feeding and overfeeding, may be the deciding factor that calls forth the eruption. Further, in many cases, the evil effects are due to the toxic and putrefactive changes which the food had undergone before or immediately after consumption. Finally the possibility of chemical preservatives and not the food itself, being the ætiological element in some of these cases, should not be wholly disregarded.

2. Diet as a Therapeutical Measure in Diseases of the Skin.—Fox emphasizes the following: 1. The importance of a careful regulation of the diet in the treatment of all inflammatory affections of the skin, including all skin affections in which the congestive element is present in a greater or lesser degree. While dieting cannot be expected to cure lupus, syphilis, or malignant disease, it certainly can improve the condition of the patient and modify the local conditions to a slight extent, and hence may prove of service in nearly all skin diseases. 2. The habit of eating too much. While it is undeniable that some of our patients suffer from malnutrition and need to be better nourished before their skin disease can be radically cured, it is also true that even these patients can often be benefited by a temporary restriction of diet. For every patient suffering from inflammatory skin disease who is eating too little and suffering from lack of nourishment, we meet with a score or more who eat far more than they actually need and feed the eruption for which they seek relief. 3. In advising our patients what to eat, it is wrong to say "don't eat this or don't eat that," for one might spend an hour or more in making out an expurgated diet list, and still leave foods unmentioned which might, if taken in excess or at the wrong time, prove extremely detrimental. It is far better to name a few nutritious and easily digested articles. Limit the patient to these for a short time, stating that other foods are not necessarily injurious, but that they will certainly do no harm if they are not eaten. Such a plan enables the physician to know exactly what his patient is eating and helps him to ascertain what does good and what does harm. 4. The fact that the character of the food advisable in the treatment of cutaneous and other diseases is of less importance, perhaps, than the manner in which this food is taken. It is not what a patient eats, so much as it is how, and when, and under what circumstances he eats it, that tends to the production of an inflammatory condition of the skin. Hasty eating, irregular eating, and meals taken under the stress of excitement and worry, are the daily experiences of many of our patients both rich and poor.

3. Dermatitis Exfoliativa.—Foster says that there is no specific internal medication for this disease, although carbolic acid internally has appeared to produce a remarkable change for the better, the kidneys should be carefully watched. The disease is apparently in most cases like the infectious exanthemata, a self limited one, and if the patient recovers there may be subsequent attacks. The symptomatic treatment which he has found most satisfactory consists of prolonged (in some cases where conditions permit) permanent warm baths. After coming out of the bath the patient should be enveloped in flannel soaked with either cod-liver oil or olive oil. Some mild antipruritic may occasionally be found of service, but in the majority of cases this will not be called for.

4. The Significance of Indican in the Urine of Those Afflicted with Certain Diseases of the Skin.—Engman observes that indican in excess in the urine, when not

produced by contact putrefaction, or other impeding wounds, is undoubtedly a manifestation of partial putrefaction. This condition may exist for some time without the appearance of apparent pathological changes, in certain individuals who are particularly resistant to the poisons of which this reaction is an indication. On the other side, there are no doubt, individuals who are particularly susceptible, and react violently to the poisons generated by auto-intoxication. This reaction may occur in the form of various so called cutaneous diseases, as an erythematous, vesicular, papular, or bullous condition. Not enough stress is laid upon drug eruptions in the study of cutaneous disorders. In eruptions produced by a known drug or chemical, we have the principal ætiological factor at our command, and it is through the analogy to be drawn between drug eruptions and certain diseases of the skin of obscure origin, that we may look for future elucidation, especially of this question of auto-intoxication. Indicanuria, phosphaturia, oxaluria, albuminuria, glycosuria, and various other urinary symptoms are significant of systemic intoxication, and should be considered when found coincident with cutaneous disorders.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

April, 1907.

1. The Medical Staff and Its Functions, a Study in Hospital Organization, By S. S. GOLDWATER.
2. Abnormal Involution of the Mammary Gland With Its Treatment by Operation, By J. C. WARREN.
3. The Surgical Aspects of Gastric Carcinoma, By J. B. DEEVER.
4. Hydrocephalus Complicating Epidemic Cerebrospinal Meningitis, By H. KOPLIK.
5. Cardiovascular Regulation During and After Operation, By H. W. COOK.
6. Clinical Studies of the Cerebrospinal Fluid, with Especial Reference to Pressure, Protein Content, and the Number and Character of the Cells, By F. P. ROUS.
7. Tropical Neurasthenia and Its Relation to Tropical Acclimation, By L. H. FALES.
8. Experimental Arterial Degeneration, By J. L. MILLER.
9. Some Congenital Anomalies of the Hands and Feet, By C. A. MCWILLIAMS.
10. The Standards and Work of the Philadelphia Pædiatric Society's Milk Commission, Embodying a Reply to a Criticism by Dr. A. H. Stewart, of the Philadelphia Bureau of Health, By S. McL. HAMILL.

2. Abnormal Involution of the Mammary Gland.—Warren divides the cases of abnormal involution into (1) a cystic group, (2) a proliferative group, the latter containing (a) an acinal, (b) a papillary, (c) an adenomatous variety. Most of the cases of this condition are benign, but the analysis of a large number of cases shows 15 per cent. of malignant ones. The condition usually occurs between the ages of forty and forty-five, both breasts being frequently involved, and the axillary glands being sometimes enlarged. The diagnosis of such a cystic condition having been made the question as to treatment becomes pertinent. Spontaneous cure may result, accidental rupture may lead to disappearance of the cyst, or it may sometimes be relieved by aspiration. The objection to amputation is its mutilating effect, and the resulting disfigurement of the scar, and the undesirability of a severe operation for a benign condition. The author recommends an incision along the outer border of the breast through which the gland can be everted, and the cystic structure resected. If careful examination reveals the presence of cancer the breast may then be treated radically.

3. The Surgical Aspect of Gastric Carcinoma.—Deever refers to the fact that 25 to 40 per cent. of all primary cancers are gastric. All measures except surgical ones have proved ineffective in curing cancer in any form. The author's conclusions are that: 1. By

timely operation for the various causes of persistent indigestion many patients will be saved from developing gastric carcinoma. 2. Early diagnosis of gastric carcinoma being so difficult and radical removal being of good prognosis only in cases in which an early diagnosis has been made, partial gastrectomy should be limited to cases of malignant disease operated on for symptoms of pyloric obstruction or other supposedly benign condition in which cancer, though suspected, cannot be diagnosed with accuracy prior to operation. 3. In moderately advanced gastric carcinoma gastroenterostomy should be preferred to partial gastrectomy. 4. If the indication is the prevention of starvation jejunos-
tomy should be performed.

4. Hydrocephalus Complicating Epidemic Cerebrospinal Meningitis.—Koplik observes that this complication is of the greatest practical and clinical importance. The symptoms which have been noted are headache, vomiting, unconsciousness, and convulsions, and these symptoms may be remittent and recurring. Three conditions are mentioned in which acute hydrocephalus occurs with the disease in question. The most important is that which occurs at the onset of the disease, and this form may be relieved by lumbar puncture, with possible saving of life. The second form occurs in the course of the disease, especially in children under two years of age. The tension in the ventricles in such cases is not so great as in older children. Lumbar puncture also relieves the pressure in such cases, but the fluid reaccumulates. Hydrocephalus is the natural sequence in the course of meningitis, in infants and children. A third form may occur at any period after the first week. Puncture is also effective in such cases if performed when the pressure first becomes manifest. Percussion of the skull cap, if it reveals a tympanitic note, indicates hydrocephalus. The value of lumbar puncture consists in its timely use. It is not indicated to drain off purulent or semipurulent fluid from the cerebrospinal spaces, nor merely to relieve headache, fever, and unconsciousness, but to remove the evil effects of pressure.

5. Cardiovascular Regulation During and After Operation.—Cook emphasizes the importance of the study of this subject. Cases with abnormal blood pressure are divisible into those with an increase of tension and those with low tension. There are also abnormal cases in which the blood pressure is still normal, the failure of compensation being only moderate. High tension cases stand the strain of anæsthesia and operation badly, or they may subsequently have acute cardiac dilatation or cerebral rupture with fatal result. Low tension cases usually do well if chloroform is not used, if hæmorrhage is not excessive, and peripheral irritation is not extreme, but they show lowered resistance to infectious disease. Prophylaxis in hypertension cases means the administration of sodium nitrite before operation, and great care in manipulation during the operation. In low tension cases strychnine may be used in prophylaxis, and only moderate purging and fasting. Postoperative cardiovascular complications are represented by the various divisions of tachycardia. Every serious surgical case should have the benefit of accurate medical interpretation of cardiovascular indications.

6. Clinical Studies of the Cerebrospinal Fluid.—Rous reached the following conclusions: 1. The methods described in this paper offer the means for more careful clinical study of nonpurulent cerebrospinal fluid than has been usual heretofore. One should always determine the pressure in the subarachnoid cavity, the protein content of the fluid, and the number and variety of the cells. 2. By these methods a specimen may be found to be pathological which, under ordinary examination, seems normal. Admixture of blood does not make a specimen valueless. 3. Normal fluids differ lit-

tle in quantitative cell content. The normal protein content is within well defined limits. Pressure variations not dependent on lesions of the central nervous system are wide. 4. Except on the broadest lines there is nothing specific in the changes of protein, pressure, and cells. Along these lines the fluid from tuberculous meningitis is characteristic compared with that from paresis or cerebrospinal syphilis. 5. The "clear elements," "cellular degenerations," and "pseudoendothelial cells" which have often been noted, have been definitely proved to be degenerated cells.

7. **Tropical Neurasthenia.**—Fales thinks this form of neurasthenia identical with that which obtains in temperate climates. It is extremely common among Americans who go to the Philippines, men and women suffering with it after they have resided there a year or more. Women suffer almost invariably with uterine disease in connection with the neurasthenia, vasomotor disturbances of various kinds are also common. Tropical neurasthenia responds to treatment more readily than the ordinary kind, change of climate being especially beneficial. The aetiology of the disease stands related to (1) manner of living, (2) the effect of certain infectious diseases, such as dengue fever, dysentery, etc., (3) the effect of excessive use of alcohol, (4) the effect of the rays of the sun, (5) and the effect of continuous and excessive moist heat. Rules of tropical hygiene may be considered as follows: 1. The avoidance of the direct rays of the sun. 2. The avoidance of excessive heat. 3. Simple food carefully prepared, including a fair allowance of meat, and boiled or distilled water. Possibility of anæmic infection must always be remembered. 4. The avoidance of excessive labor and long hours.

8. **Experimental Arterial Degeneration.**—Miller states that this subject is a new one having been inaugurated as recently as 1889. It was first produced in rabbits by intravenous injections of microorganisms or their toxins. Other substances now used are digalen, nicotine, phloridzin, and synthetic substances resembling adrenalin. Arterial degenerative changes may be formed independent of an increase in pressure, and there is evidence that suprarenal extract has a toxic action. The relation of these changes to those which occur in man is important. The author's experiments were instituted in the hope of throwing light upon the cause of vascular change, (1) by the administration of adrenalin with some substance that would inhibit its pressure effect; (2) by giving it a thorough channel that might allow its toxic effect without its pressure action; (3) by attempting to destroy its toxic qualities and leaving the pressure substance intact; (4) by producing experimental arterial degeneration with substances which have only a moderate pressure action.

THE PRACTITIONER

1897-1907

1. On the Treatment of Post Partum Hemorrhage. By G. E. FERRIS.
2. On the Treatment of Ruptured Ectopic Gestation, Etc. By J. C. GIBSON.
3. On the Treatment of Ruptured Ectopic Gestation, Etc. By C. P. CHASE.
4. On the Treatment of Diseases of the Nervous System. By H. C. DUNN.
5. On the Relationship Between Simple Posterior Basic Meningitis and Cerebrospinal Fever. By E. LANGFORD.
6. Juvenile General Paralysis. By W. H. HUGHES.
7. On the Value of Roentgen Rays in Medical Diagnosis. By C. H. FENNELL.
8. On the Value of Roentgen Rays in Medical Diagnosis. By A. F. HERTZ.
9. On the Value of Roentgen Rays in Medical Diagnosis. By H. N. FENNELL.
10. A Review of Some Recent Work. By F. C. MOORE.
11. **Post Partum Hæmorrhage.**—Herman, criticising recent articles upon this subject, objects to the use of

iron perchloride because it cannot be relied upon to stop had hæmorrhage, it fills the uterus with clots, and invites sepsis. One should not stop to differentiate the varieties of this condition, but proceed immediately to work. One should not hurry the third stage of labor by too vigorous squeezing of the uterus, for this may provoke hæmorrhage. The author believes it is uterine contraction alone which stops hæmorrhage, hence this must always be the end in view, but retraction the grasping and constriction of the vessels by the muscular fibres of the uterus must accompany contraction. Post partum hæmorrhage seldom occurs if one does not empty the uterus, whether by forceps or hand traction, when it is not contracting. The author thinks that fatal hæmorrhage from a torn cervix occurs only in the imagination of those who wish to magnify the name of Emmett. Bimanual pressure is believed to be the most efficient means for arresting intrauterine hæmorrhage. Uterine injections of hot water are not objected to, but plugging the uterus with gauze is not deemed advisable.

2. **The Myogenic Theory.**—Cowan states that the rhythmical contraction of the cardiac muscle results from its inherent power to produce rhythmical stimuli, the more frequent being at the venous ostia. The cardiac muscle, if stimulated, responds with the maximal contraction of which it is capable at the time. Extra or premature systole may be produced by mechanical, thermal, chemical, or electrical stimulation, and this is not infrequently observed. It is more frequent with a slow than with a rapid pulse. It may occur in perfect health, in the presence of disease of the heart and vessels, or in disease, which is apart from any cardiac association. The auricular pulsations may be more numerous than those of the left ventricle. The condition of heart block and its various causes is carefully considered, nervous influence being considered of especial importance. The contractility of the cardiac muscle can be easily measured, and is seen to vary according to the nervous influence and the substance which may be experimentally administered.

3. **Ruptured Ectopic Gestation.**—Childe thinks the diagnosis of this condition is usually easy, and that familiarity with the signs and symptoms should form part of the equipment of every practitioner of midwifery. He assents to the theory that ectopic gestation is usually caused by a diseased condition of the tube which prevents the onward passage of the fertilized ovum. He thinks that in every case in which symptoms suggestive of abortion present themselves ectopic gestation should be excluded or confirmed. The symptoms which are to be noted are sudden and severe abdominal pain, with vomiting and collapse. The general symptoms are those of internal hæmorrhage. If a diagnosis is made before rupture the tube and its contents should immediately be removed. When rupture has occurred the only safety is in immediate operation, possible exceptions being cases which are in profound collapse, and those in which hæmatocele is well marked. If a case of hæmatocele is manifestly improving it may be safe to temporize.

4. **Diseases of the Nervous System.**—Thomson discusses disseminated sclerosis, and has observed the following difficulties in its study: 1. In its early history the symptoms are so variable it may be mistaken for hysteria or some other functional disorder. 2. As the patches of sclerosis develop they are likely to occur in the course of the crossed pyramidal tracts. This may lead to the diagnosis of primary spastic paraplegia which has a prognosis better than that of disseminated sclerosis. It may be necessary to postpone the differential diagnosis for some time. 3. If patches develop upon the posterior columns ataxia will be the result, and may give rise to the diagnosis of ataxic paraplegia. There are occasional cases in which such

error in diagnosis is made just as it happens in connection with primary lateral sclerosis. 4. If the patches are more freely disseminated but do not give rise to the more typical symptoms the disease may be confounded with general paralysis of the insane, Friedreich's disease, cerebellar disease, and in children with cerebral diplegia.

5. Posterior Basic Meningitis.—Langmead sums up his paper in the following propositions: 1. Although there are certain clinical distinctions between posterior basic meningitis and cerebrospinal fever, yet by an appeal to the record of the former in older children, those distinctions are lost. 2. Posterior basic meningitis may occur in epidemics. 3. The pathological lesions of this disease have been too narrowly defined. 4. The slender bacteriological distinctions are being nullified by recent experiments. 5. The diplococcus has been isolated from the blood in a case of malignant epidemic cerebrospinal fever. If the author's view of the identity of posterior basic meningitis and cerebrospinal fever is correct it signifies that there are always organisms which under certain conditions, especially those which relate to faulty hygiene, which may attain a high degree of virulence, and result in an epidemic.

6. What is Fever?—Hutchinson gives the following tentative conclusions in regard to fever: 1. It is not the rise of temperature which is harmful, but the toxins, which accompany the fever. 2. The elevated temperature is not due to increased oxidation, as shown by normal or lowered output of carbon dioxide. 3. The febrile phenomena are due to a general disorganization and perversion of normal metabolism by toxins, with conversion of energy ordinarily expended in secretion, growth, motion, etc., into heat. 4. There is less metabolism in fever than in health, but it is mostly destructive. 5. If the dose of toxins is sufficiently large or virulent the lessening of metabolism may even lower the temperature. 6. The temperature in fever is often subnormal. 7. The standard of fever should be an increase in the daily range of temperature in excess of 1.5° F. 8. The rise of temperature may be protection, many pathogenic organisms being unfavorably influenced by fever temperatures. 9. Normal body heat may be a friction remainder, a waste product turned to use, rather than a vital necessity. 10. The intoxication and not the temperature calls for treatment.

7. Juvenile General Paralysis.—Fennell thinks it most important for the practitioner to recognize any abnormality in which there is a definite forecast. Such a condition is juvenile general paralysis, the outlook being invariably fatal. It consists in a progressive deterioration of mind and body in connection with a nervous system tainted with hereditary syphilis, and marked by certain mental and physical characteristics. The subjects of this disease may have shown average intelligence until some form of strain brings on premature decay. The physical signs which are enumerated are iridoplegia, affection of speech, alteration of deep reflexes, and muscular tremors. The facies shows preoccupation and worry, the mental record is usually one of dementia unbroken by mania or melancholia. Physical helplessness gradually supervenes with contracted limbs, loss of speech, facial tremor, bed sores, emaciation, and death. Post mortem one finds thickening, opacity, and adhesion of the pia arachnoid, wasting of the convolutions, increase of subarachnoid fluid, narrowing of the cortex, dilatation of the ventricles, and granularity of the ependyma.

8. The Value of X Rays in Medical Diagnosis.—Hertz thinks the method of Moritz of orthodiagraphy the best yet devised for obtaining accurate measurements of the heart. By comparison of the orthodiagrams taken at different periods one may study the changes as they occur from day to day. The relative

value of different methods of percussing the heart may also be determined by this measure. Changes in the size of the great vessels are also noted by this method, and the beginning of the emphysematous process, too, can one watch the progress of pleural effusion and pneumothorax, and by ordinary skiagraphy one can settle the diagnosis of pulmonary tuberculosis if consolidation has begun. Bronchiectasis and tuberculous glands of the mediastinum are likewise revealed by the x rays. In the digestive canal by the aid of the ingestion of bismuth subnitrate, a bolus which is swallowed may be watched in its progress downward, except that as the bismuth passes rapidly through the small intestines, the course of the bolus can be traced less readily in them than in any other portion of the canal.

Proceedings of Societies.

OBSTETRICAL SOCIETY OF PHILADELPHIA.
MEETING OF JANUARY 2, 1907.

The President, Dr. WILMER KRUSEN, in the Chair.

Vaginal Hysterectomy.—Dr. GEORGE ERETY SHOEMAKER presented this paper, in which the conditions under which vaginal hysterectomy was the operation of choice as contrasted with hysterectomy through the abdomen were illustrated by the histories of ten cases. All the patients had made a normal recovery. Nearly all of them had passed the menopause. Fibromata not larger than a child's head which gave trouble from pressure or from hemorrhage were considered suitable for vaginal hysterectomy, especially in stout women with poor hearts. In procidentia of old women, where the uterus was diseased, especially in the presence of adenoma of the endometrium, the uterus was removed through the vagina as a preliminary to thorough repair of the pelvic outlet, including the anterior and posterior vaginal walls high up. Where the uterus was not diseased, vaginal hysterectomy was not usually an element in the operation for procidentia. Great stress was laid upon the importance of paying heed to bleeding subsequent to the menopause, and cases were cited bearing upon this condition. The danger of overlooking early malignancy in the examination of scrapings was emphasized. That only a few and perhaps none of the tiny pieces removed by the curette might happen to contain structure from which a diagnosis of malignancy could be made, if it was present, was shown by reference to a case in which Dr. Shoemaker had removed the uterus for constantly increasing hemorrhage at the age of forty-one under a clinical diagnosis of malignant adenoma. The microscopical report pronounced the adenoma benign, but three years later there was reported a recurrence of malignant disease in the vaginal scar, which proved the clinical diagnosis to have been more correct than the microscopical.

The method usually adopted for removing the uterus by the vagina was to cauterize freely if there was a suspicion of malignancy, ligate with silk low down, and use the clamps high up, morcellating the mass when it was too large to extract easily. The operation was considered not sufficiently complete for malignant disease of the cervix, or indeed of the endometrium, except in very early cases of adenocarcinoma of the fundus. In all other cases abdominal hysterectomy was to be preferred. Vaginal hysterectomy, considering the after care, was regarded as harder and more tedious for the surgeon, but in selected cases easier for the patient. Convalescence was more rapid and satisfactory, both mortality and morbidity being less than in abdominal hysterectomy, while the after condition of the patient, especially in fat and flabby persons, was better.

Dr. JOHN C. HIRST would hesitate about doing hys-

terectomy before trying atmokausis in a case of persistent bleeding where examination of the scrapings showed no malignancy.

Dr. BROOKE M. ANSPACH believed there were cases of persistent metrorrhagia or menorrhagia requiring hysterectomy in which no pathological lesion of the endometrium existed and in which therefore examination by curetting was absolutely negative. In these cases the lesion was in the myometrium, and they were amenable to nothing but radical treatment.

Dr. C. C. NORRIS believed that in the large majority of cases the microscope could be relied upon to give an absolute diagnosis in all cases of carcinoma of the fundus uteri. Special care should be taken of the curettings, which should all be at once placed in a fixing solution. Personally, he preferred Zenker's, but Müller's fluid, or a four per cent. solution of formaldehyde, would do very well. A plan suggested as possibly better, in case of a small amount of tissue, was to place it first in water and then transfer it to the fixing solution, that the blood might be separated from the tissue. Special pains should be taken to have all the tissue cut. This was best done by having two or three or more blocks mounted, and from these serial sections cut, and have every tenth or fifteenth section stained. The chief source of error in the pathological diagnosis was thought to be the often improperly hardening of tissue, that it was not all cut and consequently not all examined, and that in some cases the diagnosis was made by men not especially experienced in this line of work.

Dr. SHOEMAKER did not wish to be understood as advising hysterectomy where no pathological lesion had been demonstrated, except where the menopause had definitely occurred and bleeding had recurred after a year. The malignancy could unquestionably in most cases be established by the curette, if proper pieces, including basement membrane, were obtained. Reference was made to an examination of curettings made for him by Dr. Foulkrod in which, in twenty slides, all but one were negative.

Chorioepithelioma.—Dr. BROOKE M. ANSPACH and Dr. HENRY R. ALBURGER reported a case which had come to operation and autopsy. A careful examination was made of the original uterine growth and of the metastatic tumors found in the retroperitoneal glands, kidney, liver, pancreas, lungs, and a pectoral muscle. The following observations concerning the case were made by the authors: 1. The history did not very closely suggest the disease, which was diagnosed only after curetting and the examination of scrapings. 2. There was delay in performing a radical operation, due solely to an unwillingness on the part of the patient, and this probably led to the fatal result. 3. Widespread metastases were found at the autopsy, involving almost all the visceral organs except the spleen. 4. The tumor was very malignant and did not contain chorion villi. 5. The ovaries were riddled with Graafian follicle cysts. There was very little lutein tissue present. In this, therefore, if the lutein secretion of the ovary was intimately connected with the physiology of placenta-tion, the defect was a decrease and not an increase. 6. The histological picture presented by the metastatic growth in the liver was an interesting feature. There was difficulty in determining the line between the liver cells and the borders of the chorioepithelioma. This condition was suggestive of the hypothesis which had been advanced that certain neoplasms in a tissue or organ might stimulate the parenchymatous cells to more rapid growth with the production of a new type of cell resembling closely those of the invading tumor.

Dr. JOHN C. HIRST thought that because of the rarity of chorioepithelioma any one person's experience could not be very extensive. He had seen a total of three

cases. He cited the case of a patient who had come into the hospital practically exsanguinated, the chief symptom having been furious hæmorrhage from the vagina for a period of two months. The bleeding was controlled only by packing the vagina as tight as possible with cotton saturated with Monsel's solution.

Dr. J. A. MCGLYNN reported a case seen in the Medico-Chirurgical Hospital in which the uterus was typical of chorioepithelioma. The patient died in about three days subsequent to hysterectomy. She was fifty-seven years of age, and had had no children for over twenty years. There was no history of mole, but the bleeding was profuse. Stress was laid upon the frequency with which chorioepithelioma followed hydatid moles. For this reason the after treatment of mole should be carried out with care. Curetting of the uterus should be followed by swabbing with carbolic acid or flushings with bichloride of mercury and sterile water.

Dr. J. S. BAER spoke of the importance of seeking the cause of bleeding at any time, except during the regular menstrual period. This, to the general practitioner, he thought was of great importance.

Dr. CURRIE referred to the case mentioned by Dr. Hirst, which had been under his care. The bleeding had followed a normal convalescence from confinement and was the only symptom.

Dr. ANSPACH called attention to the two most practical points: The necessity, in making a diagnosis by the microscopical examination of scrapings, of curetting the uterus very thoroughly so as to include some of the inner muscular tissue of the uterine wall; and that sometimes even apparently hopeless cases were cured by an operation which was incomplete. He referred to a case reported by Dr. Noble, of a tumor involving the bladder, in which it was impossible to remove all the diseased area. Supravaginal hysterectomy was done, no attempt was made to excise the diseased bladder wall, and the patient recovered. Other similar cases were said to have been reported.

The Treatment of Eclampsia.—Dr. JOHN C. HIRST's conclusions as to the treatment of eclampsia, based upon the cases at the University of Pennsylvania Maternity, were as follows: The routine treatment consisted of: 1. Chloroform to avert the attack, if possible. 2. Fifteen minims of fluid extract of veratrum viride hypodermically. 3. Washing out stomach and through the tube introducing two ounces of castor oil and four drops of Croton oil. 4. A hot vapor bath or hot pack for thirty minutes every four hours. 5. Hypodermoclysis of a pint of salt solution under the breast every eight hours. 6. If convulsions recurred, repeating the veratrum viride in five minim doses every hour for three doses, and then, if the blood pressure was still high and the patient cyanotic, venesection, from eight to sixteen ounces of blood being removed. 7. Under ordinary circumstances, letting the labor alone.

Morphine and pilocarpine were not used ordinarily, but their use was restricted to desperate cases. Venesection was not used until veratrum viride had been given a trial. Accouchement forcé was used only under the following conditions: 1. When the patient was far advanced in spontaneous labor, when the forceps was applied. 2. If the patient was seen very early after the first onset of convulsions, it might be advisable to interfere. 3. If the patient was going from bad to worse under treatment, the uterus was emptied as a last resort. The cases studied were 88 of eclampsia and 278 cases of albuminuria. This treatment gave a mortality, excluding patients brought in in a moribund condition, of 13.4 per cent. Of those with albuminuria, forty had had eclampsia in previous labors (one four times), but escaped under treatment.

Dr. RICHARD C. NORRIS said that casual reference

to his records at the Preston Retreat showed an average of two or three cases of eclampsia in a year. He usually saw four or five cases every winter in consultation, but had had but one case in his private practice in fifteen years. He had never done Cesarean section or used a Bossi dilator in eclampsia at the Preston Retreat. When the cervix was dilated, forceps or version was resorted to, and prior to dilatation eliminative treatment was vigorously employed while a bag was used to produce dilatation. The method of elimination by the bowel he regards as the most valuable. He had yet to see a woman die of eclampsia with whom he had been able to secure from twelve to twenty stools in twenty-four hours. This was his first aim in treating any case. Two ounces of Epsom salts were first administered, and, if it was vomited, then three to five drops of Croton oil were given in sweet oil. The danger was pointed out of excessive amounts of salt solution unless the purging or sweating was free. *Veratrum viride* should be used with caution, in some cases of eclampsia being distinctly contraindicated. If the condition was of sudden onset, *veratrum* would be useful in moderate, frequently repeated doses until it had decidedly slowed the pulse. Morphine, owing to his early training, he had usually omitted. There should be a distinction as far as possible between the various types of the disease. Cases showing a slow onward progress suggested a kidney type, and in such cases morphine would be a bad drug to give, especially in the interstitial type, as recently pointed out by Dr. Tyson. Other groups of cases might be looked upon as of intestinal origin, and here large doses of morphine, to control convulsions, and copious lavage of the bowel would be of value. Another group of cases, hepatic in origin, he had always felt to be the most hopeless. Admitting that there was nothing to prove the theory of the syncytial origin of the toxins of eclampsia, he was inclined to group those as possibly of syncytial origin in which the onset was sudden and without premonitory signs. In such a case he would not hesitate to either stretch or cut the cervix and deliver the patient rapidly. The plan of treatment to which he had always objected was the routine use of a vigorous surgical procedure. He admitted that the literature of the world in the last year or two showed a steadily reduced mortality from the aggressive plan of surgical treatment, but he believed the secret of this to be that all cases were being so treated, that the mild ones that would have gotten well without the surgical treatment were credited to it, and that the worst cases, in which death would occur, in spite of surgical treatment, continued to give a mortality to even that treatment.

Dr. NORRIS regards the absence of mortality from eclampsia at the Preston Retreat as due to the fact that they did not have the neglected emergency cases, rather than as a credit to himself. For the same reason he explained the absence of mortality from sepsis in almost 4,000 consecutive cases.

Dr. BARTON COOKE HIRST referred to a serious problem in the treatment of eclampsia in the University Maternity on account of the kind of patients brought in in the ambulance. He did not agree wholly with Dr. Norris concerning purging. He thought it was brought about too slowly to be of great value in the worst cases, and in such cases he depended mainly upon sweating. This, however, he thought was very imperfectly carried out in the average private house, and suggested that the double mortality of the private house cases, compared with the hospital cases, might be due to this imperfect method. An illustration was given in which a patient treated at home was given up to die by the attending physician, when sweating brought about by the apparatus used by Dr. Hirst in the hospital resulted in recovery. The patient must be

put into a regularly arranged tent, a steady stream of live steam must be introduced under the tent, and the treatment must be continued for thirty minutes, when literally quarts of fluid could be drained from the woman's bloodvessels. The loss of fluid was replaced by normal salt solution given midway between the sweats. The sweats should be given every four hours during the worst of the attack, but should be continued once or twice a day for several days. Of special interest to Dr. Hirst in the treatment of eclampsia was the relative advantage of rapid delivery during pregnancy or labor and the conservative treatment. His feeling at the present time, after ample experience with both kinds of treatment, was that the conservative obstetrical treatment of eclampsia gave the best results. An absolutely rigid rule, however, could not be followed. Cases were presented in which he deliberately resorted to accouchement forcé in spite of his prejudice against it; for example, a woman entering the hospital comatose and in convulsions, who failed to respond to the routine treatment, was subjected to accouchement forcé. He had seen some such patients recover unexpectedly. *Veratrum viride* had seemed to him the best drug in the treatment. Cases in which it was contraindicated were given. Venesection had not worked well in his hands. If *veratrum viride* was indicated, he gave fifteen minims of the fluid extract as a first dose, and then five minim doses as often as necessary to keep the pulse at 50 or 60. In twenty years he had seen but a single case of *veratrum viride* poisoning. The woman, however, was easily revived with digitalis, strong coffee, and alcoholic stimulation.

Dr. HOPKINSON had employed the Straganoff treatment in a large number of cases, and in eight consecutive cases it had been successful, except in the last.

Dr. SWITHIN CHANDLER referred to the change of opinion concerning the use of morphine.

Dr. WILLIAM R. NICHOLSON thought the most important point was that of rapid delivery. He cited a case which had recently come under his care in the Maternity of the Presbyterian Hospital. The patient had been brought in in the ambulance after having had a dozen convulsions at her home. The mere placing of the hand upon the abdomen caused convulsions. Eliminative treatment was instituted, but the convulsions continued. Under mild chloroform anæsthesia the cervix was dilated without tearing and the child, which was dead, extracted with the forceps. There were subsequently two convulsions, and within the next thirty-six hours the woman returned to consciousness. He would not go on record as believing this the proper treatment for a large number of cases. He did believe, however, that accouchement forcé was indicated in a certain limited number of cases *after* eliminative treatment had been instituted.

Dr. FOULKROD spoke of his interest in watching the treatment of eclampsia in three different maternities. He felt that there was a strong feeling against operative interference unless it was imperative. The solution of the whole problem rested upon a man's judgment. The primary source of infection and the length of time eliminative treatment should be continued, he felt, were questions of great importance. He thought it an open question whether or not in the cases of hepatic toxæmia the estimated amount of nitrogen excretion would aid in a diagnosis before the eclamptic seizures. The question was as to whether it was not possible by some such means to decide whether a severe rather than a mild case would ensue. While it would sometimes seem that the primary cause of eclampsia might be due to the lack of intestinal movements, causing irritation in the various organs, it was difficult to make an analysis with much care before a patient went into eclampsia.

Letters to the Editors.

A MATTER OF TITLE.

37 WEST 10TH STREET, AND TENNY FIRST STREET,
NEW YORK, April 10, 1907.

DEAR SIR: In your publication of my description of my self retaining depressor, you printed after my name: "Surgeon in Chief, Harlem Dispensary, Eye and Ear Department; Attending Ophthalmologist, Sydenham Hospital, etc." In my original letter I wrote as follows: "Surgeon in Chief, Harlem Dispensary, Eye and Ear Department; Attending Ophthalmologist, Sydenham Hospital and New York Polyclinic, O. P. D." Several physicians have called me up and congratulated me upon an appointment which I have not received. Kindly print this letter and so correct any erroneous impressions that may have been caused.

A. J. HERZIG.

Book Notices.

Alcohol. The Sanction for Its Use Scientifically Established and Popularly Expounded by a Physiologist. Translated from the German of Dr. J. STARKE. New York: G. P. Putnam's Sons, 1907. Pp. xx, 13, 317.

This work is a brief for the moderate use of alcoholic beverages by the normal individual. We are inclined to think it unique in the entire absence of any apologetic tone and the bold assumption that ages of appeal to the euphoric qualities of alcohol must be based upon sound sense. Dr. Starke defies the pathologist to show that pathological changes of any kind can be traced to the moderate use of alcohol, and states that deductions drawn from the examination of the organs of a drunkard are as unjustifiable as would be those made from a post mortem on a diabetic if applied to the ordinary user of sugar. The very fact that alcohol has the effect of arousing the natural impulses as opposed to those habits engendered by business training is an argument of the author's in favor of its use; he recognizes it as a good thing that men should occasionally see one another as they are, unencumbered by the armor of business and social conventions. Alcohol makes all unmask at the proper hour in the carnival of life.

For the drunkard Dr. Starke sees no remedy but his total abstinence, but he declines to be classified with drunkards simply because he enjoys his social glass at the close of the day or whenever he need not be armed for the usual life battle. He thinks tea and coffee much more harmful agents than alcohol, and attributes much of the modern neurasthenia to their use. He advocates the addition of rum or brandy to each cup of coffee or tea to counteract the excessive stimulating qualities of caffeine.

Educated people will recognize in this book much of which they are aware, but which, apparently, no one has hitherto thought of putting into print.

A Textbook of Elementary Analytical Chemistry, Qualitative and Volumetric. By JOHN H. LONG, M. S., Sc. D., Professor of Chemistry and Director of the Chemical Laboratories in the Northwestern University Medical School. Third Edition, Revised and Enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co., 1906. Pp. x-299. (Price, \$1.25.)

The fact that this work has reached a third edition is apparently proof that it meets the requirements of a certain class of students, presumably those who are under the instruction of the author in his capacity as professor of chemistry in the Northwestern University Medical School. The work, obviously, is supplemental

to a certain course of instruction, and therefore is best suited to students of that particular school, but is not suitable as a textbook for general use. The student attending a different school would speedily find himself in deep water were he to follow the lines laid down in this work. It would seem more fitting that teachers of chemistry who publish textbooks should follow the well defined lines laid down for the study of this science rather than issue publications which are of real service only to their own classes.

The Practitioner's Medical Dictionary. An Illustrated Dictionary of Medicine and Allied Subjects, Including all the Words and Phrases Generally Used in Medicine, with Their Proper Pronunciation, Derivation, and Definition. Based on Recent Medical Literature. By GEORGE M. GOULD, A. M., M. D., etc. Philadelphia: P. Blakiston's Son & Co., 1907. Pp. xvi-1043.

This volume, a very handsome and handy one, seems to be in the main an abridgment of Dr. Gould's larger dictionary, a book well known to the profession, with such additional new matter as could reasonably be expected. In certain features of spelling we cannot agree with Dr. Gould, and we regret to see that he still clings to "urinalysis" in preference to *uranalysis*, which is in our opinion far preferable. Otherwise this dictionary is to be commended.

Surgical Diseases of the Chest. By CARL BECK, M. D., Professor of Surgery in the New York Postgraduate Medical School and Hospital; Visiting Physician to St. Mark's Hospital and the German Poliklinik, etc. With Sixteen Colored and One Hundred and Sixty-two Other Illustrations. Philadelphia: P. Blakiston's Son & Co., 1907. Pp. 371.

This book, by our well known New York surgeon, deserves to be ranked side by side with Dr. Merrill Ricketts's admirable monograph. The field of surgery has become so large that in literature it has had to be subdivided. The first work on the surgery of the chest was by Stephen Paget, which appeared in 1896. Eleven years have elapsed between the two works, but these years have given us the Röntgen method, and have so much added to our knowledge of bacteriology and asepsis that Dr. Beck's book opens more or less a new branch. The author speaks of the descriptive anatomy and surgery of the thoracic wall and diaphragm (chapters I and II), of the thoracic contents (chapter III), of subphrenic abscess (chapter V), and of the diseases of the breast (chapter VI). In chapter IV he takes up the value of the Röntgen method in thoracic surgery; while the Röntgen treatment of carcinoma mammae and of skin diseases is to be found in chapter VI. The bibliography is very thorough; it takes up eighteen pages. The book is a valuable addition to our surgical literature.

BOOKS, PAMPHLETS, ETC., RECEIVED.

Transactions of the American Climatological Association. Volume XXII. For the Year 1906.

Ikonographia Dermatologica. Atlas seltener, neuer und diagnostisch unklarer Hautkrankheiten. Edita a Albert Neisser, Breslau, und Eduard Jacobi, Freiburg. Berlin: Urban & Schwarzenberg; New York: Rebman Company.

A Manual of Obstetrics. By A. F. A. KING, A. M., M. D., LL. D., Professor of Obstetrics in the Medical Department of the George Washington University, Washington, D. C., and in the University of Vermont. Tenth Edition, Revised and Enlarged. With Three Hundred and One Illustrations in Text and Three Plates. Philadelphia: Lea Brothers & Co., 1907.

Le Cerveau et la moëlle épinière. Avec applications physiologiques et médico-chirurgicales. Par Ch. Debierre, professeur d'anatomie à l'Université de Lille. Paris: Félix Alcan, 1907.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, scarlet fever, and plague have been reported to the States Public Health and Marine Hospital Service, during the week ending April 10, 1907:

Smallpox—United States			
Places	Date	Cases	Deaths
California—San Francisco	Mar. 24-30	1	
Kansas—Topeka	Mar. 16-30	3	
Massachusetts—Lawrence	Mar. 23-30	19	
Minnesota—Wadena	Mar. 23-30	2	
Missouri—St. Joseph	Mar. 22-30	10	
New Jersey—Newark	Mar. 23-30	2	
New York—Eleven counties	Jan. 1-Mar. 2	56	
New York—Broome County	Jan. 1-Mar. 2	Epidemic	
North Carolina—Greenboro	Mar. 23-30	3	
Ohio—Canton	Mar. 23-30	2	
Ohio—Canton	Mar. 23-31	1	
South Dakota—Sioux Falls	Mar. 23-30	1	
Tennessee—Nashville	Mar. 23-30	1	
Virginia—Richmond	Mar. 23-30	1	
Washington—Spokane	Mar. 23-30	12	
Wisconsin—La Crosse	Mar. 23-30	1	

Smallpox—Foreign			
Brazil—Bahia	Feb. 16-Mar. 9	6	
Brazil—Pernambuco	Feb. 1-15		64
Canada—New Brunswick, Kent County	Mar. 23-30	Present.	
Canada—Nova Scotia, Antigonish County	Mar. 23-30	Present.	
Canada—Nova Scotia, Colchester County	Mar. 23-30	Present.	
Canada—Nova Scotia, Digby County	Mar. 23-30	Present.	
Canada—Nova Scotia, Halifax County	Mar. 23-30	Present.	
Canada—Nova Scotia, Pictou County	Mar. 23-30	Present.	
Canada—Nova Scotia, Yarmouth County	Mar. 23-30	Present.	
China—Hongkong	Feb. 16-Mar. 2	31	24
Honduras—Guayaquil	Feb. 16-28		5
France—Cannes	Feb. 1-28	1	1
Italy—Genoa	Mar. 7-21	34	
Mexico—Guerrero, State	Mar. 27	Epidemic.	

Smallpox—Insular			
Philippine Islands—Manila	Feb. 23-Mar. 2	2	
Yellow Fever—Foreign			
Brazil—Manaos	Mar. 2-16	6	
Brazil—Para	Mar. 9-16	4	2
Cuba—Habana	Apr. 5	1	
Ecuador—Guayaquil	Feb. 16-28		13
Mexico—Merida	Mar. 17-23	2	1
West Indies—Trinidad, Port of Spain	Mar. 9-16	1	1

Plague—Insular			
Hawaii—Honolulu	Apr. 7	1	

Plague—Foreign			
Brazil—Bahia	Feb. 16-Mar. 9	10	
Brazil—Pernambuco	Feb. 1-15		3
Peru—Chiclayo	Feb. 28	4	4
Peru—Eten	Feb. 28	6	4
Peru—Lambayeque	Feb. 28	2	1
Peru—San Pedro and Pascas	Feb. 28	2	
Peru—Mayo	Feb. 28	2	
Peru—Trujillo	Feb. 28	2	

Public Health and Marine Hospital Service:

Official List of Changes of Station and Duties of Commissioned and Non-commissioned Officers of the United States Public Health and Marine Hospital Service, for the seven days ending April 10, 1907.

ASHFORD, F. A., Assistant Surgeon. Granted leave of absence for one day, March 2, 1907, under paragraph 191 of the Service Regulations.

BANKS, C. E., Surgeon. Granted leave of absence for one month, to take effect about April 19, 1907.

BuONOCORE, E., Acting Assistant Surgeon. Granted leave of absence for fifteen days, from January 23, 1907, on account of sickness.

CORB, J. O., Surgeon. Granted leave of absence for one month, or so much thereof as may be necessary, on account of sickness.

DELGADO, J. M., Acting Assistant Surgeon. Granted leave of absence for six days in March, 1907, under paragraph 210 of the Service Regulations.

DELL, B. J., Acting Assistant Surgeon. Granted leave of absence for three days, from April 10, 1907.

FROST, W. H., Assistant Surgeon. Granted leave of absence for two days, from March 30, 1907, under paragraph 191 of the Service Regulations.

GRIFFITHS, T. H. D., Acting Assistant Surgeon. Granted leave of absence for three days, from April 10, 1907.

KASTLE, J. H., Chief of Division of Chemistry, Hygienic Laboratory. Granted leave of absence for nine days, from April 10, 1907.

KENNARD, K. S., Acting Assistant Surgeon. Granted leave of absence for one day, March 8, 1907, under paragraph 210 of the Service Regulations.

MEGAW, H. M., Pharmacist. Directed to proceed to Boston, Mass., to report to the Medical Officer in command for duty and assignment to quarters.

ROBERTSON, H. McG., Assistant Surgeon. Directed to proceed to Philadelphia, Pa., for special temporary duty, upon completion of which to rejoin station.

SALMON, T. W., Assistant Surgeon. Granted leave of absence for one day, March 2, 1907, under paragraph 191 of the Service Regulations.

SCHWARTZ, LOUIS, Acting Assistant Surgeon. Granted leave of absence for two days, March 3 and 10, 1907, under paragraph 210 of the Service Regulations.

STIMSON, A. M., Assistant Surgeon. Granted leave of absence for seven days, from April 6, 1907, under paragraph 191 of the Service Regulations.

WALTERS, M. H., Pharmacist. Granted leave of absence for thirty days, from April 1, 1907.

WARD, W. K., Assistant Surgeon. Granted leave of absence for two days, from March 20, 1907, under paragraph 191 of the Service Regulations.

WERTENBAKER, C. P., Surgeon. Granted leave of absence for one day, April 11, 1907.

Appointments

MEGAW, HERSCHEL, appointed a Pharmacist of the third class, on April 3, 1907.

Board Convened.

A board of medical officers was convened to meet at New Orleans, La., on April 9, 1907, for the examination of alien immigrants. Detail for the board: Surgeon J. H. White, Chairman; Passed Assistant Surgeon R. L. Wilson; Acting Assistant Surgeon J. T. Scott, Recorder.

Army Intelligence:

Official List of Changes in the Station and Duties of Officers serving in the Medical Department of the United States Army, for the week ending April 13, 1907:

BOSLEY, J. R., First Lieutenant and Assistant Surgeon. Relieved from duty at Jefferson Barracks, Mo., and ordered to Fort Casey, Wash., for duty.

BUSHNELL, GEORGE E., Major and Surgeon. Detailed to represent the Medical Department of the Army at the meeting of the National Association for the Study and Prevention of Tuberculosis, to be held in Washington, D. C., May 6th to 8th. Major Bushnell will repair to Washington in time to attend the meeting of the association, and upon its adjournment will return to his proper station.

GOSMAN, GEORGE H. R., First Lieutenant and Assistant Surgeon. Granted two months' leave of absence, to take effect after his arrival in the United States, and authorized to apply for an extension of one month.

GREGORY, J. C., First Lieutenant and Assistant Surgeon. Relieved from duty in the Army Transport Service, to take effect upon completion of his examination for advancement, and ordered to Jefferson Barracks, Mo., for duty.

HOWARD, D. C., Captain and Assistant Surgeon. Granted leave of absence for two months, to take effect on June 1st, with permission to apply for an extension of one month.

KILBOURNE, E. D., First Lieutenant and Assistant Surgeon. Granted leave of absence for fourteen days.

MABEE, J. I., First Lieutenant and Assistant Surgeon. Relieved from duty in the Philippines Division, and as-

signed to duty in the Army Transport Service, with station at San Francisco, Cal. Lieutenant Mabée will relieve Assistant Surgeon Pinkston as surgeon of the transport *Sherman*, on arrival at Manila, P. I.

MORRIS, E. R., Major and Surgeon. Ordered to proceed to Washington Barracks, D. C., and report in person to the commanding officer, General Hospital, at that post, for observation and treatment.

NEWGARDEN, GEORGE J., Major and Surgeon. Ordered to report in person to Brigadier General William P. Hall, Adjutant General, President, Army Retiring Board, appointed by paragraph 8, S. O. 239, War Department, October 9th, at such time as he may designate, for examination by the board. For the purpose of examining Major Newgarden the board will meet at Washington Barracks, D. C.

PINKSTON, O. W., First Lieutenant and Assistant Surgeon. Upon being relieved from duty as surgeon of the transport *Sherman* by Assistant Surgeon Mabée, ordered to report in person to the commanding general, Philippines Division, for assignment to duty.

ROCKHILL, E. P., Captain and Assistant Surgeon. Granted thirty days' sick leave of absence.

STARK, ALEXANDER N., Major and Surgeon. Granted three months' leave of absence, to take effect upon his being relieved from duty in the Philippines Division, and authorized to visit China and Japan.

USHER, F. M. C., Captain and Assistant Surgeon. Granted ten days' leave of absence.

WILSON, W. H., Captain and Assistant Surgeon. Ordered to proceed in due season to Fort Porter, N. Y., and report, upon arrival, to the commanding officer for temporary duty as a member of a board of officers to meet on May 1, 1907, for the examination of candidates for admission to the United States Military Academy. Upon completion of this duty ordered to return to Fort Hamilton, N. Y.

Boards of Medical Officers as hereinafter constituted are appointed to meet on April 29, 1907, at the places designated, for the purpose of conducting the preliminary examination of applicants for appointment in the Medical Department of the Army:

At Fort Jay, N. Y.:

Major Charles Richard, surgeon; Captain I. A. Shimer, assistant surgeon; Captain E. R. Whitmore, assistant surgeon.

At Vancouver Barracks, Wash.:

Major W. D. Crosby, surgeon; Captain C. E. B. Flagg, assistant surgeon.

At Columbus Barracks, Ohio:

Major H. I. Raymond, surgeon.

At Fort Monroe, Va.:

Major W. F. Carter, surgeon; Captain C. A. Ragan, assistant surgeon; First Lieutenant L. L. Smith, assistant surgeon.

At Jefferson Barracks, Mo.:

Major A. E. Bradley, surgeon; First Lieutenant W. L. Pyles, assistant surgeon; First Lieutenant W. A. Powell, assistant surgeon.

At Ancon, Canal Zone:

Major C. C. McCulloch, Jr., surgeon; Captain T. C. Lyster, assistant surgeon; Captain G. H. Crabtree, assistant surgeon.

At Madison Barracks, N. Y.:

Major H. M. Hallock, surgeon.

At Fort Sheridan, Ill.:

Major E. L. Munson, surgeon.

At General Hospital, Washington Barracks, D. C.:

Captain D. C. Howard, assistant surgeon; Captain B. K. Ashford, assistant surgeon; First Lieutenant J. B. Hugins, assistant surgeon.

At Fort Leavenworth, Kas.:

Captain L. A. Fuller, assistant surgeon; Captain J. B. Clayton, assistant surgeon; Captain P. S. Halloran, assistant surgeon.

At Fort Porter, N. Y.:

Captain Louis T. Hess, assistant surgeon.

At Fort Reno, Okla.:

Captain B. J. Edger, Jr., assistant surgeon.

At Fort Ethan Allen, Vt.:

Captain C. P. Robbins, assistant surgeon.

At Fort Riley, Kas.:

Captain W. W. Reno, assistant surgeon.

At Fort D. A. Russell, Wyo.:

Captain W. T. Davidson, assistant surgeon.

At Fort Thomas, Ky.:

First Lieutenant L. M. Hathaway, assistant surgeon.

At Fort Rosencrans, Cal.:

First Lieutenant P. W. Huntington, assistant surgeon.

At Fort Snelling, Minn.:

Captain W. D. Webb, assistant surgeon.

At Fort Logan, Colo.:

First Lieutenant W. D. Webb, assistant surgeon.

The board will be governed by instructions from the Surgeon General of the Army, to whom the reports of the boards will be rendered direct.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending April 13, 1907:

HEINER, R. G., Assistant Surgeon. Detached from the Navy Yard, Washington, D. C., on April 15th, and ordered to attend a course of instruction at the Naval Medical School, Washington, D. C.

LANGHORNE, C. D., Surgeon. Detached from duty at the Naval Medical School Hospital, Washington, D. C., and ordered to the Navy Yard, Washington, D. C.

MCGUIGAN, J. H., Pharmacist. Detached from the Marine Barracks, New York, N. Y., and ordered to Washington, D. C., for examination for retirement, and thence home to await orders.

RIGGS, R. E., Passed Assistant Surgeon. Detached from the Naval Station, Port Royal, S. C., and ordered to the Texas.

Births, Marriages, and Deaths.

Married.

CRANEY—EVERSMAN.—In Philadelphia, on Wednesday, April 10th, Dr. Joseph P. Craney and Miss Florence Eversman.

EVANS—EAGAN.—In Philadelphia, on Tuesday, April 9th, Dr. Joseph Spragg Evans and Miss Lillian Eagan.

WELLS—SCOTT.—In Philadelphia, on Thursday, April 11th, Dr. George Harlan Wells and Miss Martha Parr Scott.

Died.

BARNES.—In New York, on Saturday, April 13th, Dr. Justin L. Barnes, aged forty-eight years.

BRAMLETT.—In Campobello, South Carolina, on Wednesday, April 3rd, Dr. J. W. Bramlett.

BUCK.—In St. Louis, Missouri, on Tuesday, April 2nd, Dr. Thomas E. Buck, aged seventy-one years.

BUSH.—In Washington, D. C., on Thursday, April 4th, Dr. William J. Bush, aged thirty-five years.

COMBE.—In Brownsville, Texas, on Sunday, March 31st, Dr. Charles B. Combe, aged seventy-one years.

DE VRIES.—In Washington, D. C., on Saturday, April 6th, Sybilla, daughter of Dr. J. Carlisle De Vries and Mrs. De Vries, aged six years.

DU PAUL.—In Carleton, Michigan, on Sunday, April 7th, Dr. Stanley A. Du Paul, aged forty-eight years.

FAIRFAX.—In Hague, Virginia, on Wednesday, April 3rd, Dr. W. H. Fairfax, aged seventy-two years.

GAREE.—In Sutton, West Virginia, on Wednesday, April 3rd, Dr. Lloyd Garee, aged twenty-eight years.

GAREE.—In Sutton, West Virginia, on Wednesday, April 3rd, Mrs. Elizabeth W. Garee, wife of Dr. Lloyd Garee.

LAWRENCE.—In Brooklyn, N. Y., on Thursday, April 11th, Dr. Jerome D. Lawrence.

MARCH.—In Partridge Island, St. John, New Brunswick, on Wednesday, April 3rd, Dr. John E. March, aged fifty years.

MORRISON.—In Providence, Rhode Island, on Tuesday, April 9th, Dr. William Frank Morrison, aged forty-nine years.

WROTH.—In West Arlington, Virginia, on Wednesday, April 3rd, Dr. W. J. Wroth, aged seventy-seven years.

New York Medical Journal

INCORPORATING THE

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A Weekly Review of Medicine, Established 1843.

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NEW YORK, APRIL 27, 1907.

WHOLE No. 1482.

Original Communications.

THE PHYSICAL PROCESSES OF IMMUNITY AND INFECTION.

By JONATHAN WRIGHT, M. D.,
New York.

V.

Intracellular Electrodynamics

"If the pathologist and the clinician desire to advance in the knowledge of the manner of the different processes of disease, they must have definite conceptions of the general activities within living cells."—Verworn, *Die Biogenhypothese*.

I must now refer to the evidences of electrodynamic forces in the intracellular processes of growth and reproduction.

Manifestly any part of the activities going on within the colloid of cells must bear intimate relations to other intracellular activities. But this is an entirely wrong way of looking at it. The intracellular processes of immunity are so intercalated with the intracellular processes of growth and reproduction that together they form a unit. Influenced by one another they are subordinated to the whole which both as a unit and in all its parts is governed by the fundamental laws of the heredity of matter and by the extracellular environment. It must all be studied together. The visible molar changes of mitosis have their lesson for the molecular changes of heredity, as Weismann recognized in the work of Boveri. We may find them scarcely less suggestive in a study of the mechanical side of immunity. This extracellular environment may be that of a unicellular organism like the amoeba varieties, or it may be that of a unit in a zoogloea mass of microorganisms, or it may be that of a component cell of some pluricellular animal or plant. Whatever it may be, it must be remembered that the external are closely correlated with the internal processes, as we have seen in the formation of spores in bacteria.

The external relationship of the cell involves the physical considerations of immunity as we have hitherto studied it. By means of what is being revealed of the molecular activities of the metallic colloids we have attempted to get some idea of those of protoplasm. When we turn for another sidelight upon the problem to the visible processes of intracellular growth and reproduction we again at once meet with suggestions pointing to the electrodynamic nature of the forces governing them. Even Loeb, despite his professed chemical conceptions in many places, recognizes the suggestiveness of these physical

phenomena. It is true, in the ultimate analysis the gap between the two conceptions is filled up, as it is only our ignorance which has drawn boundary lines on the map of science, but the attempt to ignore the suggestiveness of recently observed facts, which hitherto have been considered as comprised in the territory of physics, arising perhaps out of an unconscious ardor for a purely chemical interpretation of life, has been unfortunate in biology.

All biologists now agree that "life" depends upon the existence of colloidal solutions in the cells. We have seen that the colloid is simply a reservoir of electric energy, and when that is destroyed "life" is destroyed. Having learned this we might reasonably look, even if the appearances did not suggest it, for manifestations of it in the structure of the cell. The very shape of the cell, when free, evidently depends upon these forces. Summing up the tendencies of heredity in cell formation, of the different development of a polyblast in different situations, I suppose, Le Dantec expresses them in the term "morphogenic diastase." It is now supposed that protoplasmic colloids may bear charges of opposite signs, and it is stated that when such colloids¹ meet one another, as in the coagulation of the blood, mutual precipitation occurs.

The astrospheres within and the cell membrane at the periphery probably originate in a species of coagulation of albuminous material. It is said that in plant cells the cytoplasm by itself is unable to form an investing external wall. The cytoplasm must contain a nucleus or it must be in protoplasmic connection with a cell which does contain a nucleus. "The cœnocentrum is a clearly differentiated region of the cytoplasm and is probably the morphological expression of a dynamic centre in the eggs of these fungi. . . . The cœnocentra exert a chemotactic influence upon the nuclei in their vicinity, drawing them towards the mass of granular material in this favored region of the cell, and it is clear they are greatly benefited in this situation, since they increase in size, while the nuclei at the periphery break down."² Is not this force to be closely identified with that of electrodynamics?

Among the many valuable contributions made to science by Verworn I find the following note, now ten years old,³ on the behavior of the proto-

¹ For the most recent review of the work done on colloids and its application in biology, see *Revue scientifique*, 1907, No. 12.

² Bradley Moore Davis, *Studies on the Plant Cell. The American Naturalist*, xxxix, No. 466, p. 734, 1905.

³ *Physiologische Archiv*, No. 62, lvi, 1896.

masses of protoplasmic threads: "When the irritability of a genuine current is not too weak and lasts long enough the protoplasm is collected together in small roll-like spindle formed and spherical masses, and in this shape moves along in the pseudopodia towards the cell body." We



FIG. 1. Photograph of lines of force surrounding an isolated electrified body.

are reminded of this when we read the description of the shapes and movements imparted to liquid crystals apparently by surface tension variations. They creep and move about in the liquid in which they are immersed, set in motion by some disturbance in the molecular equilibrium between their constituent elements and their environment.⁴ In certain mitotic changes brought about by parthenogenesis the centrosome and spindle formation and the chromosomes in the nucleus are scattered and irregular. This often occurring would point to an insufficiency in the energy evolved during parthenogenesis, because of an absence of that heterogeneity which tells in so many ways in biology for the vigor of the offspring. There is the same phenomenon observable in the small amount of electricity engendered between substances nearly homogeneous.

When, on the other hand, by the conjugation of cells, energy is imparted to the cœnocentrum and the astrospheres they are thrown in division into forms which strikingly resemble the figures obtained by photographing, by means of radioactivity, the lines of force developed around an isolated electrified body. Advancing this close to another electrified body bearing a charge of electricity of the same sign, we have a photograph of the lines of force of repulsion which bears such a resemblance to the astrospheres and mitotic bodies of a cell in the process of division that the analogy, under any circumstances suggestive, falls little short of convincing the observer of the identity of the forces which produce them.

I utilize figures from Le Bon's most recent article upon Electric Phenomena and Their Nature in the *Revue scientifique*, vi, No. 24, December 15, 1906, and from Wilson's *The Cell in Development and Inheritance*, p. 107, Fig. 52D—one of the later stages of mitosis in the egg of the sea urchin. Many other phases of mitotic division, both in the animal cell and in the plant cell, exhibit similar resemblances to electromagnetic spectra.

We are able to obtain a photograph of these lines of force in the electric spectrum by means of the luminous particles of radiant matter which are strung along them. We may conclude we are able to see under the microscope the differentiated coagulated protoplasmic bits which in the activated cell are strung along the lines of force.

In the first of this series of papers I have dwelt upon the important part played by the cilia in the process of defense on the surface of mucous membranes, and I have alluded to the part it plays in food taking, both of these functions involving movement imparted to the cell itself, or to its environment. When we learn that there is an analogy of development with the flagellum of the spermatozoon we realize the part it plays in fecundation; when we remember that growth from food taking is in itself a stimulus to the fission of cells, we receive another hint of the close interrelationship of vital forces upon which I have insisted.

There seems to be proof that the cilia of certain highly organized zoospores are connected through the blepharoplast with the nucleus. In



FIG. 2. Photograph of repulsions of lines of force between two bodies charged with electricity of the same sign.

other words, these structures, through the blepharoplast and the centrosome and the kinoplasm in the plant cell, are in some way structurally connected with that part of the cellular protoplasm which exhibits the clearest manifestation of intracellular energy. From the plant cell we may derive at least the suggestion that in the ani-

mal cell also the activities of locomotion vitally depend on the nucleus. From what has preceded it seems safe to assume, as has been remarked for the kinoplasm of the plant cell, that the forms of mitosis in all cells are dependent upon dynamic activities. Through the cilia, through the external membrane which in plants is formed from the kinoplasm, itself a derivative of the spindles of the centrosome, we see the contact of the internal energy of the cell with its environment.

In the observations of von Dungern we have seen that the antibodies may easily be obtained from ciliated epithelium, and di Rossi⁶ has most recently declared that the cilia of ciliated bacteria are more capable of producing agglutinin in the serum of animals than other parts of such bacteria, though such serum does not alter either the form, number, or arrangement of the cilia.

It is in the middle piece of the flagellum of the

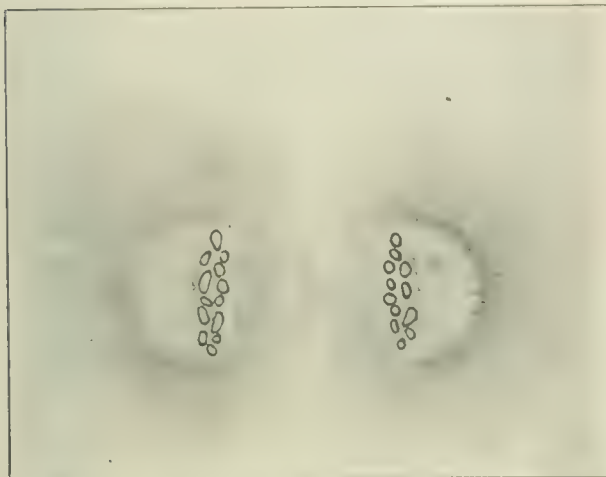


FIG. 3. The later stages of mitosis in the egg of the sea urchin. (Of about several others from the same illustration equally suggestive.)

spermatozoon, and not in the head nor the tail pieces, that is supposed to reside the energy which brings about the changes in the egg on fecundation. It seems very probable that the figures which then become apparent are due to an albuminous coagulation, familiar to us in the effects of certain forms of energy upon albuminous matter, such as heat upon the comestible egg and the electricity of a thunderstorm on milk.

In the interesting work of Fischer and Ostwald⁷ on fertilization, reference is made to the fact that coagulation of colloid substances such as the yolk of an egg is brought about only by those salts and acids, which bear an electric charge on their ions opposite to that of the colloid. One colloid may be used to coagulate another colloid, but they must be charged with electricity of opposite signs, i. e., the collisions of matter must be collisions of heterogeneous matter. They call attention to the fact that in the formation of the astrospheres there is a clear zone around the middle piece of the spermatozoon when it enters the egg.

Before fertilization the protoplasm of the egg

is all or in a fluid or "sol" condition, or in a necessarily homogeneous solution, the "sol" condition of the egg protoplasm. The astrospheres formed after the fertilization of the egg in marine animals may be squeezed out as solid plugs. Subsequently coagulation (rigidity of lines of force?) spreads from these as centres. Dynamic influences, electrolytic salts, for instance, as in the experiments upon artificial parthenogenesis, will in certain varieties of lower organisms set the process going in the same manner, though on the whole not efficiently.

How any one with such facts (for there are many more of less significance that have come to light), before him can refuse to entertain the belief that the intracellular force of mitosis is one of electrodynamics, it is difficult to understand.

Whether we can interpret food assimilation by the cell by such a conception is a matter of more doubt, but the attempt has been made.⁸ "The first fundamental characteristic of every cell is that by virtue of its tension it can attract material from its environment" for its nutrition. "Every kind of cell has its own biomechanical tension, and this can be recognized and measured not by physical, but by biomechanical methods." Verworn's biogen theory involves a consideration of the surface tension of naked protoplasm. The weakening of this, due to the assimilation of oxygen, i. e., oxidation, causes in unicellular animals a protrusion of pseudopodia, this reaction depending, he supposes, on the greater "irritability" (whatever that may be) conferred on the protoplasm by its combination with oxygen. Loeb insists that there exists no proof of the electrodynamic nature of these phenomena because they cannot be demonstrated artificially to be controlled by the electric current. Benedikt ignores this when he says of the cell:

Its power to transmit a charge as well as the charge itself is dependent on special relations. Cells, moreover, have the power, upon external stimulus, to respond to certain peculiar activities, by means of which certain kinds of material and certain kinds of tension are lost or rather changed into other kinds. This activity represents the working power of the cell. The material which through this has been rendered foreign and transformed into material of lower organization is cast out. The injury to its own existence, caused by work, is an irritation—a negative tension, which seems a renewed attraction for material and for tension from the environment and a metamorphosis of this into its own material and its own tension.

I must confess this theoretical exposition of cell processes is so full of a certain sort of fog-giness of thought, when it leaves the hard and fast ground of fact for hypothesis, that I am only disposed to transcribe it here as an example of the tendency even in Germany to get away from the chemical conceptions and the symbolism of Ehrlich. However, it may be that this is a legitimate use of the word tension (*Spannung*). At any rate, Benedikt's conception of the nerves as the channels whereby the tension of the cells is increased, ions of certain salts being carried thither by electric currents has received a material support

⁶ Benedikt, *Die elektrische Deutung der Medizin und Biologie*, 1906.

⁷ Bradley Moore Davis, *loc. cit.*

⁸ *Centralblatt für Bakteriologie*, XI, part 4.

⁸ *Journal of the American Medical Association*, February 10, 1906.

in the experimental work of Loeb.⁹ Indeed, this author continually advocating the chemical nature of vital processes, furnishes a not unimportant part of the proof of the electrodynamic nature of the intracellular changes in mitosis.¹⁰

This position of the astrospheres or centrosome (i. e., their common diameter lying in the long diameter of the cell) becomes comprehensible on the assumption that these organs not only repel each other, but are also repelled by the external surface of the nuclei and the inner surface of the cell limit. The cell contents being liquid and its size microscopic, it is quite possible that the repelling forces in this case are capillary forces (i. e., due to surface tension). It is known that living organisms as, for instance, the electric fishes produce electric energy, but in spite of the most diligent search nobody has yet been able to prove that the electric energy thus produced plays any rôle in an essential life phenomenon, though this may be the case.

Later, he admits, that "all life phenomena are accompanied by electrical phenomena." I presume Loeb advances this merely as a suggestion, but I fancy it would take quite an excursion into psychological science to attempt to determine what "proof" is, and in the ultimate analysis we should have to admit that we could not "prove" anything. Since "force," since "energy," is not anything we can see even under the microscope, since in fact we never see or smell or taste it, but know it only by its manifestations, the only thing possible is to array the circumstantial evidence in a convincing form by taking note of its manifestations, and leave it to various minds to decide whether it is "proof" or not. Various answers doubtless will be returned, but for my part I am not insensible to circumstantial evidence, and I refuse absolutely to accept the soundness of the doctrine which rules it out. In fact, so far as I have observed, the charge of "jumping at conclusions" is usually in science brought by some one whose conclusions are not "jumped at" by anybody.

Picard¹¹ remarks: "One of the most striking results of the experiments of Vöchting consists in the fact that the cell possesses a polarity, I mean thereby a top and bottom, a right side and a left side, which differ from one another from the point of view of the ease with which they unite with one another. The bottom of one cell normally unites with the top of another, the right side with the left."¹² If then we are forced to the tentative conclusion that the energy within the cell, at least in its visible manifestations, is in the form of electro-dynamics, we are in turn forced on to the surmise, as Le Dantec says,¹³ that "the phenomena which go on in its interior are the continuation of the other phenomena which go on outside." This, then, is the relationship which I conceive exists between the epithelial cell on the surface of the tonsil and the living bacterium lying against it, and I have found in Le Dantec's words the echo of my own:¹⁴ "Evi-

dently in the general scheme of evolution we must conclude that intracellular activities are correlated with intercellular forces."

In the preceding paper I tried to deal with the as yet very incomplete knowledge of the nature of colloids. I tried to bring into prominence the view that the energy existing between small masses visible only by ultramicroscopy is the result of external influences which bring the electrodynamic forces of atoms and molecules to the surfaces of these larger aggregates of matter—an ever evolving synthesis of matter into larger aggregates. The intracellular activities of mitosis and metabolism in the same way are to be thought of as extended to the surface of cells and there to interact with the surface forces of contiguous cells.

Now this brings us to the consideration of the nature of tropisms, the response which a cell makes to a stimulus, which includes the influence exerted by one bit of protoplasmic colloid alive with electric energy upon another bit of protoplasmic colloid, also alive, with which it is in contact. It is plain to us all that chemotaxis with which the studies in immunity have made us familiar are phenomena identical in principle with the tropisms exhibited by the protoplasm of monocellular organisms. The reaction of amœba without the body are closely correlated with the physical reactions of amœboid cells within the body. I have had occasion to quote extensively from the contributions of LeDuc to the literature of the formation of the so called artificial cells. I have insisted that inorganic matter has certain acquirements of heredity of which it is necessary to take account in the study of organic matter. The metallic colloids acquire habits from past experience just as living colloids do.

While Verworn long ago in his study of the protozoa advanced the same physical conceptions as to living matter, it will be more instructive to quote again from LeDuc's article.¹⁵ His experiments with liquid currents of different densities and artificially colored, and with globules of blood "show that the differences of osmotic pressure are a powerful cause, hitherto unrecognized (?) of tropism and 'tactism.' This cause may be more effective than the influences which are usually studied, and which often work through its intervention. In electrolysis, for instance, there are produced around each electrode differences of osmotic pressure, of which no note has been taken in the study of galvanotaxis and of cataphoresis. All experiments on tropism and 'tactism' in liquids should be repeated with a consideration of what we may call 'osmotropism' and 'osmotaxis.'"

The subject is full of difficulties, and analogies are apt to be misleading. I can scarcely venture further into the field of tropisms in the monocellular organisms, full of interest and instruction though it is, because as yet the facts elicited are too few to lend themselves to general application in the metazoa. However much we may learn from the study of simpler reactions, we must beware how we apply such knowledge to more complex processes. Verworn, indeed, pointed out¹⁶ that the electromagnetic phenomena of protoplasm must be studied on monocellular organisms, and in the ten

⁹ "The influence of the electric field on the cell, which, seem to me, is the most important effect of the galvanic current." *University of California Publications*, December 30, 1905.

¹⁰ *Journal of General Physiology*, 1906.

¹¹ "I have observed that the growing of the granitiform crystals of metallic elements, such as uric acid, turning the course of the crystal growth, right and one to the left." *St. Louis Medical Review*, August and September, 1906.

¹² *Les Forces Vitales*.

¹³ *New York Medical Journal*, January 20, 1906.

¹⁴ *Les Lois de la biogenèse. Revue scientifique*, v, 8, 1906.

¹⁵ *Pflüger's Archiv*, LXII, 1896.

¹⁶ *Pflüger's Archiv*, LXII, 1896.

years that have since elapsed many valuable monographs have appeared, but Verworn added that the higher you go in the metazoa differentiation of structure quickly renders the results of such study uncertain in their application. It is the general principles which underlie such complexities that I have attempted to bring into prominence in these remarks on the phenomena exhibited by living protoplasm.

44 WEST FORTY-NINTH STREET.

THE MILK PROBLEM.*

By HENRY G. PIFFARD, M. D., LL. D.,
New York.

The recent introduction of a resolution in the city Board of Aldermen requiring pasteurization of the general milk supply, and the introduction of a bill of similar import in our State legislature, has led to some discussion in the public press and among physicians privately and at society gatherings. The general trend of editorial opinion of the lay press has been in favor of the proposition; while with very few exceptions the weight of professional opinion has been strongly against it. It is alleged, on the one hand, that many epidemics of scarlet fever and diphtheria have been traceable to the use of infected milk. This is a fact beyond question. It is also stated that tuberculosis has frequently originated from the ingestion of milk from tuberculous cows. How far this is true I cannot say. A scarlatinal or a diphtheritic attack promptly follows (except in those who are immune) contact with the pathogenic germs; and if a considerable number of cases appear within a few days along a given milk route, there is little difficulty in tracing the trouble to its source.

Not so, however, as regards tuberculosis. Months may elapse after the possible infection before the disease has progressed to a point that will enable it to be readily recognized.¹ So far as I am aware, no epidemics of tuberculosis have been traced to this cause. It is true that in certain isolated cases there has been a strong suspicion, and perhaps presumption, in favor of a milk infection, but without absolute proof.

Raw milk has also been incriminated as a frequent cause of acute intestinal disturbances of infants, and I have no doubt with ample justification.

It is also asserted that milk as commonly supplied in this city is contaminated with various miscellaneous bacteria, existing in vast numbers and tending to the deterioration of the health of those who ingest them. No definite clinical symptoms or pathological changes are specified.

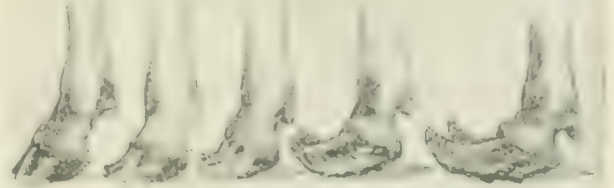
These, then, are the arguments used by those who advocate general wholesale pasteurization of the milk supply of this city.

It is within the memory of most of us, I believe, that the ostensible promoter of the present legislation was a strong advocate of *sterilized* milk and that after extended clinical trials it fell into disfavor with most of those who observed its effects. In order, however, that there may be no misunderstanding as to the meaning of the words we use, I

here append their official signification as defined by the United States Department of Agriculture.

Pasteurized milk is milk that has been heated below boiling, but sufficiently to kill most of the active organisms present, and immediately cooled to fifty degrees F., or lower, to retard the development of their spores.

Sterilized milk is milk that has been heated at the



(From Frank Leslie's Weekly, June 5, 1858.)

temperature of boiling water or higher for a length of time sufficient to kill all organisms present.

I believe no one in this generation will recommend the general sterilization of milk for the use of either adults, young children, or infants; and the practical question before us is whether wholesale pasteurization is the best remedy for the evils that admittedly exist, and whether such pasteurization is entirely free from inherent evils, believed by many to be inseparable from it. Every municipality has suffered to a greater or less degree in the matter of its milk supply, due, firstly, to the cupidity or dishonesty of the producer, often accentuated by the distributor; secondly, to the occasional accidental introduction of pathogenic elements; and, thirdly, to the use of milk which was not in a suitable condition for alimentary purposes.



(From Frank Leslie's Weekly, June 19, 1858.)

About fifty years ago New York was startled by certain revelations that appeared in Frank Leslie's weekly publication. Briefly stated, he or his representatives discovered that just across the East River a remarkable instance of what now would be termed a "community of interest" existed between a distillery on the one hand and a milk factory on the other. Near the distillery was a large barn containing a considerable number of alleged cows so closely stabled together that there was barely room for the milker and his pail between them. Here they were kept day and night, with floor covered

* Read at a meeting of the Alumni Association of the City (Charity) Hospital, April 10, 1907.

¹ According to von Behring, years may elapse.

and filth in which they stood, when they could, let lock deep in their own droppings, and here they remained until they died. They did not lack, however, for food, as that was plentifully supplied, consisting almost wholly of refuse from the distillery. This was freely poured into one end of the creature, and in due time extracted as "milk" near the other end. In the current nomenclature of that day the product was called "swill milk." But this was not all; the monotonous diet apparently did not conduce to the health of the wretched cows. Their hair fell off in patches, the hoofs rotted, the tails dropped off, and falling mingled with the filth below; and a new phrase was added to the language "Stump tail milk."

When one of the cows when they were no longer able to give milk, I do not know: It was before the days of the festive "frankfurter."

The startlingly disgusting conditions that were described at the time have but once been equaled so far as my knowledge goes, until Upton Sinclair in *The Jungle* opened our eyes to the state of affairs existing in the slaughter houses of Chicago.²

I need hardly say that Leslie's exposure of this method of milk production led to its speedy discontinuance. From that time on for a number of years the milk problem was in comparative abeyance until the Department of Health, under the headship of Professor C. F. Chandler, got busy with the matter.

The principal point at issue was the determination of how much a quart of "milk" was tributary to the cow, and how much to the pump. The lactometer was selected by the department as the arbiter of the question. The late Professor Ogden Doremus, however, questioned the utility of sole dependence on this instrument, in which he was undoubtedly right from both an academic and practical standpoint; and it was not long before the "honest farmer" learned how to circumvent the device. It was only necessary to skim off a portion of the cream which raised the specific gravity, and then lower it again by the addition of water, so that the lactometer reading would agree with that of milk that had not been tampered with. If the standard of milk requires three per cent. butter fat, it is an easy matter for the farmer whose cows average four per cent. to skim one gallon and add the skim to three gallons of pure milk. The lactometer here fails us, and chemistry must be relied on to detect the deceit. I am of opinion that this form of fraud is practised to a considerable extent at the present time, and is hardly detectable by an ordinary inspection.

During the past few years another element has become of importance as a complicating factor in the milk problem. I allude to its bacterial relations.

Milk is well known to be one of the best culture mediums for a large number of bacterial species. I am not prepared to say how many of these have been satisfactorily identified, and how many yet remain to be isolated and found to be distinct in their behavior and biological and pathogenic relations. They may be classified, however, in several ways:

(1) As to their origin; (2) morphology, cultural behavior, and chemical reactions; and (3) their pathogenesis.

1a. Very many suppose that milk is practically sterile when drawn from the cow. Such is far from being the fact. Bacteria have not been found, I believe, in the galactogenous cells, but usually have been found in the tubes leading down to the cistern which lies just above the teats. In the cistern itself they are more abundant, and in the teats, extremely luxuriant. In 1895 Professor Veranus A. Moore examined milk drawn under strict bacteriological conditions from nine different cows, and found and isolated apparently twenty different species of bacteria, of which three were streptococci, thirteen micrococci, and four bacilli.

1b. Bacteria reaching the milk after it leaves the teats becomes infected by bacteria from the air, from faecal filth, from the fodder, from the unclean persons of the milkers and their clothes, and from unclean vessels in which the milk is received and cared for.

1c. Specific pathogenic bacteria as of tuberculosis, scarlet fever, diphtheria, and typhoid.

2a. Morphologically there may be micrococci, streptococci (rarely staphylococci), bacilli, and spirilla.

2b. Biologically there are aerobic and anaerobic, acidifying, and peptonizing and alkalinizing species.

3a. Concerning their pathogenic relations, we have positive knowledge concerning but a few of the large number of species which are known to exist. Besides those already mentioned that are the result of human infection, the peptonizing or liquifying bacteria are the ones that are more under suspicion. It is quite possible that some of these may be the chief causative agent of æstival diarrhœa of infants. Some of the peptonizing bacteria, however, are certainly not pathogenic, for it is on them that we depend for the fine flavors and other desirable features in our soft cheeses of the Brie and Camembert types.

3b. Of the acidifying species, the most prominent is the anaerobic *b. acidi lactici*.³ From whatever standpoint we consider this group of microorganisms their importance is second to none. In freshly drawn milk their number, as compared with other bacteria, may be almost insignificant. They gradually increase, however, but not so rapidly as other forms, especially the peptonizing ones. Later they become more prolific until they equal and surpass them both in number and influence; and finally succeed in inhibiting in great measure the further development of most of the other forms. Where they have advanced to this stage their presence is manifest to the ordinary man by the sourness of the milk, and its tendency to curdle; to the bacteriologist by the pinkish halo surrounding the subsurface colonies in a litmus culture medium; and to the chemist by the presence of lactic acid.

The casein of milk does not exist in a free state, and is not coagulable by heat. At first it is in combination with calcium, and so remains until the advent of the lactic acid, which splits the earlier combination and results in casein lactate, coagulable by

² There is another acidifying bacterium of rather rare occurrence that is both aerobic and anaerobic. It is not pathogenic to man, except to the pocket books of the cheesemakers.

heat. It is this action that gives us the cottage cheese of our farmers, and the delicious *Schmierkäse* of the German *Haushalt*. I have yet to learn that these articles of diet are pathogenic or in any way prejudicial to health, yet thousands and thousands of pounds of this valuable nutrient while in an embryonic or formative state, are wantonly destroyed under the orders of our city Department of Health. Every can of milk dumped into the sewers means the loss of two days' full protein ration. To this must be added the hydrocarbon and carbohydrate waste. The old adage says "Wilful waste makes woeful want."

The anaerobic lactic acid bacteria from a sanitary standpoint are prophylactic, and their early occurrence should be encouraged rather than the reverse.

Milk coming from a distance of three or four hundred miles; milk from twenty-four to forty-eight hours from cow to consumer; milk produced under filthy and unsanitary conditions, is certainly not an ideal aliment for either infant or adult, yet much of the milk sold in this city is objectionable on one or all of these grounds. Surely such a state of affairs ought to be changed, and I think can be. Two remedies have of late been brought into prominent notice; on the one hand, pasteurization of the general milk supply and on the other a very large increase in the force of inspectors under the control of the city Department of Health, such an increase as will permit of the frequent inspection of all dairy farms in the State that contribute to the city milk supply. Neither plan appeals to me as fully meeting the situation.

That pasteurized milk has proved of great service in the treatment of some of the intestinal derangements of infants during the summer months in New York and other large cities admits, I believe, of no question. That it should be used for the systematic feeding of infants or young children, that is, constitute the whole or major part of their food, I do not believe.

My own professional work has been confined for many years to office and consultation practice, and I therefore have not had the opportunity to observe to any great extent the effects of pasteurized feeding among infants. I gather from my reading, however, that it has proved disappointing to many of those who were at first its friends, and the following extracts appear to represent the general sentiments. It will be noted that the views stated do not emanate from any one locality:

STERILIZED MODIFIED MILK AS A CAUSE OF INFANTILE SCURVY.—This disease is of rather rare occurrence in France. J. Comby (*Bulletin des épidémiologistes de la Société française des hygiénistes de Paris*, January 17, 1907) asserts that it can be traced almost exclusively to the food of the child. Both commercial sterilized milk and proprietary foods have been incriminated. The treatment is to change the diet to fresh milk, simply boiled, with three teaspoonfuls of orange juice daily, and a purée of potatoes. He does not advise against the use of extemporaneously sterilized fresh milk, but against the commercial, modified sterilized milk, and milk foods, when used to nourish the child exclusively. *New York Medical Journal*, March 9, 1907.

FRESH MILK SUPPLY.—A deputation representing the Infants' Health Society waited upon the president of

the local government board on April 1, 1907, to present to the report that he appended a statement in favor of legalizing the action of local authorities in establishing depots for the supply of sterilized milk for infants. Thomas Barber, and that sterilization is the simplest and best process; once sterilized it was no longer possible to tell the goodness of the original supply. Children fed on sterilized milk developed scurvy and rickets, and serious cases of zymotic diarrhoea had occurred in districts even where the milk supply was so treated. Experience had shown that if fresh milk was cooled down immediately after it was drawn, and put into vessels properly sterilized, and kept cool in transit, the problem would be solved.—Editorial, *British Medical Journal*, January 26, 1907.

NEED OF MILK EXTERIOR.—It is far better to take raw, dirt free, and therefore germ free milk than to take a dirty milk and destroy its vitality in endeavoring to cleanse it by centrifugal force or by pasteurization. Both processes are undesirable. The latter process does not destroy the dangerous butyric acid and peptonizing bacteria, but it does affect the lactic acid group, which, when active, serve to check the more dangerous bacteria.—C. W. Townsend, M. D., of Boston, in the *Journal of the American Medical Association*, February 16, 1907.

STERILIZATION AND PASTEURIZATION.—That the average milk is unclean and many times unfit for food, especially for infants, has long been known and has given rise to its heating or cooking in order to lessen its unfitness and lengthen its keeping quality. This process we call sterilization. A few years later it was found that this process was fraught with danger and that practically a lower degree of heat and a shorter period of heating served as well. Pasteurization was then the vogue for a time. Now it is safe to estimate "that all forms of sterilization do impair, although possibly to a slight degree, the nutritive properties" of milk. That commercially pasteurized milk is more unsafe and less to be trusted than ordinary milk is abundantly proven by the investigations of Pennington and McClintock, of Philadelphia. What is true in Philadelphia is probably true of pasteurized milk sold in other cities.—C. W. M. Brown, M. D., of Elmira, in the *Journal of the American Medical Association*, February 16, 1907.

If now pasteurization be not the proper remedy and the quality of the existing milk supply not satisfactory, the question is: What can be done to make it more so?

The regulation of the milk service is under the control of the city Board of Health, and has been for many years, and if the results are not satisfactory, it certainly suggests the thought that possibly the working methods of the department could be improved on; and such I think is the case.

The present basic regulations have been in force for twenty years or more, amended from time to time as the wisdom of the department deemed necessary. Within a few weeks even new instructions have been formulated for the guidance of the dairymen, that in my judgment have not been altogether wise or calculated to secure the desired result.

I think that in this matter the slate should be wiped clean and new methods based on our present better knowledge of dairying conditions be put in force.

Specifically, I would recommend:

1. That the present classification and nomenclature of the department should give place to that adopted by the national authorities. This would raise the

milk fat content from 3 per cent. to 3.25 per cent. As the average fat content for New York State cows is nearly 3.7 per cent., there would be less temptation to part skimming. I would make an exception, however, in favor of milk from Holstein cows and permit the sale of their milk with a minimum requirement of 3 per cent. of fat. It is well known that the milk from this breed does not contain as much fat as the milk from the other standard breeds, or even from good "grades." There are, however, other qualities in this milk that make it especially desirable for infant feeding, and hence the discrimination in its favor.⁴

2. That the sale of skimmed milk be permitted under proper restrictions as to labeling, etc. There would not be a very large influx of this, as most intelligent farmers recognize its home value, as a feeding stuff for calves, pigs, poultry, etc., to say nothing of its manurial value in the nitrogen retained on the farm. Some of it, however, they will be willing to sell, and we should be thankful to receive all that they are willing to give up.

Gilbert (*loc. cit.*) makes a strong plea for the human utilization of skimmed milk. The United States Department of Agriculture also calls attention to its food value (*Farmer's Bulletin*, No. 74, 1898) in the following terms:

The ingredient of our food which costs the most, has the greatest physiological value, and is most apt to be lacking in ordinary dietaries, is protein. Skim milk has nearly all the protein of the whole milk. By the removal of the fat in the cream it loses half its fuel value, but practically none of its protein. What is left has all the value of the whole milk for building and repairing of tissue, for the making of blood and muscle and bone, and half the value of whole milk for supplying heat and muscular power. When these facts are fairly understood, skim milk will doubtless be more widely utilized. The ways in which a skilful cook can utilize skim milk in cooking are almost endless, and the protein thus added to the daily ration is of the utmost importance.

Some time ago I discussed this matter with one of the officials of the Health Department. His reply in substance was as follows: "We officially recognize but one grade of milk and we have trouble enough with that—if we had more grades to consider I don't know where we would be."

3. The department should recognize the value of sour milk, whole and skimmed, both as to its nutrient and remedial value. I allude to the matter here as in a *Circular of Information*, issued by the Health Department about two years ago, I find statements that are both inaccurate and misleading:

"Bacteria are among the smallest of all living things. They can only be seen when magnified by the microscope many thousand times." This will certainly surprise the bacteriological worker who thinks he can see them when amplified but a few hundred diameters.

The circular then goes on to say:

As bacteria increase in numbers, they gather nourishment from the milk and other substances in which they develop, and like other higher forms of life, transform what they take into their bodies into useless or poisonous products. They thus both rob the food of

its nutritious substances and add others to it which are more or less poisonous. When bacteria grow in living things, whether they be men, animals, or plants, they excite changes in them which we know as disease. The bacteria which grow in dead things cause them to ferment, rot, or putrefy. Thus milk becomes sour through the change of its milk sugar into acid, produced by bacteria. But long before the milk becomes sour to the taste, it may contain enormous numbers of bacteria and has already become unwholesome and perhaps dangerous, when employed for food, especially for young children.

This is certainly a pretty severe indictment against "sour milk." Let us see what can be said on the other side of the question. For nearly sixty years I have been practically familiar with sour milk (including whole milk, skimmed milk, and butter milk). It was the favorite beverage in the hay and harvest fields of my youth, and for the past twenty-five years or more I have frequently prescribed it for patients and to their apparent advantage. For more than two years I have prepared sour milk for home consumption by adding a bacterial culture to the milk. This was prepared at my request by a manufacturer of bacterial products and furnished in tablet form. In addition to this, Professor H. W. Conn has been good enough to spare me from his private laboratory a small quantity of a liquid culture of lactic bacteria. This when introduced into whole milk works fully as well, if not better, than the tablets.

In a recent article, Dr. Strauch (*Medical Record*, March 30, 1907) details the satisfactory results of his treatment of infantile diarrhoea by means of butter milk. It is an exceedingly valuable contribution to the subject.

As the recent agitation concerning pasteurized milk in this city was the exciting cause of the present paper, I will quote a little at length from the writings of the present head of the Pasteur Institute of Paris:

In the investigation of the factors that hinder putrefaction it has been noticed that milk putrefies with considerable difficulty, whereas meat preserved under the same conditions decomposes very readily. Investigators have attributed the stability of milk to the presence of casein or of milk sugar. However, investigations recently made by Bienstock and confirmed by Tissier and Martelly have proved the existence of certain microbes that sour milk, *i. e.*, cause the formation of lactic acid, and which are antagonistic to the microbes of putrefaction. The latter multiply only in an alkaline medium. The lactic acid microbes produce large quantities of acid and so hinder the multiplication of the organisms of putrefaction. . . . Such facts explain how it is that lactic acid frequently stops some cases of diarrhoea, and why treatment with lactic acid is so useful in maladies associated with putrefaction of the intestinal contents. It makes intelligible, moreover, the medicinal value of fermented milk.

Rovighi, an Italian physician, drank daily a litre and a half of kephir, a preparation made by subjecting milk to the lactic acid and alcoholic fermentations. He found that in a few days the products of intestinal putrefaction in his urine either disappeared or were greatly reduced.

The presence of a number of the lactic acid bacteria is inimical to the growth of the bacteria of putrefaction, and so is of great service to the organism. (Metchnikoff, *The Nature of Man*, 1903.) The same writer in a later contribution (1906) says:

⁴ *Record*, October 27, 1906, and *Record*, March 23, 1907.

Among the useful bacteria the place of honor should be reserved to the lactic bacilli. They produce lactic acid and thus prevent the development of butyric and putrefactive ferments which we should regard as some of our redoubtable enemies. It has been shown by an extensive series of experiments, which I cannot here treat of in detail, that certain lactic ferments easily accustom themselves to live in our intestines, and thus produce a beneficial influence. They prevent putrefaction and thus diminish the excretion of sulphonic acid esthers. The same ferments help to regulate the functions of our intestines and kidneys, rendering valuable service to the entire body.

Professor H. W. Conn, writing in *The Country Gentleman*, March 21, 1907, says:

Sour milk is healthful, and the presence of lactic bacteria is not in the slightest degree harmful to those using the milk; other kinds of bacteria, however, are not harmless, and many of them are the cause of diseases of one kind or another. If the lactic germs multiply rapidly, the other germs grow scarcely at all; hence the lactic bacteria protect the milk from the growth of other species which would be more apt to produce trouble and harm.

Having now presented the official statements of the Department of Health relative to the injuriousness of sour milk, and also certain views in opposition thereto, I leave the reader to choose between them. I think, however, that I have justified my third proposition that the department should officially recognize buttermilk and sour milk and prescribe suitable regulations for their sale in this city.

In the *Circular of Information* already noted I find the following sentence: "The bacteria or germs which cause the various infectious diseases, such as typhoid fever, scarlet fever, diphtheria, consumption, etc., readily live and multiply in milk." How far this may be true I do not know, but my reading has led me to suppose that the germ of consumption at least was very difficult to cultivate and especially difficult, if not impossible, in milk as the culture medium.

If the mere presence of bacteria was to be feared and an excess beyond 50,000 or 100,000 per c.c. to be dreaded, then *a fortiori* butter should be placed under the ban, as 99 per cent. of it is made from sour cream containing on the average 500,000,000 per c.c. (Conn).

4. The Department of Health should amend its vocabulary and use words in their ordinary common sense and dictionary meanings. I refer especially to the word *adulterate*.⁵

Under the designation "adulterated milk" the sanitary code designates:

"First, milk containing more than eighty-eight per centum of water or fluids.

"Second, milk containing less than twelve per centum of milk solids." This second sentence is pleonastic and unnecessary, being simply a restatement of the first proposition.

"Third, milk containing less than three per centum of fats."

These three clauses will exclude a certain proportion of otherwise good Holstein milk,⁶ which by the

small size of its fat globules, less than half the size of the Jersey globules (Gilbert), commends itself to the absorptive epithelium of the infantile intestine. In exceptional instances the fat contents of Holstein milk will approach 4 per cent. This, taken with the large milk yield, has secured the world's fat record to a cow of their breed.⁷

"Fourth, milk the temperature of which is lower than 50° Fahrenheit."

I do not find in the *Code* any specific direction as to how such milk is to be dealt with, but am informed that large quantities are dumped into the sewers. If for good and sufficient reason such milk in its existing state is not suitable for human alimentation, it or some of its constituents can be made so without such economic waste. It is only necessary to permit it to thoroughly sour and then sepa-



rate the casein and entangled fat by heat. The product can then be disposed of at a low price, much lower, in fact, than the same food elements cost in other forms. Furthermore, the product would be preferable to that from animal flesh, as it would be comparatively free from contamination with xanthin bases, and the consumer would have a less quantity of exogenous purins to deal with.

5. The most important feature in connection with our milk supply lies in cleanliness, purity, and sanitary surroundings at the place of production, and I conceive that this can be secured only through dissemination among the milk producers of correct scientific information unaccompanied by "scare heads" or exaggerated statements, together with systematic inspection of the dairy farms. The in-

⁵ "To make impure by the admixture of other or baser ingredients; corrupt; render counterfeit." n. "The act of adulterating or corrupting by the admixture of foreign or baser elements, especially for fraudulent purposes." *Standard Dictionary*.

⁶ According to analyses made at the State Experiment Station through a series of years, the average water content of Holstein milk was found to be 88.2 per cent.

⁷ "Colantha J. Johanna" in thirteen days gave 5,520 pounds of milk, averaging 3.93 per cent. butter fat. (*K. D. F.*, April 1, 1907.)

⁸ This seems to me a rather strained use of the word adulteration. The only element that it suggests is "hot air."

spectors should be selected by the State Department of Agriculture; be instructed by the department; and do their work under its direction. In other words, the initial inspection should be a State and not a city function. I believe that better qualified men could be obtained as inspectors; the work would be more thoroughly done and at very much less expense than if undertaken by the city. Besides that, all the cities in the State would be benefited and not New York alone. How the dairies outside the State should be dealt with is a question I do not enter into here.

The accompanying illustration, from a photograph made by the writer in August, 1906, sufficiently emphasizes the need of primary inspections and requires no comment. To borrow the phraseology of our legal friends: *Res ipsa loquitur*.

6. The milk borne epidemics of scarlet fever, diphtheria, and typhoid can be prevented or rendered less frequent, I believe, by State legislation alone. Improper contact of those liable to infect the milk should be classed as a felony, and if deaths result from wilful negligence in this respect, the crime should be regarded as partaking of one of the degrees of manslaughter.

I regret that neither time nor space at command will permit of the discussion of certain other questions akin to the matters here considered.

256 WEST FIFTY-SEVENTH STREET.

BURSTING FRACTURE AND COMPOUND FRACTURE OF THE CRANIAL VAULT, WITH CASES.

By J. SHERMAN WIGHT, B. S., M. D.,
Brooklyn.

The following facts are important and should be understood at the outset. The skull is the superior expansion of the vertebral column and for description may be divided into the vault and the base. Ossification takes place in membrane and is not completed until the first or second year. An arrest in the ossifying process may give rise to deficiencies, gaps, or fissures, which are of medicolegal importance, as they may be mistaken for fractures. Fissures extend from the margin toward the centre of the bone, which gaps are found anywhere from the middle to the edges. The young and the aged have no distinction of the tables of the skull as the diploe which separates the two tables is an affair of middle age, develops slowly, and disappears after the same fashion, sometimes to such an extent as to leave the skull of almost paper like thinness.

The skull is elastic but its degree in different skulls is highly variable. On the average the adult skull can be reduced 15 mm. in its lateral diameter before it breaks, while the skull of a twelve year old boy suffered from a fracture at the base when this diameter was reduced only 5 mm. Green has reported the skull of a child so deeply depressed by injury that an egg might be laid in the pit thus formed. This child did not display any brain disturbance and remained well. On the other hand, skulls are often abnormally fragile. Foville has emphasized that among the insane the cranial bones are often so porous that they can easily be pressed out of shape or otherwise injured. During the first years of life, the influence of the growth of the brain

on lines of fracture and fissures is such that larger gaps result and go on increasing in size.

The size and position of the surface area of contact is an important factor in determining the location as well as the direction of the fracture. This is especially true in cases of bursting fracture (see Fig. 1). The force is applied to the right of AD and bulging takes place at B. The scalp wound appears at the point of contact. The fracture lies somewhere up to 90 degrees from this point.

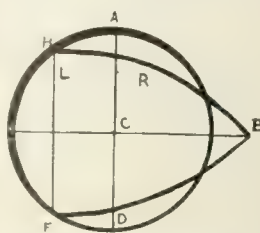


FIG. 1.—Diagrammatic representation of point of bursting and point at which force is applied.

When it occurs at one extremity only of the elongated diameter (Fig. 1), it lies in the same hemisphere in which the force was applied. The overlying skin may or may not be broken at the seat of fracture, while it seldom escapes at the point of contact. At the point of contact the bone may return to its original position after yielding and injuring the parts beneath. Fissures are single or multiple. The immediate separation in the line of fissure may admit foreign bodies into the cranial cavity or the overlying and intracranial tissues between the fragments holding them fast when they regain their former position. The external table only may be fractured at the bursting point. When no fracture takes place the dura may be separated at the point of bulging and give rise to hæmorrhage.

Considerable effusion may occur into the potential interval between the dura and the arachnoid without marked symptoms owing to its easy diffusion, while blood poured out here may travel even to the lowest parts of the spine and cause death by pressure upon remote points. The cerebrospinal fluid is rapidly reproduced after traumatic escape.

In the repair of these injuries there is practically no provisional callus produced. The definitive callus is of but slight amount and met with only between the bone edges as is the case in the other flat bones. From this it appears that the bones of the skull and their periosteal coverings are not generally disposed toward new formation of bone. Fig. 2 shows an old defect in the cranial vault with osteophytes projecting from the inner table toward the centre of the opening. Von Bergmann states that in defects, 6 to 8 sq. cm. in size, bony closure is not to be expected. Long or gaping fissures are closed by growth of bone from internal table only marking their seat by a groove or furrow in the outer table. The outer table is only available during middle life for repairing defects by König's method. Pressure from effused blood is much more serious than pressure from depressed bone, while the latter is quite readily recognized.

CASE I.—F. G., a boy, seven years old, was playing on the fire escape at the fourth floor of a tenement, on June 18, 1905. He lost his balance and fell into the yard. I saw him at the Long Island College Hospital two hours later. He was unconscious, bled from the nose and left ear, pupils were equal and did not respond to light; left side reacted slightly to pin prick, but right side did not react at all. There was a scalp wound 2 inches long over the occiput and to the left of the median line, but the skull was intact at this point.

Both bones of the right leg were fractured. Pressure symptoms were accounted for by effused blood from the middle meningeal artery on the left side and this presumption was fully borne out in the operation. A horseshoe incision with its base on a level with the external angular process was made directly above the left ear, and carried down to the bone. This crossed three lines of fracture, and the flap was reflected back. It exposed the point of intersection of two fissures. One running from above downward and backward toward the posterior fossa, the other coming from the direc-

the leg under anaesthesia well. I have seen him since from time to time and can detect no focal symptoms. He seems to be a bright lively boy.

The facts in this case call for the following conclusions: 1. This was a bursting fracture which occurred at one extremity only of the elongated diameter. 2. It occurred in the same hemisphere in which the force was applied. 3. The scalp wound appeared at the point of contact. 4. The skin overlying the fracture was not broken. 5. The intracranial tissues escaped between the fragments at the moment of bulging and were held fast when they regained their former position. 6. There was middle meningeal hæmorrhage, and the blood escaped through the torn membrane and became subdural. 7. The x ray picture taken about eight weeks after the injury shows a defect at seat of operation and in lines of fissure.

CASE II.—M. J., a girl, eight months old. While in the arms of her mother who was standing on the sidewalk June 18, 1905, was struck on the head in the occipital region by an iron toy horse thrown through the third story window of the home. The leg of the horse penetrated the occiput to the right of the median line, and just below the posterior fontanelle. The child was brought to the Long Island College Hospital, and I saw her within an hour; she was bright and appeared to be suffering little from the head injury. She was put under an anaesthetic. The field of operation was prepared thoroughly, loose fragments of bone were removed from the cerebral cortex and the lacerated membranes brought together with fine catgut, leaving an opening for drainage. Two days later the temperature was 101° F.; pulse varied during that day

from 110 to 140; temperature went down to 99° F. by June 21st; the pulse remained at 120, and hernia cerebri developed. The celluloid plate about a thirty-second of an inch thick aabb, shown in Fig. 4, was so inserted in the opening as to allow alternate quadrants to engage above and below the bone; this also allowed for drainage between the quadrants, as can be readily seen by referring to Fig. 4. The child had been taken off the breast and fed with a bottle; she did not appear to do as well, becoming more anæmic and losing ground as time went on. June 25 there was a fungating mass that necessitated removing the plate, and a dressing of 3 per cent. carbolized petrolatum was applied to the area and when removed the next day the gauze was saturated with moisture and the fungoid mass had disappeared. The plate was again put in position. The



FIG. 2. Repair of fracture of the cranial vault with defect only partly closed after a period of some years.

tion of the middle fossa and meeting the first in the exposed area (see Fig. 3). Some of the intracranial tissue had been caught between the fragments. The upper portion of the triangle of bone thus formed was removed with a trephine, and the opening afterward enlarged. The posterior branch of the middle meningeal artery was bleeding freely through an opening in the dura. The bleeding ends were secured and ligated, the dura was freely opened, and the clots gently washed out. The dura was sewed together, and the flap brought into position and secured with sutures. The next day the child was sitting up in bed eating and made an uneventful recovery. The nutrition of the child was poor and the union of the leg fragments was not firm when he left the hospital. In a short time he returned with viscous union and stood a refracture of the bone of

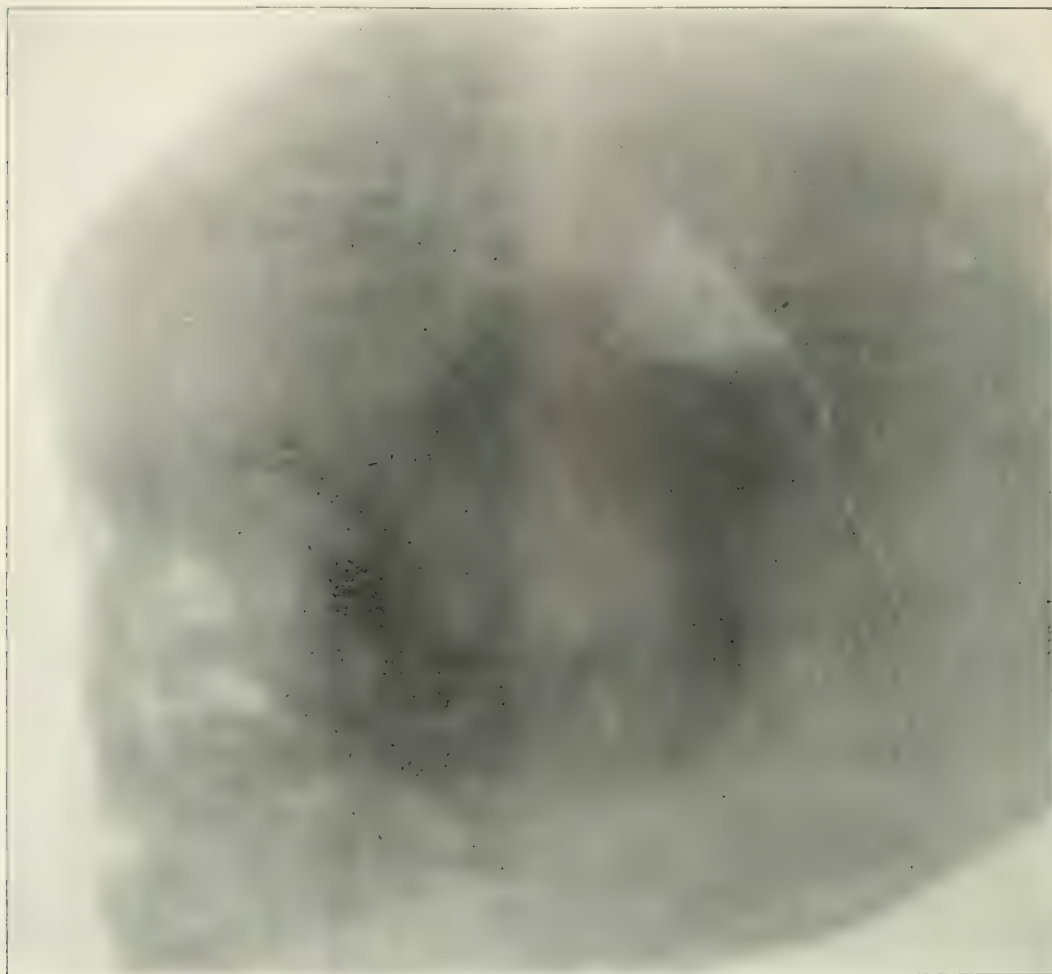


FIG. 3.—Skilograph showing lines of fracture and defect due to bursting of skull. Operation.

temperature remained 99° F., and the pulse about 140; there was little or no discharge from the wound. July 1, 1905, the temperature rose to 101° F., and the pulse to 150; the child died from exhaustion.

I wish expressly to call attention to the plate used

sion is important, as it shows that this pressure is a specific property of the substance in solution, dependent upon the nature of this substance, and this pressure could not be exerted unless the protoplasmic mass was within a membrane pervious to water but impervious to most dissolved substances, and that the carbolyzed petrolatum had a greater osmotic pressure than the protoplasmic mass contained in the membrane.

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2. Erichsen. *Surgery*, i, p. 318.
3. *Dictionnaire de médecine et chirurgie*, Paris, 1829, i, p. 651.
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5. Ostwald. *Solutions*, p. 104.

30 SCHERMERHORN STREET.

A CASE OF TRAUMATIC LUXATION OF THE HEAD OF THE FOURTH METATARSAL.

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Dislocations of the metatarsal bones are found by modern Röntgen ray methods to be not as rare as once supposed. Sometimes all are displaced and the displacement may be upwards, downwards, or

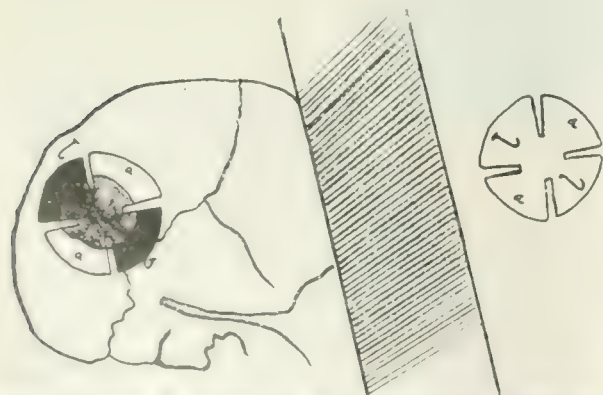


FIG. 4.—Plate in position to retain intracranial contents in meningocele.

in this case to control hernia and also to the action of the carbolyzed petrolatum in withdrawing the water from the fungoid mass, thereby obliterating it. It is well known that osmotic pressure is independent of the nature of the membrane. This conclu-

laterally, but displacement of the fourth alone is rare. Out of 1016 x ray plates only one such case was found.

The patient was a man, about fifty-five years of age, who had his right foot on the second step from the top of an eight foot step ladder, leaning against the wall. The ladder slipped from the wall and he was thrown backwards and to the side with his foot caught in the ladder which came down upon him. There was considerable cedema and ecchymosis.

The figure shown is of considerable interest from a diagnostic standpoint. In the first place, in



speaking of a dislocation we usually consider the distal bone entering into the formation of the joint to be dislocated, and this case would therefore be called a dislocation of the fourth proximal phalanx, but the relation of this phalanx to its fellows seems to be in approximately normal position, while the head of the fourth metatarsal is nearer the third than it should be.

Again, fracture is not to be excluded at a glance. There are two arches in the foot, a longitudinal and a transverse. Now, the second, third, and fourth metatarsals are not as near the plate as the first and fifth, and the rays striking at an angle as in the plate, show the lower prominent part of the heads giving the appearance of quite a bend. The sesamoids are also seen at a slight angle.

There is an affection first described by T. G. Morton (1876) in which pressure upon cutaneous filaments of the plantar nerves by lateral processes of the fourth metatarsal, as by narrow shoes, causes pain. The case under discussion had no pain in the

foot previous to the accident, and the patient gained relief by reduction under anaesthesia by traction and manipulation, after which a subsequent plate showed restoration of the bone in place.

THURDAY, OCTOBER 10, 1906.

CYSTOSCOPY IN TUBERCULOSIS OF THE URINARY TRACT.*

By WILLY MEYER, M. D.,
New York,

Professor of Surgery at the New York Postgraduate Medical School and Hospital. Attending Surgeon to the German Hospital, etc.

Cystoscopy in tuberculosis of the urinary tract has always been a subject of great interest to me, and I look upon it as a valuable diagnostic aid. I was somewhat surprised, therefore, to note the opinion expressed by a few colleagues that this examination as well as catheterization of the ureters is contraindicated in patients afflicted with this trouble. In all my cystoscopic experience, extending over a period of just twenty years, I have never seen cystoscopy cause direct detriment to these patients, and I feel sure it never should, so long as the instruments are gently and judiciously manipulated. I would, therefore, state right here, that I consider cystoscopy not only permissible, but in most of these cases absolutely necessary, in order to enable us to establish a definite diagnosis. Of course, I do not wish to be understood as saying that it should be the primary step in our efforts at reaching this goal. Nay, we have to proceed here the same as in many other urinary diseases, formerly considered obscure; that is to say, we should first enroll the full clinical picture of the case, by taking a careful history and making a most thorough general examination of the patient, always including, besides palpation of the kidneys and upper portion of the ureters, digital exploration of the lowest ureteral segment through rectum or vagina. It is self understood that repeated urinary analysis must not be omitted. If tubercle bacilli are detected in the urine, the gross diagnosis naturally is at once cleared up. If they cannot be found on repeated search, also not in the centrifuged sediment of the twenty-four hours' collection, injection of a few cubic centimetres of urine into the peritoneal cavity of a guinea pig will have to be made. Should this, too, prove negative, the tuberculin test may be resorted to in some cases. Before the last named test is carried out, however, cystoscopy is clearly indicated.

If a patient, especially a younger one, who never had contracted gonorrhoea nor had an instrument passed into his bladder, comes to us with a history of having suffered for some time from painful micturition, the trouble having begun with unilateral lumbar pain and sudden frequent urination (with or without haematuria), passing water many times day and night in small quantities, and tubercle bacilli have been found, cystoscopy, at first thought, may appear superfluous, for we know that such symptoms usually bespeak a descending tuberculous inflammation on the painful side. Yet the sign of pain is by no means an unfailing one as regards the

* Read in part in a minutes' paper—before the meeting of the American Urolog. Association, New York City, Jan. 14, 1907.

side involved by the disease. This was brought home to me by a case in which the pain was referred to the side, which, according to cystoscopy, was healthy. Guided by the cystoscopic picture, I cut down upon the painless kidney and found this side diseased. The organ was removed and the patient is well to-day, seven years after operation. Cystoscopy should, therefore, certainly be added in such cases, since one glance at the ureteral mouths is usually sufficient to render the diagnosis beyond doubt, *e. g.*, if we find one ureteral mouth healthy, and the other one, corresponding to the painful side, ulcerated, this is the affected side and the case is one of descending tuberculosis. I am ready to establish this diagnosis also, if careful search has failed to reveal tubercle bacilli, for no other urinary disease, I am acquainted with, will produce this same picture. It is truly a pathognomonic sign.

Since I made this observation, twelve years ago, I have never found this reasoning to fail me, except in one case, that of the sister of a physician. But here a miliary tuberculosis was present throughout the bladder. On basis of these findings, ulcerations around the right ureteral mouth, I cut down upon the right kidney intending to remove it if found diseased. It proved to be normal, also on bisection, and as tuberculosis could not be demonstrated macroscopically (nor, later, microscopically in a small portion of the cortex, cut out for the purpose of such analysis), I sutured the kidney and put it back in place. The patient recovered quickly and was sent to the mountains. She was then quite well for three years, when she developed a tuberculous peritonitis and suppurating left tuberculous kidney, for both of which she was duly operated upon.

This condition, *viz.*, ulceration of the ureteral orifice or its immediate neighborhood on the diseased side is found in the great majority of cases of descending tuberculosis. Personally, I have observed but one exception, the case of a woman, thirty-three years of age, in whom I found a contracted ureteral mouth. But here the disease had existed for quite a number of years. An abscess, and later, discharging sinus had formed in the groin seven years before examination, following a perimetritis after confinement. It is possible that in this case the chronic exudate was secondarily tuberculously infected, then perforated into the ureter, and ascended to the kidney. Cystoscopy in this instance showed a most beautiful picture: Whereas the left ureteral mouth was perfectly normal and could be easily entered by the catheter which quickly withdrew a sufficient amount of urine for thorough examination, the latter proving that side to be healthy, the opposite opening was contracted, ill defined, giving exit to a whitish wax-like column of coalescent pus, several inches in length, which gradually settled in the fundus of the bladder like a rope, a portion of it then breaking off and lying alongside the coil like a short stick. Never before nor after have I seen a more beautiful and instructive picture. The bladder otherwise was found to be normal. Nephrectomy showed, macroscopically, a typical tuberculosis on a small scale. Pathological diagnosis (report by Dr. R. Weil): "Atrophic nephritis, caseous tubercles, enclosed in fibrous tissue or calcified, denoting an old obsolete process; no

recent tuberculosis; no bacilli present." In other words, we here had to deal with one of those rare cases of tuberculosis which have a tendency to heal spontaneously, same as we find them now and then in other parts of the body.

Therefore, I do not wish to be understood as saying that in *every instance* of a somewhat advanced descending tuberculosis of the urinary tract, the mouth of the respective ureter will be found ulcerated on cystoscopic examination. But it certainly is so found in the very great majority of cases, with or without ulcerations in its immediate neighborhood, and if it be thus seen, and a healthy ureteral mouth on the opposite side, the diagnosis of a descending tuberculous process can be safely made.

Of course, there is an incipient stage of renal tuberculosis when the original embolic process is hidden in one of the pyramids, no communication with the renal pelvis existing and no gross pathological changes having yet occurred in the urinary tract. The only symptoms at this stage are polyuria, sometimes connected with albuminuria and radiating pains near the external urethral orifice. The cystoscope reveals nothing characteristic in the bladder. However, the urine contains tubercle bacilli, and while it may often be impossible for the microscopist to detect these, even on most careful search, their presence can be readily proved by the injection of a small amount of such urine into the peritoneal cavity of a guinea pig. Separate collection of the secretion of each kidney by means of the ureteral catheter will then determine which kidney harbors the beginning trouble.

In cases seen *somewhat later*, that is to say, after the tuberculous focus has perforated into the renal pelvis and the descending process has just reached and commenced to involve the bladder, cystoscopy is usually still simple. By employing local anæsthesia, almost every such patient will be able to retain 90 c.c. of a sterilized boric acid solution, the smallest amount necessary to properly view the interior of the viscus. Of course, in such early stage of a descending tuberculosis it is possible that the ulceration of and around the ureteral mouth has not yet become evident. We observe merely an infiltration or a pronounced hyperæmia of the one opening, which does not protrude and recede, widen and contract as the healthy one, but appears immovable, gaping, with an irregular, zigzag shaped contour. Perhaps a few highly hyperæmic, distinctly circumscribed spots can be seen in an otherwise perfectly healthy mucosa, between this ureteral mouth and the internal urethral opening, representing, as it were, "the enemy's steps in a hitherto uninvaded field," as I expressed it in 1896, when describing the cystoscopic findings in a case thus early diagnosticated.¹

In the *more advanced* cases the cystoscopic examination is not as simple; often it is rendered impossible. Here the bladder will usually not tolerate a sufficient amount of fluid to enable us to proceed; besides, we often find the vesical ulcerative catarrh so pronounced that a preliminary preparation of the bladder is imperative. This should consist in gentle irrigation twice or three times a week with small amounts, say, one ounce at a time, of sterile

boric acid solution, frequently injected and allowed to pass out, followed by an injection of bichloride solution or iodoform emulsion. In a number of cases the inflammation of the vesical mucosa can thus be sufficiently improved to make examination feasible. But the question now is: How can we make the bladder hold the amount of fluid required for a successful examination, namely, at least 90 c.c.? One might reply, by employing general anæsthesia; however, this is usually not advisable, nor does it give us any assurance of our being able to accomplish the desired end, since frequently the bladder will remain rebellious in spite of general anæsthesia, except it be deep. In that case, while it may become possible to inject even a larger amount of fluid, this may rupture the bladder at the place of an ulceration involving the deeper strata, as I witnessed it in a case of a colleague, who had invited me to help him in the examination. An abscess, fortunately in the *cavum Retzii*, was the result. Besides, general anæsthesia may have a deleterious effect upon the kidneys. I have also seen a severe hæmorrhage occur as a consequence of forcing the bladder by means of deep cocainization, to tolerate an unnecessarily large amount, 120 to 150 c.c., which is more than ample for the purpose, should be the maximum amount of boric solution injected into a tuberculous bladder for a cystoscopic examination.

In some of these advanced cases I have tried the following procedure, which, however, does not always succeed: I have introduced the irrigating cystoscope (under local anæsthesia) into the bladder, which had previously been distended, say, with 30 to 45 c.c. only. With the instrument in place and proper position, I then added more fluid very gently and slowly, and in a number of instances found the bladder to become less rebellious, so that the examination could be completed and the cystoscopic diagnosis rendered.

The method, usually employed by me, is as follows: After gentle preliminary irrigation the posterior urethra and bladder are anæsthetized with a 2 per cent. solution of alypin. This latter drug I have used for the last one and a half years, and the same has given me entire satisfaction; I consider it superior to cocaine, as it is less poisonous and stronger than eucaïne, alone or mixed with cocaine. 90 to 150 c.c., or as nearly this amount as possible, of the sterilized boric acid solution are introduced, 1 to 2 drachms of a sterilized solution of glycerin being previously injected into the urethra to facilitate the passage of the irrigating cystoscope, which instrument I always make use of, as it enables us to quickly change the contents of the bladder and, in cases of vesical hæmorrhage, to view the viscus under continuous irrigation. Of course, it must be in good working order, *i. e.*, the water injected must properly bathe the prism and the exit must be unobstructed.

If tuberculosis of the urinary system in the male is complicated with tuberculosis of the genital sphere; in other words, if we have to deal with an additional tuberculosis of the prostate gland, our attempts may easily be frustrated; the gland will simply not tolerate the presence of the steel instrument, not even for a few minutes. Still, in doubt-

ful cases, it may be worth trying. When the irrigating cystoscope is used, the effects of a hæmorrhage from the neck of the bladder can be readily overcome by making the assistant slowly inject boric water through the afferent tube while passing the instrument over the diseased area; this keeps the prism clean during the procedure.

As soon as the instrument has been successfully introduced and the medium is clear, the few normal movements of the instrument, necessary to view the vertex and lateral walls of the bladder, as laid down by the immortal Nitze, are carried out. Localized hyperæmic spots or superficial and deep seated ulcerations, as well as tubercles scattered over the vesical mucosa in cases of military tuberculosis, are readily noted. Then the cystoscope is turned around, so that the fundus appears in bright illumination. It is wise to first locate the healthy ureteral mouth, then gauge its distance from the median line and apply this measurement to the opposite side, gently turning the prism in that direction. If here the same normal opening is not detected, but instead a ragged, ulcerated spot with swollen mucous membrane and some adherent pus or mucus, and if the clinical history points to this side as the seat of the disease, urinary analysis having shown the presence of pyelonephritis, the diagnosis of descending, unilateral tuberculosis is definitely established.

On the other hand, if primary urinary analysis has pointed to the presence of a tuberculous pyelonephritis and the cystoscope shows vesical tuberculous ulcerations or just a chronic catarrh, with some highly hyperæmic circumscribed spots, evidently the forerunners of the ulcerations, but neither ureteral mouth diseased, we may assume that we have to deal with an ascending tuberculosis, a suggestion first made by me a number of years ago.

I am aware of the fact that some deny the occurrence of an ascending tuberculous process, and such would interpret the condition described as primary renal tuberculosis, without affection of the respective ureter and ureteral mouth. However, we know the gonococcus and colon bacillus to ascend. Why, then, should the tubercle bacillus be unable to climb up to the kidney? I for my part believe that there is such a thing as an ascending tuberculosis of the kidney, although it is met with in a very small proportion of the cases only.

The limited time at my disposal will not permit me to enter into further details, nor into the question of catheterization of the ureters in tuberculosis of the renal tract. I will say this much, however, that I can see no objection to adding catheterization of the ureters, provided we are careful not to introduce the instrument any further than about one to one and a half inches into the lower end of the healthy ureter, and see to it that the tip of the catheter does not drag over the surface of the bladder before introduction, thereby possibly carrying up infectious material into the healthy side. I feel sure, the *vis a tergo* will promptly wash out what slight infection might be locally produced by the passage of the catheter through a possibly infected medium. I do not believe that an ascending inflammation has ever been produced by catheterization if these precautions were observed. In very early cases with the symptoms before enumerated, only cystoscopy with catheterization of the ureters, as

emphasized before, will enable us to establish the diagnosis.

To force the entrance into an ureter with an ulcerated mouth is unwise and rarely indicated; the mere fact that it is ulcerated proves the respective kidney to be the original seat of the disease. In most cases belonging to this class ureteral catheterization is superfluous, so long as the mouth on the opposite side is seen to be healthy and urinary analysis of the twenty-four hours' specimen has shown a sufficient excretion of urea. Only in patients in whom the latter is below the normal minimum, attempts at catheterizing both sides—then necessarily in conjunction with cryoscopy—seem indicated.

This procedure can be obviated if an intramuscular injection of indigo-carmin be given before starting the cystoscopic examination. The latter method, *chromocystoscopy*, introduced by F. Völcker, of Heidelberg, three years ago, has proved a great aid in many of these cases, as well as in cystoscopy in general. The dark blue colored, rhythmic ejaculations of urine, as seen coming from the healthy side, about five to ten minutes after the injection, are in marked contrast to the scanty, light blue secretion of the affected kidney, which appears later (ten to fifteen minutes) and, besides, is often seen to be mixed with pus and cheesy material; now and then the spurts do not show any coloring at all. Völcker has established the fact that a tuberculous kidney is unable to produce a concentrated urine even in the incipient stage of the disease. Thus chromocystoscopy in descending tuberculosis of the urinary tract in many instances enables us to avoid catheterism of the ureters with cryoscopy. The health or disease as well as the functional capacity of either side can, in this way, be determined in a remarkably simplified manner. It is obvious that the colored emissions of urine will, likewise, greatly assist us in locating and distinguishing the ureteral openings in an ulcerated bladder.

If prolonged instrumentation is not tolerated by a tuberculous bladder, especially if (in the male) the prostate gland has also become involved, suprapubic cystotomy and bilateral ureteral catheterization, with the patient in Trendelenburg's posture, may be done to advantage, the ureteral catheters to remain in place until the amount of urine necessary for proper analysis is obtained. Suprapubic cystotomy is, furthermore, indicated in cases in which there is so much continuous discharge of pus into the bladder that it is impossible to see clearly. Of course, the possibility must not be lost sight of, that a suprapubic incision into a tuberculous bladder frequently results in sinus formation which often resists all attempts at closing. It is, therefore, wise to carefully weigh the pros and cons before opening the bladder. It may be advisable to dispense with such operation and separate urinary examination and cut right down on the suspected kidney, not hesitating to add an exploratory incision on the opposite side, should the condition revealed not sufficiently explain the symptoms observed.

In conclusion, permit me to add a few words regarding the operative treatment to follow on basis of such refined diagnosis. Personally I am of the opinion that if the diagnosis of unilateral descend-

ing tuberculosis is established, nephrectomy should be done at the earliest moment possible. For nowhere in the entire system are conditions as favorable as here for the successful eradication of a primary focus of tuberculosis. I would also advocate the removal of the diseased kidney, immediately or following primary nephrotomy, if its mate has been found to be slightly affected. For I have repeatedly seen it improve after the more diseased kidney had been removed or first incised and drained. I have a patient who is alive, strong, and able to work, nine years after nephrectomy for such indication. The other kidney was found to be affected at the time of the operation.

Ureterectomy need not be added in the ordinary case. Instillation of a few drops of pure carbolic acid into the ureter downward before its cut end is tied with catgut after searing of the mucosa with Paquelin's cautery is a recommendable procedure. This closing of the ureteral opening is necessary. In one of my cases the urine entering the bladder from the opposite side poured out of the divided ureteral opening in the lumbar region with the patient in the recumbent posture. The ulceration of the respective vesical ureteral mouth had destroyed the valve-like action of the lower ureteral opening.

After recovery from operation well to do patients should be sent to a hot climate.

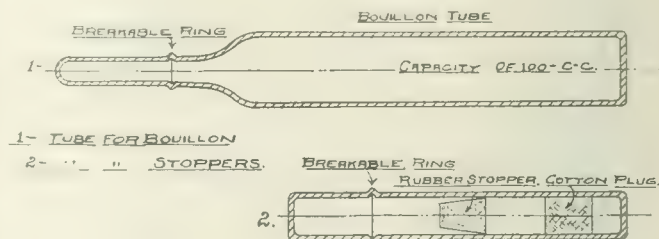
700 MADISON AVENUE.

THE BACTERIOLOGICAL EXAMINATION OF BLOOD; AN HERMETICALLY SEALED BOUILLON TUBE FOR BEDSIDE USE.

By G. W. McCaskey, A. M., M. D.,
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The presence of bacteria in the blood in the various infections is a well recognized fact, and



contrary to the views entertained but a few years ago is now known not to be a very rare event. Since it was demonstrated by Adami that the essential thing in securing a growth of organisms from the living blood was a very large dilution of the bacteriolysins contained in the serum, but little difficulty has been encountered in demonstrating a bacætiæmia. For several years in my consultation work I found difficulty in carrying bouillon in an ordinary flask a considerable distance owing to the liability of the flask to be overturned and the splashing of the bouillon against the cotton plug which might possibly be contaminated. With the view of overcoming these difficulties and having a permanent preparation of bouillon always at hand in a readily transportable form I have had made an hermetically sealed tube containing 100 cubic

centimetres with sufficient air space for agitation. These tubes, which are contained in a small paste-board box, are permanent and may be used for use at the bedside the upper end of the hermetically sealed neck is easily fractured at the line of union with the cap, and the blood which should consist of at least five cubic centimetres freshly drawn from a superficial vein in a sterile syringe or through a sterile canula instantly thrown into the bouillon and shaken up with it. In this way the bacteriolysins are immediately diluted to such an extent that they will have no effect upon the most virulent strains. Even a few minutes' delay may cause failure.

Accompanying the bouillon tube is a small hermetically sealed tube, also with a breakable ring, which contains a sterilized rubber stopper which is immediately placed in the neck of the tube so that contamination will not occur in transit. In the bottom of the phial is also a sterilized pledget of cotton which replaces the rubber stopper as soon as the incubator is reached.

I have found these tubes so satisfactory and helpful that I thought they were worth a brief description. With the possibilities in the way of the developments of opsonic therapy the recognition of bacteriæmia assumes additional importance. Independently of this, however, it should receive more attention as a factor in both diagnosis and prognosis.

SEVERE OCULAR PAIN ASSOCIATED WITH GRIPPE.*

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Possibly no term in the practice of medicine is so misused and made to cover such a variety of symptoms as the word *influenza*. Catarrhal fever, grip, and la grippe, being used synonymously, although probably differing widely in ætiology. All symptoms of a nervous, catarrhal, or gastric type which cannot be classed as belonging to any other disease are termed influenza. Leichtenstern divides influenza into three different classes: 1. Influenza nostras or grippe, a pseudoinfluenza or catarrhal fever, a special disease of unknown ætiology which bears the same relation to the true influenza as cholera nostras to Asiatic cholera. 2. Epidemic influenza vera, caused by the Pfeiffer's bacillus. 3. Endemic influenza vera, which often develops for several years in succession, after a pandemic, also due to Pfeiffer's bacillus.

As to the ætiology of true influenza there can be no doubt; the bacillus described by Pfeiffer and Cannon in 1892, is regularly associated with a certain group of symptoms, but just how it produces the disease cannot be determined. Whatever alterations are the direct result of the disease itself for the most part promptly disappear after death. The anatomical changes are those of the complications, there being no specific lesions in this disease. The organism provokes intense catarrhal processes. Inflammatory lesions and hæmorrhagic infiltration in the membranes of the brain and just beneath the membrane have been observed. Very little is known

regarding the mode of activity of the bacteria. The constitutional symptoms suggest toxæmia, but the nature of the poison is obscure. Certain complications and sequelæ, such as inflammations of the serous surfaces and neuritis indicate generalized infection and toxæmia. The organisms themselves seem to thrive or multiply in the blood (Stengel).

As the apparatus of vision is intimately connected with all the systems and organs of the economy, it necessarily becomes involved in the disturbing influence of this febrile infection. Rampoldi divides the ocular complications in influenza into two classes, inflammatory and nervous. In the latter form he includes paralysis of accommodation, accommodation asthenopia, ophthalmodynias, pain in the eyeball, superciliary neuralgias (which may or may not be accompanied with hyperæmia of the conjunctiva, or with infiltration of the cornea), and blepharospasm. In the first group he places violent hyperæmia of the conjunctiva, styes, furuncles, panophthalmitis, glaucomatous cyclitis, and hypopyon.

There are many other complications occurring in the eye as the result of influenza not mentioned in this classification, such as orbital abscess (Berger), abscess of the lids (Landolt and Weichselbaum), keratitis dendritica (Hansen-Grut and Emmer), papillitis, amaurosis, and supraorbital neuralgia. Almost any pathological condition to which the eye and its appendages are heir, may occur during an attack of influenza. We are still quite in the dark concerning the pathogenesis of the numerous ocular affections. The majority of the inflammatory processes, with the exception of the regular conjunctivitis, are probably due to a mixed infection with the ordinary pyogenic cocci. The presence of Pfeiffer's bacillus has not yet been demonstrated in ophthalmic practice. Undoubtedly numerous diseases of the eye which occur after recovery from influenza have, in the absence of other ætiological factors, through the vague ætiology of many ocular diseases been erroneously attributed to influenza, with which they had either but slight or no causal relation.

It may also be added that none of the complications described are associated exclusively with influenza. Recently the writer has seen a number of cases in which there was manifest a condition he believes to be characteristic of endemic influenza vera as affecting the eye. It is best described by reading to you the histories of four cases collected from private and hospital practice:

CASE I. Male; æt. twenty-four; white; occupation, bookkeeper. Patient was taken sick with a chill on the evening of November 20, 1906. He was ordered to bed by his family physician and treated for grippe, the severe symptoms lasting three days. During this time he had acute coryza, sneezing, paroxysmal cough; fever ranging between 99° F. and 102° F., and pain in back and legs. The fourth day he was attacked with a severe headache, deep, boring in character, difficult to localize, but confined to left side of head and temple. Twenty-four hours later he was seized with sudden excruciating pain in left eyeball; during this time there was no pain in head.

Examination showed no swelling of lids, which were normal in color, no pain elicited on pressure along course of nerves, and no painful points. Tarsal and bulbar conjunctivæ were normal, cornea clear, pupil promptly reacted to light, accommodation, and convergence. There were normal excursions of eyeball in all directions, convergence normal. T. n.

* Read before the Philadelphia County Medical Society at a meeting held on February 12, 1907.

Ophthalmoscopic examination showed cornea clear, pupil regular round, 3 mm., media clear, nerve outlines distinct, fundus negative. H. + ah 1.25 D., vision as usual.

Phenacetin, 2 grains; quinine sulphate, 2 grains, every two hours. Morphine hypodermatically if necessary to relieve pain.

Pain in eyeball continued two days and then gradually abated. Fields taken one month later showed no contraction for form or color, and accommodation good for age. O. D. V. = 5/5 and O. S. V. = 5/5.

CASE II.—Female; æt. thirty-two; white; married; housewife. Patient was treated by physician for grippe for one week, during which time she had had a heavy "cold in head," cough, fever, vague pains all over body. On the fifth day of disease she felt sudden pains in left eye, as though struck with a sharp knife. The pain described as agonizing and continuous, associated with headache, dizziness, nausea and vomiting, slight photophobia, and profuse flow of hot scalding tears.

Examination showed no swelling or redness of lids. Slightly sensitive points at exit of supraorbital nerve and at side of nose where cartilage joins nasal bone, but no tenderness along course of nerves. Tarsal and bulbar conjunctivæ were normal, eye white, cornea clear, pupil reacted normally and promptly to light, accommodation, and convergence. Excursions of eyeball were normal in all directions, and convergence normal.

Ophthalmoscopic examination showed cornea clear, pupil regular round 3 mm., media clear, nerve oval 7 x 9 long axis 75°, outline distinct, mixed astigmatism, fundus otherwise negative. O. D. V. = 5/12, O. S. V. = 5/15, with correction 5/5 O.², accommodation was normal for age. Muscle balance, exophoria 1° at 5 metres. At 33 c.m. exophoria 5°.

In spite of all treatment pain persisted nearly three days, but at no time were there any inflammatory symptoms. The nausea and vomiting were relieved after the first twenty-four hours, but headache persisted. Vision to date, February 9, 1907, has remained the same, there is no contraction of fields, and ophthalmoscopic appearance unchanged.

CASE III.—Male; white; æt. twenty-four; occupation, physician. Patient complained of feeling chilly, with headache for a couple of days, then began sneezing and developed an acute coryza, temperature 101° F. to 103° F., severe headache, confined mostly to right side of the head. He had had moderate cough, no nausea or vomiting. On the third day of the disease he was seized suddenly with intense pain in the right eyeball, the headache disappearing. The pain was within the eye only, and continuous. Pressing the ball backward in the orbit did not cause pain.

Examination showed no tenderness on pressure over nerve trunks, no swelling or discoloration of skin, and points of exit of trigeminal branches were not unduly sensitive. Tarsal and bulbar conjunctivæ were normal, eye perfectly white, cornea clear, pupil reacted promptly to light, accommodation, and convergence. Excursions of eyeball were normal in all directions, and convergence was normal. T. n.

Ophthalmoscopic examination showed cornea clear, pupil round, 3 mm., media clear, nerve oval 8 x 9 long axis 120°, outlines distinct. H. + ah 1. D. Patient says that her vision was as good as before illness. Accommodation was good for age. Examination of urine was negative.

The ocular pain lasted about two days, then patient suffered return of the pain in the head, gradually subsiding, leaving him in much weakened physical and mentally depressed condition.

CASE IV.—Female; white; æt. twenty-seven; occupation, housemaid. Patient was treated by her phy-

sician for an attack of grippe. She suffered with severe cold in the head, and cough, had pain in the back, headache, and says "had high fever." About the sixth day of the disease she felt pain shoot in the left eye, which was almost unbearable, no let up, just steady violent pain confined within the eye. She was admitted to the Presbyterian Hospital in the service of Dr. Charles A. Oliver, who kindly asked me look after her.

Examination showed no swelling or redness of lids. There was pain on pressure over point of exit of supraorbital nerve and at inner canthus, but not along course of nerve trunks. Tarsal and bulbar conjunctivæ were normal. Eye was white, cornea clear, pupillary reaction normal to light, accommodation, and convergence. Excursions of the eyeball were normal in all directions, convergence normal, and T. n.

Ophthalmoscopic examination showed cornea clear, pupil round, 3 mm., media clear, nerve 7 x 9 long axis 90°, outlines distinct, H. + ah 1.75 D., fundus otherwise negative. O. D. V. = 6/7.5, O. S. V. = 6/7.5. Accommodation was good for age. The examination of the urine was negative. Temperature ranged between 99° and 100 2/5°.

Under appropriate treatment pain subsided, but patient was too weak to leave the hospital, remaining there two weeks. When she was last seen, February 5, 1907, the proper correcting lenses gave 5/5 vision in O.². No contraction of fields for form or color.

No examination was made for the Pfeiffer bacillus in any of the four cases.

To summarize: There was a distinct history of endemic influenza vera in all four cases, two of which were males and two females, ages twenty-four to thirty-two years. From the second to the sixth day of the disease there developed sudden, excruciating pain in the eyeball, affecting one in the right and three in the left eye, lasting from two to five days, gradually subsiding. At no time during the course of the disease were there any symptoms of inflammation of the eyeball or its appendages, no pain on movement of eyeball, no tenderness on pressure over parts supplied by the trigeminus, no hyperæsthesia or vasomotor affections, such as pallor or coldness or redness, heat and œdema, and no trophic phenomena. In one case there was severe deep seated boring headache, associated with nausea and vomiting. Temperature ranged from 99° F. to 103° F. The examinations of the urine were practically negative. No examination was made for the Pfeiffer bacillus. The disease was followed by physical weakness and mental depression.

The writer believes that those patients may be considered as cases of neuralgia of the ciliary nerves, Case II probably having the dural branches of the trigeminus also involved. The term neuralgia is here used as signifying pain unattended with structural changes in the nerve. It is often difficult to draw the line between neuritis and neuralgia, especially so in ophthalmic practice. Jackson (in *The Eye and Nervous System*, by Posey and Spiller, 1906, page 363) says, "neuralgic pain of peripheral origin is probably generally due to neuritis, at least, in practice we are unable to distinguish between pain which is due to neuritis and that which is not." However, Mills (*Transaction of the Philadelphia County Medical Society*, January 13, 1892) says, "many of the reports speak of the frequent occurrence of various neuralgias. Doubtless a distinction is seldom made by observers and recorders between neuralgia and neuritis which are or may be

separate affections. Practically these cases should be regarded as neuralgia, in which pain is referred to certain nerve lines or radiations, but in which pain on pressure and other phenomena of neuritis, such as anæsthesia, vasomotor and trophic disorders, and even paralyses are absent." It is not known precisely how the neuralgia is produced by the bacillus. Mispelbaum (Ueber Psychosen nach Influenza, *Zeitschrift für Psychiatric*, 1890, Fasc. 1.) attributes neuralgia of the trigeminus occurring during the course of influenza to the state of irritation of those terminal branches which are situated in the sinuses in the vicinity of the nostrils. J. Santos-Fernandes (*System of Diseases of the Eye*, by Norris and Oliver, page 706) says, "from the intense catarrhal inflammation of the nasal mucous membrane or of the membranes which line the neighboring sinuses, is derived an irritability of the trigeminus which may provoke pains that are referred to the back part of the orbit." Berger observed a case of violent supraorbital neuralgia of the right side which he considered as due to an affection of the frontal sinus, as it was relieved in a few days, after a purulent flow from the right nostril had taken place.

When we consider the so called "muscular" pains occurring in all parts of the body in influenza, together with the many paralyses, neurites, etc., it seems more probable the neuralgia occurring in the cases referred to in this paper was due to a toxæmia of the blood acting upon the nerve centres or fibres, a true inflammation not having taken place.

To conclude: There are an increasing number of cases of endemic influenza vera complicated by a sudden seizure of excruciating pain located in the eyeball, lasting two or three days, unattended by any symptoms of inflammation, while the eyeball and its appendages present a perfectly normal appearance. Diagnosis is neuralgia of the ciliary nerves, due to toxins circulating in the blood acting upon the nerve centres or fibres.

1921 CHESTNUT STREET.

INFANTILE CHOREA AND TIC, THEIR SYMPTOMS AND TREATMENT.

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Chorea is a disease which attacks children with comparative frequency, usually before puberty, and is associated with arrest of both mental and physical development more or less permanent in its character, requiring great care in both medical and psychic treatment to obtain the best results, being by no means the simple self limiting disease the laity and too many physicians consider it.

Several weeks before the actual choreic movements are noticed, the child becomes irritable with its playmates, inattentive and obstinate at school, the resulting punishments so far from causing improvement increasing the obstinacy and irritability, the child when questioned is not inclined or perhaps is unable to describe its feelings beyond that it feels tired, it has lost its appetite, is pale and anæmic, often with some cough, and perhaps slight pains in the limbs and head.

The first choreic movements usually appear in one hand extending later to all parts of the body, but always more intense on the side on which they commenced, disappearing entirely during sleep, at least this is usually the case, although at times there are slight twitchings of the limbs during sleep, especially if the child sleeps during the day. Under any emotion the movements may increase or diminish; in the office the excitement of the interview with the physician may cause them to cease for a time, but by laying the patient on the lounge and making it count up to 100 slowly and then to count backwards the movements will appear. The child talks slowly, suddenly precipitating a few words rapidly, not exactly a stammer, but a spasmodic involuntary ejaculation which embarrasses the child, accentuating the movements of the limbs and muscles affected. Sometimes there is a definite want of coordination, the child being unable to grasp an object directly.

The physical examination gives but little information, the reflexes may be exaggerated or diminished; they may be unequal or perfectly normal. Electrical reactions give no information, and even if the disease has existed for some time there is no hypertrophy of the muscles affected, on the contrary, there may be slight atrophy. The child may complain of vague pains in the joints or slight rachialgia suggesting rheumatism. The power of concentration of attention is affected as well as the memory, it may be able to recite some fable or make some fairly difficult calculation, but a few minutes later it is unable to recite or to add two simple numbers. It becomes extremely emotional, changing its humors suddenly, fits of temper occur without apparent cause, tears or laughter are produced by inadequate provocation, slight hallucinations and nightmares are not uncommon, and in rare cases even a mild delirium.

Such is the clinical picture of true Sydenham's chorea. A modified form is also common, which is intermittent in its character consisting of nervous involuntary movements of the muscles, which are neither choreic or tonic convulsions, nor are they habit movements or tic, but are complex contractions, strong but not violent, resembling simple automatic acts; for example, a hitch forward in walking, elevation of the eyebrows or shoulders, a sigh or a groan or a gesture of impatience, but too fugitive to be classed as a spasm, being often unconscious to the child who is surprised when asked the reason for the motion.

All these symptoms usually occur between the ages of six and thirteen years, most frequently in girls (77 per cent.). Heredity has nothing to do with the etiology of these symptoms. Three factors seem to cover all the cases, rheumatism, infectious diseases, and as a manifestation of a degeneration of the motor nerves the result of some acute disease or the conclusion that the choreic is a degenerate, the symptoms being produced by an infection. The pathological and anatomical findings are so vague as to be of no value, the *Choreakörperchen* of Flechsig, the meningeal hyperæmia of Campbell Thompson, the subarachnoidian oedema of Richon, are found in other diseases, and are not pathognomonic of chorea.

The tics of childhood differ from chorea, but are often confounded with it. A tic is a motion pri-

marily produced by an external cause or idea or coordinated to a special act; by repetition the motion becomes an involuntary habit without cause and without aim, exaggerated in form, intensity and frequency, taking the character of a convulsive unreasonable movement repeated to excess, its execution being preceded by an imperative idea and its repression producing malaise, the will and fixed attention usually suppresses it for a short time at least, it is not present during sleep. On examination the patient is quiet, owing to his attention being concentrated on the physician, but in a few minutes the movement commences. In reply to question as to its commencement it may have occurred after the extraction of a tooth, the child continuously sucking at the vacant space until the habit is formed and even under the fear of punishment he is unable to refrain; another tooth may be put in the place of the one extracted, but the motion still continues, increasing in severity till the motion produces a grimace. The child may have had successively tics of the eyelids, movements of the head, elevation of the shoulders.

The choreic tics are movements continuing for some time, then followed by a period of calm to reappear again perhaps in another muscle. The tonic tics are when the patient turns his head to one side holding it in that position for some time, being accentuated when he writes or reads or when he is fatigued. The symptoms are usually worse in the evening disappearing during sleep and on waking may pass some time without their recurrence. He talks rapidly and the sentences terminate with a spluttering, at times without cause he breaks his sentence to ejaculate, ah! He also gives a history of having eaten rapidly, even voraciously, without proper mastication. At times during the day he feels an almost uncontrollable hunger, he suffers from indigestion and constipation, with attacks of diarrhoea. He walks rapidly as if under some compulsion, making abnormal genuflexions. Facial asymmetry is not uncommon, the reflexes and objective sensibility are normal. He is usually childish, taking pleasure in the games of children much younger than himself. He is very sensitive to praise or blame, a bright scholar with a lively imagination and a good memory, learning easily, but failing in mathematics and all studies which require prolonged reasoning. He is usually timid, but subject to acute attacks of anger, throwing his books away or breaking ornaments in moments of impatience. At the same time he may be extremely methodical in his ways, keeping his belongings in exact order. This mental state is not special for those children suffering from tic, but is common in all children suffering from inharmonious mentality, imperfection of will, or mental infantilism and instability.

The tics usually appear in children at about the seventh or eighth year, or at puberty. Imitation plays a part in the production of tics, it may be voluntary and conscious, or involuntary and unconscious. Echolalia is not an uncommon form of tic in children, when some sentence often obscene, is repeated many times in a spluttering manner without any meaning being attached to the words by the child.

Treatment.—There can be no doubt that the great majority of cases of chorea are rheumatic in nature,

and are a direct result and not a complication of rheumatism. Acute rheumatism is the result of an infection by the diplococcus rheumaticus. Acute arthritic rheumatism has been produced in animals by experimental inoculation with a diplococcus isolated from the cerebrospinal fluid and inflammatory excretions obtained from a case of acute rheumatism (Wassermann, 1899). Poynton and Paine (1900) confirmed this observation, and demonstrated the diplococcus in the pia and brain in a fatal case of chorea; they also produced choreiform movements in the rabbit by inoculating it with the organism, a result also obtained by Meyer and by Beattie. Chorea gravidarum has recently been investigated by Poynton and Holmes, who have found the diplococcus in their cases and consider that chorea gravidarum is of the same nature as the chorea of childhood, it being a manifestation of acute rheumatism during a critical period of physiological strain. The treatment of the majority of choreic cases is rheumatic, viz., alkali and salicylates with small doses of potassium iodide. Masked symptoms of rheumatism can usually be detected in these cases, pain in the limbs and joints, also perhaps slight heart insufficiency, etc., at the same time the general anæmic and debilitated condition of the patient demands tonics and attention to the digestion and emunctories. It is impracticable in private practice to examine the cerebrospinal fluid, except under very urgent conditions, and the rheumatic causation of chorea has to be diagnosed by the symptoms and history. Acetylsalicylic acid (aspirin) is recommended by Williamson in grave cases in doses of 0.60 to 0.90 gramme he has obtained favorable results, where other treatments had failed.

Arsenic was an old remedy, but rehabilitated by Seguin in 1893 and Comby in 1896; it is usually given in increasing doses either in the form of Fowler's solution or as arsenious acid. The error usually committed in the use of arsenic is overdosing, a small dose, six to eight times a day, is much more effective than the larger doses. It is stated by Comby, Mery, Moizard, and others, that it prevents endocarditis, and that it cures the motor incoordination. Oppenheim uses arsenic and iron in all cases of chorea. Comby uses antipyrine and arsenic with absolute milk diet. Pope and Tschernow consider arsenic contraindicated in severe cases, especially with cardiac complications.

Cacodyl has given results according to Lamois, but Hebar considers it of no value. Leroux employs antipyrine in doses of from 3 to 6 grammes with good results in some cases; methylacetanilide (exalgine), antipyrine (analgesin), calcium beta naphthol sulphate (asaprol), have all been recommended, but their utility is doubtful, in the majority of cases they diminish the secretion of urine, cause hæmoglobinuria and erythema.

Quinine associated with antipyrine is recommended by Dorland and Baginski and Legroux; acetylparamidosalol (salophen) by P. Mane; fluid extract of ergot by Smith; methylpropylcarbinolurethane (hedonal) by Vargas; sulphon ethyl methane (trional) by Mackay; camphor monobromide in increasing doses by Bossard. When the choreic movements are very intense valerian, zinc oxide, asafetida, zinc sulphate, zinc phosphate, potassium bromide (Bouchat), strychnine sulphate, and hyoscyamine

(Oulmont). Frousseau employs opium in one every two hours. Oppenheim morphine and chloral. Caral uses chloral in severe cases during an attack. All those remedies have to be used with great caution with children.

Hydropathic treatment often gives good results, the cold wet pack, hot baths (Hallopeter and Broucher), general massage combined with passive movements (Federow) have given good results. The Schott baths have a tendency to quiet the patient. Benedikt alleges to have had results from the galvanic current, Baguet from the continuous current, but the consensus is against electricity in any form. Lumbar puncture has been employed by Bozzolo and Lemna, but if any good results are obtained it is impracticable, and should only be resorted to in very grave cases. Brissaud recommends isolation and rest in bed with "psychomotor discipline." Huyghe proceeds as follows: "After partial chloroformization the patient is well rubbed, wrapped in cotton and bandaged, remaining for six or eight days." This treatment is impossible for children, and applies more to adults.

The treatment of chorea in children is antirheumatic with iron and arsenic, combined with ordinary hygiene and attention to the digestion and eliminations, nearly all cases are cured in a few months unless there are severe cardiac complications. True chorea in the adult is rare and usually succumbs to the same treatment.

The treatment of tics is very different, in children there is an arrested development and the tic is often a tetany which can be relieved by small doses of thyreoid, arsenic and mercury, and very careful dieting and attention to the digestion, the patients will usually have a capricious appetite, an inordinate craving for some special form of food, sweets, breakfast foods, meats of special kind and cooked in a special manner, the appetite being poor except at one meal when it may be voracious, careful diet will improve the mental and physical condition of the patient in a short time. It is to be remembered that at puberty great physiological changes take place, the heart increases in size affecting the pulse and circulation often associated with slight albuminuria, the thyreoid has to increase its secretion as well as the interstitial cells of the testicle, and probably the other glandular secretions change in their functions.

In adults the tics will usually be found to have occurred first of all in childhood, to have disappeared for some years often appearing with increased force during menstruation, being absent during pregnancy. Symptoms of thyreoid insufficiency should always be looked for and even if not found doses of from three to six grains of thyreoid per diem can do no harm if watched and often give very good results. Opium in increasing doses till the patient is quiet followed by slow reduction sometime gives good results. Tincture of cimicifuga in full doses will occasionally produce marked improvement. In some cases the tics are of an elliptoid nature when alkalies, small doses of bromides, zinc oxide, and silver nitrate are indicated. In very severe cases operation is necessary, but it should only be recommended as a last resort, the results being very uncertain.

810 PARK AVENUE

AN UNUSUAL SYMPTOM IN CHOREA

BY CARL L. PETER, M.D.

Philadelphia.

Read at the meeting of the Philadelphia Neurological Society, November 22, 1906.

Excessive secretion of saliva, accompanied by drooling, is a symptom not infrequently seen in diseases characterized by marked motor disturbance. It has been observed in both acute and chronic conditions, being the rule in hydrophobia, and of occasional occurrence in paralysis agitans. My attention was first attracted to the presence of this symptom in chorea while studying an unusually severe case of that disease in the out patient department of St. Christopher's Hospital. The following is a brief report of the case:

CASE I.—L. C.; boy; age twelve years; seen first February 6, 1904. He complained of constant twitching and jerking of the muscles of the face and extremities, with an excessive secretion of saliva. The child was dull and irritable, his speech thick and the sentences expressed in a jerky manner; there was some difficulty in swallowing. He gave a history of one prior attack of chorea with a one year interval, the present attack being of several months' duration. There was no history of rheumatism or scarlet fever, and no cause assigned for the attack. The family history was negative.

Examination.—The child was poorly nourished and presented typical choreiform movements, general, constant, and severe; the tongue was affected, also the facial muscles of expression, and the muscles of mastication. There was constant drooling of saliva. No cardiac murmurs were found; the pulse was 96 and somewhat irregular.

Treatment.—Rest, a light and easily digested diet. Fowler's solution in ascending doses until 15 drops were given thrice daily, with 4 grains of antipyrine.

Six weeks later (February 23, 1904) there was no twitching apparent, no drooling of saliva; patient feels well, is bright and cheerful.

I have since observed excessive salivary secretion in two other cases at the neurological dispensary of St. Christopher's Hospital, one being from the service of Dr. Luther C. Peter, to whom I am indebted for the privilege of reporting the case.

CASE II.—M. R.; girl; age fourteen years; seen first May 6, 1904. This was her second attack of chorea, the first having occurred three years previously. Choreiform movements had commenced in the right arm one month before she came to the dispensary, and were now general. The disposition of the child had changed; she could not talk and could scarcely walk. The tongue and muscles of mastication were involved in the twitching; swallowing was difficult, and the mouth was constantly filled with saliva. The child was fairly well nourished, anæmic in appearance, and had a distinct cardiac murmur, systolic in time, heard at the apex. There was no history of rheumatism, scarlet fever, or fright.

CASE III.—(Dr. Peter's case). E. B., girl; age six years; seen first July 9, 1904. At the age of four years she had chorea, the present attack being her second. The choreiform movements were general, having been so from the onset, six weeks before the examination of the patient. There was marked involvement of the tongue and muscles about the jaw, and twitching of isolated fibres of the pectoral muscles was observed. Speech was difficult and drooling constant. The pa-

* Read at the meeting of the Philadelphia Neurological Society, January 22, 1907.

tient was dull, peevish, and forgetful. Aside from a slight enlargement of the lymph nodes, transmitted to the axilla, the general physical condition was fair. No history was obtained of rheumatism, scarlet fever, or fright.

It is of interest to note that in each instance the patient had one prior attack of chorea, that all were severe cases, and that two of the three had distinct mitral murmurs. Contrary to what would be expected, in no case could a history of rheumatism be obtained. Age and sex were unimportant factors, two of the patients being girls and one a boy, the ages being six, twelve, and fourteen years respectively.

I find no mention of the occurrence in chorea of excessive salivary secretion with drooling in the following text books: Gowers, *Diseases of the Nervous System*; Oppenheim, *Diseases of the Nervous System*; Church and Peterson, *Nervous and Mental Diseases*; Osler, *Practice of Medicine*; Taylor, *Nervous Diseases in Children*; Sachs, *Nervous Diseases of Children*; American Textbook of the Diseases of Children; Rotch, *Pædiatrics*; Keating, *Cyclopadia of the Diseases of Children*.

I believe the symptom to be of purely mechanical origin, the movements of the tongue and muscles of mastication exciting the salivary glands to increased activity, and the involvement of the tongue, jaw, palate, and pharynx so interfering with swallowing that the saliva is retained in the mouth, or drools from the corners.

810 TIOGA STREET.

SOME APPLICATIONS OF THE ROENTGEN RAYS IN DERMATOLOGY.*

By RUSSELL H. BOGGS, M. D.,
Pittsburgh, Pa.

A plea for a more conservative use of the Röntgen rays in dermatology cannot be too strongly emphasized. Many are applying the rays without making an accurate diagnosis, without being familiar with the pathology of the disease under treatment, and without having studied either the quality or the quantity of the rays sufficient to produce the desired physiological action. No one can apply the rays conservatively unless these three factors are carefully taken into consideration.

If all who take up Röntgen therapy would first acquire an efficient technique, by learning to make radiographs of the more difficult portions of the body, they would be able to produce better results in therapy. Before applying an agent so powerful as the Röntgen rays, this knowledge is the very least which should be required. No one has ever purchased an x ray apparatus who was able to do radiography at first, nor can any one apply the rays and have uniform results unless he is able to determine the exact quantity and quality indicated. He cannot become a judge of these factors unless he acquires a technique which enables him to make difficult radiographs. It is a great deal better for the beginner to spoil x ray plates than to produce unsatisfactory results upon patients.

Many, who in recent years, have been able to make an accurate diagnosis and who have been familiar with the disease, have been unable to deter-

mine the dosage of rays necessary to produce the desired physiological action. Many who have paid attention to the physics of the rays have not been otherwise qualified. Still, with all these drawbacks, radiotherapy has advanced. The dermatologists are becoming better röntgenologists, while many of the röntgentherapeutists have made a careful study of the diseases which they have been treating and are becoming better clinicians. These two factors are resulting in better work to-day than at any time in the history of Röntgen therapy. Of course, this would scarcely be admitted by the "old fogey" dermatologist nor the röntgenologist, who treats everything with the x ray.

No conservative dermatologist will deny that the Röntgen ray is one of the most efficient therapeutical agents we possess at the present time, in the treatment of acne, nor would any conservative röntgenologist say that all the predisposing causes of acne should not be remedied before any treatment is given. The expert clinician who prescribes the most efficient agent attains the best results.

The limits of this paper will not permit me to mention every disease which has been successfully treated by the rays, nor to give the indications and the contraindications. So I will deal only with a few of the more common dermatoses.

Eczema.

Eczema is classified according to the intensity of the inflammatory process which takes place in the epithelium, but if the disease has been of long standing the deeper layers often become involved. The erythematous type is characterized by redness and swelling; the papular by localized collections of exudation; the vesicular by the exudate elevating the epidermis into vesicles and the pustular, by the vesicles becoming cloudy from migration of leucocytes. If the vesicles rupture and there is a large amount of exudation, the condition is called weeping eczema, while if the discharge is slight and the serum dries up to form crusts, the disease is of the squamous type.

The squamous form usually follows the papular and erythematous type. Since eczema is a disease in which all the different degrees of inflammation occur either together or separately, it is readily understood that variations in the treatment are necessary whether it is by the Röntgen rays or by the older methods. The rationale of Röntgen treatment lies in its stimulation of metabolic processes, especially in chronic inflammations. It has been stated that the rays influence eczema by stimulating the bioactivity of the cells.

Before a patient is treated by any method, the cause should be carefully studied and removed. The ætiology is not clearly understood, and in a large number of cases no apparent cause is found. In the treatment of eczema by the rays, the location and type of the disease should always be carefully considered, and the indications and contraindications be determined. The rays are certainly not necessary in the acute form of eczema, unless it be to relieve the pruritus which cannot be controlled by other remedies, and in most forms of subacute eczema. But in the chronic and rebellious cases, which resist other therapeutical agents, the x rays have proved efficient. It is in squamous eczema that the effects of the rays are most marked, since

it is more chronic and less liable to yield to other forms of treatment. It requires more intense radiation to relieve the pruritus, and there is a greater tendency to recurrence than in any other form of the disease. It has been noted by a number of operators that after a few applications of the rays the discharge and itching ceased, while the desquamation was arrested. In weeping eczema the desquamation usually disappears after four to five treatments.

Radiation in eczema of the legs, with a complication of varicose ulcer, should be entirely different in application from that used in squamous eczema of the face, as there is marked difference in the vitality of the tissues. Besides relieving the eczematous condition, which often accompanies varicose ulcer, the rays increase metabolism and greatly assist other methods in curing the ulcer. The following cases will illustrate this point:

CASE I.—Mr. S., aged fifty-six, had chronic eczema of the face with frequent relapses for twelve years; the skin was thickened and the submaxillary glands were enlarged. Two treatments a week were given for a month. Then the patient was not seen for three weeks when he was about well. Two weeks later he was apparently cured. The pruritus was relieved after the second treatment.

CASE II.—Mrs. R., aged fifty-eight, had a varicose ulcer on the left leg, surrounded by an eczematous condition which had been very resistant to treatment. After having treated the patient by the usual remedies for two months, I applied the Röntgen rays three times a week, giving only a mild or stimulating dose. After the fifth treatment, the intense itching, which had been exceedingly troublesome, was entirely relieved, and after the eighteenth treatment, the ulcer was entirely well. The leg had been bandaged before and during the x ray treatment. The radiation was more intense in the first case than in the last one, as there was a marked difference in the vitality of the tissues.

Acne.

The Röntgen rays have been a satisfactory and efficient method of treating acne, and in pustular acne, I believe the rays can be considered almost specific. Many operators have treated between forty and fifty cases with satisfactory results. Almost every one who has studied the physiological actions of the Röntgen rays has secured good results, and many of these cases were referred for Röntgen treatment after other treatment had failed. Varney states: "In the treatment of fifty cases of acne the results obtained excelled those by any other recognized treatment, both as regards the duration of the treatment and the permanency of the cure. But in the treatment of acne rosacea the results have not been so good."

As a rule only the obstinate cases of acne should be treated by the rays. Each case should be studied carefully, and all possible causes considered and remedied. In many obstinate cases, constitutional treatment, and particularly the value of exercise and other hygienic measures should not be overlooked.

Why does it take more radiation in the small papular and acne rosacea than in the pustular form? Can this be determined by a study of the pathology? The character of the lesions is determined by the process of inflammation. If the inflammation is around the outlet of the sebaceous glands, small

papular acne is formed; when extensive and periglandular, the large infiltrated papules, and when suppuration occurs, the pustular form. In papular acne the inflammation is usually subacute and persistent, resulting in a dense infiltration of the tissues and the production of indurated papules often seen in stubborn cases. The process may result in hyperplasia of the connective tissues. The process of infiltration may be more acute and followed by suppuration. This may be limited to the sebaceous gland, and produce neither scarring nor loss of hair, or may include the follicle and surrounding tissues, causing destruction of the hair papilla, and the production of a permanent scar. As a rule, both papular and pustular lesions exist, but one form usually predominates.

The Röntgen rays appear to act in acne in two ways, by causing atrophy of the sebaceous glands and by setting up an irritative desquamation. Most authorities agree that the principal effect is due to the action of the rays on the sebaceous glands, the secretion being arrested. The result may be complete atrophy of the gland, if the radiation is too intense. According to Gassman, the cure of acne rosacea by the x ray is due to a destruction and degeneration of the blood vessels. It can be readily understood that since the rays have a selective affinity for glandular structures, it requires less radiation to decrease the activity of the sebaceous glands than to cause an absorption of the hypertrophic growth of connective tissue or the destruction of small vessels.

The successful treatment of acne by the Röntgen rays is dependent upon a flexible technique which can adapt the dosage to the needs of each case. In the treatment of more than forty cases, I have found that the best results can be secured by a careful study of each case. By giving several trial doses and varying the amount of radiation necessary, my results have been gratifying, and I have had only one case where atrophic changes of the skin have taken place, and this was produced after changing from one form of interrupter to another. This, seemingly, accounted for the result. It is just as necessary to expose properly when raying for therapeutical effects as to affect the silver in a photograph plate when making a radiograph. I believe acne requires more experience and judgment to produce uniform results, than any skin disease treated by the Röntgen rays.

Acne rosacea, while more resistant, has yielded the best results where the glandular inflammation predominates. In my experience it has taken more treatments, and a mild erythema was often produced. Then the patient was allowed to discontinue treatment until this reaction disappeared. No difference how excellent the result may be, recurrence will appear in a small proportion of cases, but additional treatment will cause a complete disappearance of the lesions.

Psoriasis.

In the treatment of psoriasis, conflicting statements have been made which seem difficult to explain. One dermatologist stated the following:

"In my opinion the x ray is not to be used as an ordinary means of treatment, but only in cases of extreme chronicity and stubbornness. After two or three exposures, if there is no benefit, my advice

is to stop the x ray and to use ordinary treatment." Another dermatologist of equal prominence states: "As a rule no permanent results are achieved unless the x rays are used intensely." The technique suggested by the first is unworthy of any consideration because two or three treatments, unless very intense, would have very little action on the lesions. Many have found the Röntgen rays to influence psoriasis favorably, but after the lesions have all disappeared, a recurrence is likely to take place. The recurrences are not only lessened by Röntgen treatment, but there are usually longer intervals. The great benefit in the treatment lies in the fact of the quick removal of the lesions on the body, thus shortening the duration and preventing the annoyance arising from disagreeable applications.

Results have been sufficient to justify the employment of the rays, as a routine treatment in all obstinate cases of psoriasis, but it must be persisted in with sufficient dosage.

Keloid.

Keloid is an overgrowth of connective tissues, is embedded in the corium, and is more or less elevated above the surface of the skin. The tumor not only varies in form but also in size and has a tendency to occur on the sternum.

The treatment of keloid by the Röntgen rays has been more successful than any other method up to the present time. However, by the Röntgen method, it requires considerable time to remove a keloid, and rays of such character as to stimulate normal tissue processes and promote absorption should be employed. Rays which are very destructive, if given in large amounts as in carcinomatous tissues, are contraindicated in the treatment of keloid. It has been advocated by some to have the keloid removed and then give a series of treatments. This shortens the length of treatment, but I would not advise the removal unless the tumor is extensive, as cutting a keloid occasionally stimulates the activity of its growth.

It is a well known fact that the Röntgen rays cause an absorption of scars, either partially or entirely. This is observed in x ray treatment of carcinoma.

Cutaneous Tuberculosis.

Cutaneous tuberculosis includes all the lesions which are due to the activity of the tubercle bacillus, regardless of the variety of the disease. Tuberculosis of the skin has been conveniently divided into the following classes: (1) Lupus vulgaris; (2) tuberculosis verrucosa; (3) tuberculosis cutis orificialis; and (4) scrofuloderma.

Tuberculosis of the skin usually starts in early life. It may be the result of a general infection, or may be the starting point of the infection. It cannot be too strongly advised to guard against possible infection by avoiding contact with tuberculous material.

All of the varieties rest upon the same histological basis and the modifications in their development produce the different clinical pictures. The tubercle is composed of granulation tissue and in its earliest stage it is made up of leucocytes, lymphoid cells, and proliferated connective tissue corpuscles. Later a number of epithelioid cells appear, and when the tubercle is fully developed one or more

large bodies develop in the centre, surrounded by zones of epithelioid tissue, which are called giant cells. Afterward the cell infiltration increases, the vessels become blocked, and the central portion undergoes a tissue necrosis and is converted into a cheesy material.

The tubercle in lupus is situated in the corium and progresses upward by the extension of the diseased foci and their coalescence and the surrounding connective tissue becomes infiltrated with inflammatory products. The nodules appear as brownish red spots and become pale yellow on pressure. Several nodules generally appear together in groups, and a slightly raised prominence results from their further growth outward. The nodules disappear by fatty degeneration and absorption, and may develop into ulcers. These ulcers have a granulating surface and bleed easily. If the granulations undergo hypertrophy by stimulation from the inflammatory process, a warty growth, lupus verrucosa, is produced and usually occurs on the fingers and toes. Lupus serpiginosus is the result of healing in the centre, and the disease spreads at the periphery. In cases with this tendency, infiltration and ulceration usually go hand in hand, often forming a large pigmented and cicatricial area.

Tuberculosis verrucosa occupies a place between lupus and the tuberculous ulcer.

In tuberculosis cutis the tubercles undergo a more rapid process of degeneration, and the bacilli are very numerous. In scrofuloderma the areas of caseation and necrosis are much larger than in lupus, and a greater destruction of tissue occurs. The presence of tubercle bacilli vary with the case.

Most methods of Röntgen treatment will be applied to all forms of cutaneous tuberculosis, but it is readily understood that they must be varied. Lupus and tuberculosis verrucosa occur in apparently healthy patients but may appear in the asthenic as well as in the sthenic forms of tuberculosis. The treatment of all forms should be both constitutional and local. The virulence of the disease determines not only the prognosis but the therapeutical agents which are advisable. It would be useless to direct the principal treatment to tuberculosis cutis orificialis when the internal organs were diseased.

In tuberculosis verrucosa it is often advisable to remove the growth either by electrolysis or by the knife, and then give a few rather intense radiations to destroy any remaining foci. The rays have proved efficient in the treatment of tuberculous ulcers and scrofuloderma, but the constitutional treatment must not be overlooked.

The Röntgen rays are an established method of treatment in lupus. Some cases require a long course of treatment, especially where the disease is extensive, it usually cannot be cured by any other method. Besides producing better cosmetic results, recurrences are less frequent than by any other method. In my experience, recurrences have been fewer where a mild dermatitis has been produced and then, a few weeks after the lesions have disappeared, sufficient radiation is again given to produce a mild erythema. This should destroy the remaining foci.

The destruction of lupus by the Röntgen rays has been accomplished by two methods, either by gradual effect, or by setting up an intense reaction fol-

lowed by a necrosis of the skin. The former methods, with, as a rule, accomplish as much or more than the latter, besides being free from the danger of destroying more tissue than is necessary. The amount of reaction necessary in order to affect a cure in a reasonable time depends upon the severity of the disease as well as the location.

In most cases it is useless to produce more than a hyperemia; a slight swelling of the tissue which is always more pronounced in the lupus nodule and is accompanied by a certain amount of burning and itching. The congestion passes away in a few days, the nodules decrease in size, and the ulcerated portions cicatrize. As soon as the hyperemia has passed away, sufficient radiation is again given to produce a slight reaction in the diseased tissue. Treatment given in series certainly produces the best cosmetic results, but to adopt a uniform method and not vary it with the individual case, would show that the röntgenologist had very little clinical experience. In superficial cases, the same amount of radiation is not required as in the hypertrophic. It should always be remembered that the susceptibility of reaction varies with the location of the lesion, the degree of infiltration, and the vitality of tissues. In cases where the skin is poorly nourished, small doses should be given at first. The Röntgen rays increase metabolism and the benefit which will be derived from a small amount of radiation is often surprising. The quantity and quality of the rays should be varied, according to the vitality of tissues, and the stage and type of the disease.

In trichophytosis and favus, involving the hairy parts of the body, the Röntgen ray is especially valuable, as it acts first as a depilating agent and second as a germicide. In ringworm, as a result of the disease attacking the hair follicle, the hairs become brittle and break off close to the scalp, making epilation by any other method extremely difficult and tedious. With proper doses of Röntgen ray depilation is completed in a very short time. A medicinal germicide may be applied, and the disease completely eradicated, before the return of the hair which usually commences in about six weeks. Favus is more difficult to treat by this method although the end results are almost as good, the infection being more generally disseminated and involving the surrounding tissue of the hair follicle.

Sabourand of the St. Louis Hospital in Paris, has reported his results and asserts that his failures do not exceed over five or ten per cent., and these are attributable to three causes: 1. An insufficient epilation at certain points, which leaves a few diseased hairs in situ. 2. An oversight in the treatment, leaving one or more small islands untreated, an omission which is only observed after the rest of the head has been epilated. 3. Reinoculation after the course of treatment.

Considering the large amount of ringworm and favus present among the school children in the poorer districts, and the failure of all prophylactic methods to prevent their spreading, it would seem almost imperative that some arrangement for the treatment of these cases by the Röntgen ray, in the hands of an experienced operator, should be made.

Alopecia areata is a disease so irregular in its course, that one must be very cautious in drawing conclusions as to any method of treatment. There are two theories, one parasitic and the other neurotic. Some authorities think both are right, and that there are two varieties, one, contagious or parasitic, and the other neurotic, or noncontagious.

It may seem strange that the Röntgen rays have been found useful in hypertrichosis and also in alopecia areata, where opposite physiological actions would be required. In hypertrichosis, a certain quality and quantity of the rays is necessary to produce atrophy, while in alopecia it is necessary to give a dose which is stimulating. A few drops of tincture of ipecac will stop vomiting, while a larger dose will produce emesis.

The usual local treatment of alopecia areata consists in the application of slightly irritant drugs. This is supposed to stimulate the function of the hair papilla. As much medicine is only superficial in its action, and penetrates with difficulty into the deeper layers of the skin, proper stimulation by the Röntgen rays seems advisable and has proved more efficient in some cases at least.

LESLIE B. BULLING.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:—

LXI.—How do you treat Pott's fracture? (Closed April 1, 1907.)

LXII.—What pharmacopœial preparations should be kept on hand by the general practitioner? (Answers due not later than May 15, 1907.)

LXIII.—How do you treat gonorrhœal epididymitis? (Answers due not later than June 15, 1907.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisers will receive a prize. The prize will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable, no one answer to contain more than six hundred words.

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of \$25 for the best essay submitted in answer to question LIX has been awarded to Dr. Andrew F. Curran.

PRIZE QUESTION NO. LX.

THE USE OF OPIUM IN PREFERENCE TO ITS DERIVATIVES.

Mount Vernon, N. Y.

The pharmacopœia offers a number of preparations of opium which have so distinct and definite a value and importance that they are not likely to be

displaced by the seductive and sometimes more dangerous alkaloids. The varieties which were in use before the alkaloidal derivatives came into vogue had the objection, of course, at least some of them, that they sometimes compelled the ingestion of a relatively large quantity of material, much of which was inert, in order to obtain the desired effect. There is, therefore, an immense advantage in the use of morphine, codeine, apomorphine, etc., when it is deemed desirable to introduce the minimum, as to quantity, into the body.

Of the official preparations which, when made by a trustworthy chemist, have always commanded confidence (and few drugs are so variable in their potency as opium), those which I have found useful and effective are the camphorated tincture, the tincture, the deodorized tincture, the compound powder, the compound solution, and the aqueous extract. These have all stood the test of time and have proved of great value under suitable conditions.

The indications for which opium or its derivatives are administered are pain, then excessive secretion, restlessness, sleeplessness, hæmorrhage, and fever.

If pain alone is the indication and it is desired to relieve it as promptly as possible, there is nothing comparable to the hypodermic use of morphine; all other methods and substances must yield to this. If the urgency to relieve the pain is not great, and if the pain is located within the pelvis, I have often found the suppository in which one grain of the aqueous extract of opium is incorporated superior to morphine.

If there is excessive secretion from mucous membranes opium serves us well by its astringent property. For women and children there is no form of it which is more acceptable than the camphorated tincture, the old fashioned paregoric. It not only checks the secretion, but it quiets and soothes the disturbed nervous system and prepares the way for Nature's recuperative efforts.

If there are fever, restlessness, and insomnia, what can surpass the old and reliable Dover's powder?

As an ingredient in a very useful sedative liniment I have been in the habit of using the compound solution of opium, and after many years of experience see no reason for abandoning an old and faithful friend.

Recently cotarnine hydrochloride, an alkaloid of opium, has been recommended as a remedy for hæmorrhage, especially for hæmorrhage connected with the female pelvic organs. An astringent such as opium certainly is ought to be valuable for this purpose, and this alkaloid is supposed to represent the astringent principle of opium. My own experience with it has not been satisfactory, however, and I have not found it effective.

The great objection to all the preparations and derivatives of opium is their constipating action, and I have not found this objection absent even in those substances from which the constipating elements are said to have been removed.

After all, if we remember that opium is but a bridge to bear us over a temporary difficulty we can make use of it for the emergency and then employ measures to counteract the evils which may follow such use.

173 EAST LINCOLN AVENUE.

Dr. Laurence M. Hynson, of Washington, D. C.,

Writes:—

There are few if any drugs used in medicine which can be of such benefit to mankind and few if any that can do so much harm if not cautiously used as the preparations of opium.

The chief medicinal principles of opium, morphine, codeine, etc., are administered in small doses, and have as their ultimate result the relief of pain with in many cases the accompanying production of rest of the body.

To draw a distinction in medicinal uses between the preparations of opium and morphine would seem at first sight to be impossible, for the therapeutical and medicinal power of opium compounds is reckoned from the percentage of morphine they contain.

There are occasions when we may desire to use the simple opium preparations in preference to any of the above named derivatives, and it is on this subject that I desire to make a few remarks.

In the medical cases of long duration and accompanied by pain of more or less severity, it is not wise to use any preparation rich in morphine for fear of producing the morphine habit. For while it is an established fact that for severe pain in acute and chronic conditions the chief alkaloid of opium, morphine, is our sure remedy, it must be observed that it can be substituted by other opium preparations for less severe conditions. On the other hand, notwithstanding the fact that morphine and some of the associated opium derivatives possess in themselves all the properties of the simple opium compounds with absolute sure results, the use of the strong alkaloids is to be avoided even though the end accomplished by the weaker preparation is prolonged.

The preparations of opium reduce all the secretions of the body, with exception to the elimination of water by the skin, which action they seem to increase. With this therapeutical principle in mind, in cases of prolonged intestinal diarrhœas (enteritis) where it is desired to check secretions, opium in the form of "pilulæ opii" (containing one grain of powdered opium each) is given three times a day. As the action of opium in this condition is more or less local it is desirable that the pills are coated with some substance which will enable them to reach the intestinal canal before being dissolved.

Where there is an intestinal derangement or diarrhœa of transitory nature and accompanied by pain, opium in the form of paregoric (tinctura opii camphorata) administered with bismuth subnitrate proves a very satisfactory agent.

In fever conditions associated with irritability and sleeplessness, opium in the form of Dover's powder (pulvis ipecacuanhæ et opii) in one dose of 10 grains at bedtime produces a degree of quietude, and also a condition of diaphoresis by stimulating the sweat glands, by dulling the sensitive areas of the brain, and reducing the congested condition of the circulatory system.

To allay cough and secretions of the mucous membrane of the respiratory tract paregoric is added to the cough mixture, care being taken as to dosage. As children bear opium badly, the use of

paregoric to produce quiet (except under small dosage and with caution) is to be condemned.

In the treatment of sprains and contusions of the body, especially at the different joints (as, for instance, the ankle, wrist, and elbow), the application of hot lead and opium water (*aqua plumbi et opii*) serves two useful purposes by reducing the swelling and also allaying the pain.

Correspondence.

LETTER FROM MONTREAL.

McGill University's Further Loss by Fire.—The Medical Inspection of Schools.—Cremation.—Sir William Hingston and Dr. Drummond, Two McGill Professors.—The Five Year Course.

MONTREAL, April 20, 1907.

On the morning of April 16th fire again visited McGill University and totally destroyed the building of the Medical Faculty. It was only a few weeks ago that the fine engineering building was destroyed, a building which had been the gift of Sir William Macdonald, the wealthy tobacco manufacturer, of Montreal. The noted pathological museum of McGill, which embraced many fine and rare specimens, particularly calculi and the brains collected by Professor Osler when he was pathologist to the Montreal General Hospital, is gone; so is the fine library of the faculty, while the personal treasures of Professor Shepherd in the anatomical department, Professor Adami in the pathological department, and Professor Ruttan in the department of chemistry have been almost completely ruined. It was stated at first that Professor Adami's manuscript of a work on pathology, upon which he has been diligently at work for some years, was destroyed, but fortunately this is not so. Although the origin of the fire is a deep mystery, an investigation is being conducted by the governors, and there is not lacking some evidence that it was of incendiary origin. This world famous institution was the outcome of the old Montreal Medical Institution, which was established in 1823. The first session of the institute was held in 1824; in 1829 it became the Medical Faculty of McGill University. The first university degree, a medical one, was conferred in 1833. In 1844 the number of students in the medical school was fifty. In 1851 there were sixty-four students and fifteen graduates. In 1872-3 the number had reached to 154, with 35 graduates, while by the year 1892 there were 315 students, with 46 graduates. In 1901 the number had reached 440, at about which point the number has remained ever since. At different times Lord Strathcona was a great benefactor to the Medical Faculty. In 1893 he endowed the chairs of pathology and public health with \$100,000; in 1899 he gave another \$100,000 for the extension of laboratories and for the library and museum. In 1904 he gave an additional \$50,000. The medical building stood four stories high, except in the front block, and was 280 feet long by 145 feet wide. It had five museums, namely, of pathology, anatomy, obstetrics and gynecology,

pharmacy, and hygiene. The main building was erected in 1873. In 1885, and again in 1893, large additions and alterations were made.

Medical inspection of schools in this city has been discontinued for the present, owing to lack of funds to pay the forty medical men engaged in the work. That it is urgently needed here is seen from a recent report of the medical health officer, Dr. J. E. Laberge, who strongly urges that the city council immediately take steps to provide the necessary funds for the resumption of the work. The report tells what conditions were found among our school children for the six months that it was prosecuted, ending on the 31st of March. It was found that 1,406 children were suffering from inflammation of the glands of the neck; that 1,022 had defects of vision; that 9,478 had decayed teeth; that 2,453 had enlarged tonsils; and that 1,572 had vermin. The total number of affected pupils during the six months was found to be 20,682. The system of inspection had been of benefit in that there had been noticed an improvement of fifty per cent. in the cleanliness of the children.

Cremation in Montreal seems to be growing in comparison with other cities outside of Canada where the practice is carried out. In 1904 the crematorium was established in Montreal, and up to the 2nd of April, 1906, when the first annual meeting was held, the operations numbered thirty-three. For the year ending on the 28th of February, 1907, there were nineteen more. Prior to the establishment of the crematorium, there had been twelve cremations under the charter of the Mount Royal Cemetery. Cremation is not practised in any other Canadian city.

By the recent deaths of Sir William H. Hingston and Dr. William Henry Drummond we have lost two of our most distinguished medical men. Sir William had attained to a good age, but Dr. Drummond died young. The former was an expert and skilful surgeon and in every way a kindly, courteous, cultured, and distinguished gentleman. The latter was probably better known to the public as the author of the inimitable *Habitant* poems. Sir William was professor of surgery in Laval University and head of the surgical department of Notre Dame Hospital. Dr. Drummond was formerly professor of medical jurisprudence in Bishop's Medical College before its amalgamation with McGill.

The chair of medicine in McGill, which was rendered vacant by the death of Dr. James Stewart, has been filled by the appointments of Dr. F. G. Finley, Dr. H. A. Lafleur, and Dr. Charles F. Martin. The former will do the didactic work, while the two latter will have charge of the clinical teaching. As these gentlemen have practically carried on this work for a number of years, there is, therefore, no decided change. A department of medicine has been organized at each hospital, with a professor in charge.

The five year course in medicine has been adopted at McGill University, although the legislature has refused to make it compulsory throughout the Province of Quebec. The fifth year will be devoted entirely to hospital work.

Therapeutical Notes.

Hypodermic Injection for Constipation.

R. *Yolk of two eggs*, 1.0 gramme;
 Distilled water, 100.0 grammes;
 M. S. Inject into the colon four such injections daily.
Journal des praticiens, February 10, 1907.

Ointment for Anal Pruritus.—E. Blake recommends the following:

R. *Syrup of Hamamelis*, 5.0 grammes;
 Glycerin extract of thyroid body, 4.0 grammes;
 Cold cream, 26.0 grammes;
 M. Apply locally.

La Quinzaine thérapeutique, March 25, 1907.

Rectal Feeding.—Boyd and Robertson (*Scottish Medical and Surgical Journal*) recommend the following nutritive enema:

R. Yolks of two eggs.
 Pure dextrose, 30.0 grammes;
 Sea salt, 5.0 grammes;
 Pancreatized milk, 300.0 c.c.
 M. S. Inject into the colon four such injections daily, through a soft tube.

For Dysmenorrhœa in Young Girls.

R. *Aspirin*, 3.0 grammes;
Sodium bromide, 5.0 grammes;
 Fluidextract *viburnum prunifolium*, 10.0 grammes;
 Alcohol (at 60°), 20.0 grammes;
 Syrup of bitter orange peel, 75.0 grammes.
 M. S. One tablespoonful, two or three times a day, taken with the meals.

Bulletin général de thérapeutique, March 23, 1907.

Chlorosis in Infancy.—The preparation of iron used by Marfau for infants suffering with anæmia is:

R. Ferric potassic tartrate, 5.0 grammes;
 Syrup of bitter orange peel, 50.0 grammes;
 Distilled water, 100.0 grammes;
 M. S. One or two teaspoonfuls to be given daily.
Journal des praticiens, February 2, 1907.

New Treatment for Rabies.—G. Doin (*La Clinique*, August 17, 1906) states that M. Remlinger, director of the hydrophobia institute at Constantinople, recently discovered a new treatment for rabies (*Revue scientifique*, June 23, 1906). The procedure consists in a vaccination made with mixtures of antirabic serum and of the fixed virus, already studied by Marie. The serum is obtained by injecting ascending doses into the sheep, of fixed virus; at first into the jugular vein and next under the skin. Remlinger ascertained the perfect harmlessness of this mixture when injected under the skin of man by experiments made upon himself. The immunization in rabbits was only temporary, but in dogs it lasted for a year or more. Remlinger has great hope that the immunity conferred by this genuine vaccine in man may prove serviceable; at all events, the immunity obtained in the sheep and dog indicate a possible future for this new treatment.

The Pathogeny of Mercurial Tremor.—Guillain and Laroche presented to the Société de neurologie, of Paris, typical illustrations of mercurial tremor occurring in two men (seventy and seventy-two years of age), who worked at gilding metals. They

called attention to the fact, previously observed, and also present in these patients, that traces of mercury and also lymphocytosis were present in the cephalorachidian fluid in subjects intoxicated by mercury. This gives support to the experimental lesions produced in the central nervous axis of the rabbit by mercury, and shows that mercurial tremor is not merely a hysterical tremor, which is the classic opinion, but that apparently this toxic agent produces lesions of the cerebrum, or of different cerebellar channels. When these lesions become chronic they develop the mercurial tremor, which, therefore, would have a pathogeny analogous to that of *sclérose en plaques* (disseminated multiple sclerosis), to which it also presents in its clinical phenomena a decided similitude (*La Clinique*, February 15, 1907).

Insensibility Produced by Blue Light.—Reard, a professor of dentistry in the University of Geneva, in 1901, first utilized the blue rays of the spectrum for the production of anæsthesia. The technique is given by Cavalie as follows (*La Quinzaine thérapeutique*, March 25, 1907): 1. An electric lamp of 16 candle power, with a glass colored an intense blue and as pure as possible, is employed. 2. The patient should be prepared for a novel experience. He should be reassured and told that he will not be put to sleep, but made insensitive to pain. The method should not be too insistently urged, and if the patient prefers another method the blue light should be given up. The confidence of the patient is an excellent condition of success. 3. The subject is seated in an armchair, of which the back is a little inclined posteriorly. The lamp, furnished with a good reflector, is placed before his eyes at a distance of twelve to sixteen centimetres. 4. The head of the subject and the lamp are lightly covered with a blue cloth (silk or satin), so as to prevent the diffused daylight from impressing the patient's eyes. 5. The subject should fix his eyes well upon the blue lamp. If an opening be left in the cover it may be closed with a piece of blue glass, through which the face and eyes of the subject can be watched. 6. Absolute quietness is necessary, no noise in the operating room, and as few words as possible. 7. Two or three minutes of fixation are sufficient. 8. The subject soon becomes accustomed to the blue color; he complains only of the heat coming from the bulb. Watch the countenance of the patient for a slight paleness, or the appearance of some light fibrillary movements and dilatation of the pupils. The patient then seems to be in a condition of ecstasy. 9. The insensibility lasts about thirty seconds, and it is necessary then to operate and proceed rapidly. This method suits admirably for the extraction of teeth. It is absolutely without danger. Cavalie has used it in forty cases, almost always with success. In the few cases of failure there was either want of confidence on the part of the patient, or lack of fixation by the eyes upon the blue lamp. According to Renard, failure in 15 or 22 per cent., observed by him, was subject to a similar interpretation. At present the analytical study of the anæsthetizing influence of the blue light has not been carried sufficiently far to permit a scientific interpretation of the results. The reports, however, are very encouraging.

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THE LIBRARY OF A MEDICAL SCHOOL.

Writing in his best vein, Dr. William Osler gives in the April number of the *Bulletin of the Johns Hopkins Hospital* an interesting account of a collection of books presented by Mr. W. A. Marburg to the Johns Hopkins Medical School at his (Dr. Osler's) suggestion. The books were published in the seventeenth and eighteenth centuries, and collected by the physicians connected with the Warrington Dispensary. It seems that the old town of Warrington, on the Mersey, was notable in the middle and latter parts of the eighteenth century for its scientific men, among whom there were such individuals as Joseph Priestly and Thomas Percival. Dr. Osler tells us that, at the same time with the presentation of the Warrington collection, Mr. W. F. Jencks gave the library of the Johns Hopkins Medical School the large collection of works on teratology and embryology made by a great German obstetrician, the late Professor Ahlfeld. We congratulate the school on these very valuable additions to its library.

Dr. Osler goes on to give us his ideas of the proper composition of a medical library for students. He would have it include all the original works of all the great men in medicine, and in many instances all the editions of such works. He would have in such a library a carefully selected group of the works of Hippocrates, the more important works of Galen, and good editions of the works of Dioscorides, Aretæus, Pliny, and other Latin and Greek authors, the chief works of the Arabian physicians,

and the chief works of the practitioners of the school of Salernum. "The great medical Humanists"—Linacre, Caius, and others—he says, should be well represented, and all the works of such great anatomists as Fabricius, Malpighi, Eustachius, Sylvius, and many others of the sixteenth century, also "every scrap of the writings of Harvey," the complete works of the Hunters (John and William), and everything of Haller's, Magendie's, Claude Bernard's, Boerhaave's, Morgagni's, Bichat's, Laennec's, Louis's, Corvisart's, Bright's, and Addison's should be included.

No well informed person, it seems to us, can in the least disapprove of Dr. Osler's selection of authors, but, pursuing his plan, one might wish to add the works of Falloppio, Camper, de Graaf, Coste, Trousseau, Larrey, Velpeau, Sir Thomas Watson, Graves, Drake, and Bartlett. There should also be contained in such a library, we believe, such modern cyclopædic works as Eulenburg's *Real-Encyclopädie der gesammten Heilkunde*, Dechambre, Duval, and Lereboullet's *Dictionnaire usuel*, and Jacoud's *Nouveau dictionnaire de médecine et de chirurgie pratiques*; and the history of modern medicine might be left to sets of such periodicals as the *British and Foreign Medico-Chirurgical Review*, the *Lancet*, the *Archiv für pathologische Anatomie, Physiologie und klinische Medizin*, and the *American Journal of the Medical Sciences*. A medical college library should not be encumbered with the evanescent textbooks and monographs that constitute the bulk of the present literary products of the profession.

MATRICULATION REQUIREMENTS.

Medicine being one of the learned professions, it is eminently fitting that serious efforts should be made to prevent illiterate persons from entering the ranks of the calling. Ever since the establishment of the first medical school in this country by Dr. John Morgan, in 1765, the University of Pennsylvania has endeavored to maintain a high standard of preliminary education as one of the requisites for admission into its classes and for the conferring of its degree. As a rule, the authorities of the university have succeeded in this object. Pennsylvania was one of the first institutions to require three years of study instead of two, and one of the first to increase the course from three years to four. In former days a prospective student was required to have a high school education in order to be enrolled on the books of the department. More recently it was necessary that the candidate should pass the same examination for admission to the first year class of the medical school as for admission to the first year class of the college, unless he possessed

a degree in arts or science from a recognized college or had passed the entrance examinations of a college in which the requirements were equal to those for admission to the University of Pennsylvania. In the past few years, following the leadership of Johns Hopkins University, Pennsylvania has been endeavoring to increase gradually the preliminary work necessary for matriculation. In 1908 candidates for matriculation in the medical school will be required to have studied biology, inorganic chemistry, and physics, in addition to the subjects at present required. Moreover, in 1909 it will be necessary for the candidate to have completed work equivalent to that prescribed for a freshman class in a recognized college, and in 1910 to have completed work equivalent to that prescribed for the freshman and sophomore classes in a recognized college.

In commenting upon this increase in preliminary education necessary for permission for a man to study medicine, we cannot refrain from remarking that the fact that a man has spent two years in the undergraduate classes of a literary college, even if he has studied biology, inorganic chemistry, and physics, will not necessarily make him a good medical student, and it will not endow him with common sense, which is a quality much to be desired in a medical student as well as in a physician. There are a great many scientific men of eminent attainment in this country who have never had the advantage of spending two years in a literary college. We always regret to note the increasing difficulty in the way of an earnest student's reaching his desired goal, although it is quite possible that the increased difficulty makes the goal better worth while. We should not like to see the requirements for entering upon a course in medicine or the fees necessary for the pursuance of the studies so high as to make it possible for only rich men to undertake the task. Up to the present time it has always been possible for a man of moderate means but earnest purpose to secure an education in medicine at Pennsylvania, Columbia, or Harvard, and we hope it will always be possible for such a man to achieve the object of his ambition. These aspects of the subject should be considered by all administrative officers in our best medical schools when prescribing increased requirements or when raising fees. In other words, while it is quite right to require a high standard of attainment, it ought at the same time to be made possible for poor men to attain that standard.

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

On Tuesday, Wednesday, and Thursday, May 7th, 8th, and 9th, there will be held in Washington the seventh triennial session of the Congress of

American Physicians and Surgeons, consisting of simultaneous meetings (with functions to some extent conjoined) of fifteen of the national societies of more or less special scope. Each of the cooperating organizations, as our readers are aware, has its own annual meeting when and where it may see fit, but once in three years they all come together in Washington and act to some extent as sections of a single body. The general sessions, largely for the delivery of addresses, are so arranged as not to interfere with the meetings of the individual organizations. The president of the congress is Dr. Reginald H. Fitz, of Boston; the vice-presidents are the presidents of the various societies *ex officio*; the secretary and chairman of the executive committee is Dr. William H. Carmalt, of New Haven; and the treasurer is Dr. Newton M. Shaffer, of New York.

From the scientific point of view these triennial congresses are the most important gatherings of medical men, apart from the rare international congresses, that take place in the Western Hemisphere—all the more important, we are convinced, from the fact that scientific matters alone are discussed. Nobody seeks to advance personal or sectional interests, and no censorious function is assumed. The associated societies carry out their own work, and the joint sessions are devoted to matters of interest to the entire profession. The separate bodies represent the departments of ophthalmology, otology, neurology, gynæcology, dermatology, laryngology, general surgery, climatology, general medicine, genitourinary surgery, orthopædics, physiology, pædiatry, medical psychology, and pathology and bacteriology. These are mentioned in the order of the societies' organization, according to *Circular No. 1*, recently issued by the committee of arrangements, who announce that they will "take pleasure in answering any inquiry relating to the local arrangements for the congress." The chairman is Dr. A. R. Shands, No. 901 Sixteenth Street, N. W., Washington, D. C.

Apart from a reception by the president of the congress, no festivities are announced. This, we think, is as it should be; junketing is apt to be made too prominent in connection with great medical meetings. Nobody need be at a loss for entertainment, however, for Washington is always attractive and the special opportunities for gratifying scientific interest are very great. They are largely incidental to the work of the medical services of the army, the navy, the Marine Hospital Service, and the Bureau of Animal Industry. From the social point of view, such men as will be in attendance on this congress are sure to meet with ample hospitality; for this we are indebted to Washington every three years. It must be rather burdensome to the

physicians of that city, but there are distinct advantages in having the triennial meetings always held in Washington.

GUNSHOT WOUNDS OF THE HEAD.

Perforating injuries of the brain have always been regarded with special dread by the soldier, and indeed until comparatively recent times the feeling has been largely shared by the surgeon himself. If this sentiment has abated somewhat in our day, the access of optimism has been attained not alone by the extension of asepsis and antisepsis to surgical undertakings in the field, but also in large degree by special study of head injuries, particularly as exhibited in the military hospital, where naturally the material available is extensive and the opportunity of gaining wide familiarity with this special form of injury proportionately enhanced. Among those who have recently devoted attention to this important and interesting field of surgery, no one has labored more indefatigably or with greater insight than Dr. August Hildebrandt, of Berlin, the first volume of whose monograph on the effects of small calibre projectiles on the human body, recently reviewed in this journal, is destined, we believe, to rank in the estimation of the profession as a classic. Serving as staff surgeon on the Boer side during the late war in South Africa, and in the same capacity in the international expedition to China, Dr. Hildebrandt has enjoyed exceptional opportunities. These, thanks to acute powers of observation and analytical and literary ability of a high order, he has been able to turn to the good of the profession and of his own reputation.

Since the publication of his first volume, Dr. Hildebrandt has brought out another monograph, somewhat smaller, dealing especially with shot wounds of the cranium (*Die Schusswunden des behaarten Kopfes*, Berlin, 1907). Many of the conclusions arrived at by the author are instructive. With regard to the advisability of immediate operative interference in shot wounds of the head, Hildebrandt holds that, in the absence of coma, the surgeon should go forward in: 1. All shrapnell and shell wounds of the cranium. 2. Glancing and tangential shot injuries of the cranial vault. 3. Deep penetrating injuries caused by small calibre projectiles of the modern rifle, more especially when symptoms of cerebral compression or irritation (of the cortex) are present (tonic or clonic convulsions). The same advice holds good in cases of persistent paralysis and derangements of speech.

To show under what unfavorable circumstances trephining may be carried to a successful issue, Hildebrandt adduces the experience of the English surgeons during the Boer war. Thomas Makins, whom

he quotes, describes a number of successful operations of this kind, undertaken on the field while under the fire of the enemy. This author accentuates the fact that, in those cases where for any reason the operation could not be undertaken, infection invariably set in. The infectiousness in the character of shot wounds likely to follow the use of the new pointed projectile of the French is discussed in detail; and here, as throughout the monograph, the author's insight and mastery of deductive reasoning appear to great advantage.

PHILIPPINE MEDICINAL PLANTS.

The Filipinos use a great number of native plants for medicinal purposes. Bacon (*Philippine Journal of Science*, December, 1906) has undertaken a study of such plants as are reputed to have medicinal value or are known to be used medicinally in other countries. He is experimenting along both chemical and physiological lines. Whenever a physiologically active substance can be isolated in a pure condition, and especially when the quantity obtained is large, it is proposed to make detailed studies. Although there are a number of plants said to be possessed of marvelous properties, so that they quickly effect wondrous cures of such diseases as are usually supposed to be incurable, the educated physicians practising in the islands say that these rumors have never been substantiated.

Dita bark (*Alstonia scholaris*) is regarded all over the islands as a remedy for fevers and for chronic diarrhoea and dysentery. It is probably the most widely known and most important Philippine drug. The bark contains ditamine and echitamine. The use of these substances as remedies for malarial disease and for intestinal amœbiasis seems to be of doubtful value. *Datura alba* (*Datura fastuosa*) is very common about the towns in the Philippines. The natives consider the plant to be poisonous, and it is quite commonly used with criminal intent. It contains hyoscine, hyoscyamine, and atropine. The first of these constitutes over ninety per cent. of the total alkaloids present. The plant is a common weed, and might readily be used as a natural source of hyoscine.

Casalpinia sappan is also common in the Philippines. It is generally known as sibucao, also as sappan wood. It is very popular among the Filipinos for dyeing the native fabrics. A decoction is also used in medicine for the control of hæmorrhage, particularly from the lungs. It contains a large proportion of tannin. The coloring matter of sappan wood is brasilin. Bayogo (*Entada scandens*) is abundant in the Philippines. The wood of the vine is cut into strips, which are then beaten between stones in order to disintegrate the fibre thoroughly.

It is used by the natives for washing the hair. It is thought that it has some influence in curing pityriasis. It is also used for treating itch. The kernel of the seed is mashed by the natives and used for poultices, which are supposed to be useful for the relief of colicky pains in children. The seeds contain saponin. The wood is used to assist in catching fish in ponds and streams, because the soluble products stupefy the fish and render their capture easy. The fibre contains two per cent. of saponin. Mention is made of other plants containing saponin, which are used by the natives as fish poisons.

Macabuhay (*Tinospora crispa*) is generally believed to possess marvelous medicinal virtues. It is used as a febrifuge, for gout, for secondary syphilis, as a powerful emetic, for leprosy, for chronic rheumatism, for dyspepsia, and for insanity, and a necklace made of small pieces of the stem is worn as a remedy for jaundice. European physicians say they have never yet seen a case in which they were certain that a cure had been effected by its use. The plant contains no alkaloid and apparently no physiologically active substance. It belongs with the bitters. A number of other plants are mentioned in the article, including several containing purging oils, and one, *Argemone mexicana*, which is supposed to contain morphine. Bacon, however, failed to find morphine in any part of the plant. Although there is an alkaloid present, its identity is not yet determined.

THE LANCET, OF LONDON.

We regret to learn, as we are going to press, of the recent death of the senior editor of the *Lancet*, Mr. Thomas Henry Wakley, a son of the Thomas Wakley who founded the *Lancet*. Although the deceased had reached the advanced age of eighty-six, we understand that almost up to the last he was active in the management of the journal. His son succeeds to the editorship.

A CORRECTION.

We regret that certain errors should have crept into Dr. Wesley Grove Vincent's article as published in our issue for April 13th. Beginning with the paragraph at the foot of the second column of page 689, one should read as follows:

For clinical purposes we may divide these chronic cases into three classes: (1) Chronic parenchymatous nephritis (large white kidney of Wilks); (2) those usually accompanied by moderate heart hypertrophy, moderate, often intermittent, dropsy, and some evidence in the urine of parenchymatous change, chronic diffuse nephritis (secondary contracted kidney, small white kidney). (3) As contraction progresses in these cases the clinical picture approaches that of the third type associated with arteriosclerosis and great heart hypertrophy, chronic interstitial nephritis (arteriosclerotic kidney, contracted red kidney).

News Items

Change of Address.—Dr. Nathan T. Beers, to 516 Nostrand Avenue, Brooklyn, N. Y. Dr. Arthur J. Herzig, to "The Washington," 2040 Seventh Avenue, New York.

The American Therapeutic Society will hold its annual meeting at Washington, D. C., on May 7 to 9, 1907, under the presidency of Dr. Robert Reyburn, of Washington.

The American Orthopaedic Association will hold its annual meeting at Washington, D. C., on May 7 to 9, 1907, under the presidency of Dr. Joel E. Goldthwaite, of Boston.

The American Otological Society will hold its annual meeting at Washington, D. C., on May 7 to 9, 1907, under the presidency of Dr. Emil Gruening, of New York.

The American Ophthalmological Society will hold its annual meeting at Washington, D. C., on May 7 to 9, 1907, under the presidency of Dr. C. J. Kipp, of Newark, N. J.

The American Paediatric Society will hold its nineteenth annual meeting at the Arlington Hotel, Washington, D. C., on May 7, 8, and 9, 1907, under the presidency of Dr. B. K. Rachford, of Cincinnati.

Northern Medical Association of Philadelphia.—The regular meeting of this association was held on Friday evening, April 26th. Dr. M. B. Hartzell read a paper on Practical Points in the Diagnosis of Diseases of the Skin.

The American Laryngological Association.—The twenty-ninth annual congress of this association will be held at the Cosmos Club, Washington, D. C., on May 7th to 9th, under the presidency of Dr. Arthur W. de Roaldes, of New Orleans.

The Rochester (N. Y.) Academy of Medicine.—The programme for a meeting of the *Section in Surgery, Anatomy, etc.*, of this academy, held on Wednesday, April 17th, included a paper by Dr. James G. Mumford, of Boston, entitled *Opsonins in Surgery*.

The Late Dr. Lawrence F. Berry, of Philadelphia.—In an obituary notice of Dr. Berry, published in our issue for April 13th, we stated erroneously that he had died of erysipelas. We are now informed that his death was due to septicæmia.

The Richmond, Va., Academy of Medicine and Surgery.—The programme prepared for a meeting of this academy, held on Tuesday evening, April 23rd, included the following papers: *Peritonitis and Its Treatment*, by Dr. W. Lowndes Peple; *The Test Diet for Intestinal Disease*, by Dr. W. Brownley Foster.

The Buffalo Academy of Medicine.—The following programme was arranged for a meeting of the *Section in Obstetrics and Gynecology* of this academy, held on Tuesday evening, April 23rd: (a) *Delayed Lactation*, by Dr. George A. Himmelsbach; (b) *Conservative Operations on the Tubes*, by Dr. Edward C. Mann.

The Montgomery County, Maryland, Medical Society.—At the annual meeting of this society, held at Rockville, Md., on Tuesday, April 16th, officers were elected as follows: President, Dr. James E. Deets, of Clarksburg; vice-president, Dr. Charles Farquhar, of Olney; secretary-treasurer, Dr. John L. Lewis, of Bethesda.

The South Carolina Medical Association.—At the annual meeting of this association, held at Bennettsville, on April 10, 1907, the election of officers resulted as follows: President, Dr. Le Grand Guerry, Columbia; vice-presidents, Dr. R. A. Marsh, Edgefield; Dr. J. Adams Hayne, Greenville; Dr. Mary R. Baker, Columbia; secretary, Dr. Walter Cheyne, Sumter; treasurer, Dr. C. P. Aimar, Charleston.

The American Society of Sanitary and Moral Prophylaxis.—At a meeting of this society, held on April 11, 1907, the following officers were elected for the ensuing year: President, Dr. Prince A. Morrow; vice-presidents, Dr. Stephen Smith, Professor Edwin R. A. Seligman, and Mr. Francis Lynde Stetson; secretary, Dr. Edward L. Keyes, Jr.; treasurer, Dr. J. Riddle Goffe.

Philadelphia Personals.—Dr. M. Y. Pope, of Monticello, Ark.; Dr. Davis W. Price, of Atlantic City, N. J.; Dr. William H. Mehl, of Buffalo, N. Y.; Dr. E. O. Miller, of Aberdeen, S. D.; Dr. William H. Cobb, Jr., of Goldsboro, N. C.; Dr. John A. Bradley, of New Freeport, Pa.; Dr. S. F. Mioton, of New Orleans, La.; and Dr. W. D. Hicks, of Morgantown, W. Va., are registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

The Hampden County, Mass., Medical Society. The annual meeting of this society was held at Springfield on Tuesday, April 16th. The election of officers resulted as follows: President, Dr. C. A. Allen, of Holyoke; vice-president, Dr. George S. Woods, of Springfield; secretary-treasurer, Dr. T. S. Bacon, of Springfield. A short reception was held for Dr. George W. Gay, of Boston, president of the Massachusetts Medical Society.

Society Meetings for the Coming Week:

WEDNESDAY, May 31.—Hartford Medical Association, New York; Society of Alumni of Bellevue Hospital; Elmira, N. Y., Academy of Medicine.

THURSDAY, May 2nd.—New York Academy of Medicine.

FRIDAY, May 3rd.—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynecological Society, Brooklyn.

The Tennessee State Medical Association.—At the seventy-fourth annual meeting of this association, held at Nashville, on April 9-12, 1907, the election of officers resulted as follows: President, Dr. A. B. Cooke, Nashville; vice-presidents, Dr. R. E. Fort, Nashville, and Dr. Charles P. McNabb, Knoxville; secretary, Dr. George H. Price, Nashville; treasurer, Dr. W. C. Bilbro, Murfreesboro. Knoxville was chosen for the next place of meeting, on the second Tuesday of April, 1908.

The American Medical Editors' Association.—The thirty-eighth annual meeting of this association will be held at the Marlborough-Blenheim Hotel, Atlantic City, N. J., under the presidency of Dr. James Evelyn Pilcher, on Saturday, June 1st, and Monday, June 3rd. The association now comprises 150 members and a number of applications for membership will be acted upon at this meeting. The annual banquet will be held at the above named hotel, on Monday evening, June 3rd.

Personal.—Dr. Porter F. Chambers, consulting surgeon to the French Hospital and attending surgeon to the Woman's Hospital, has been appointed clinical professor of gynecology at the College of Physicians and Surgeons of New York (Medical Department, Columbia University).

Dr. Charles H. Peck, senior attending surgeon to the French Hospital, New York, has recently received from the French Government, through the Minister of Public Instruction and Fine Arts, the decoration of *Officier de l'instruction publique*.

Scientific Society Meetings in Philadelphia for the Week Ending May 4, 1907.—Tuesday, April 30th, Medicolegal Society. Wednesday, May 1st, College of Physicians; Association of Clinical Assistants of Wills Hospital; Thursday, May 2nd, Obstetrical Society; Medical Society of the Southern Dispensary; Section Meeting, Franklin Institute; Northwest Branch, Philadelphia County Medical Society. Friday, May 3rd, American Philosophical Society; Kensington Branch, Philadelphia County Medical Society.

The Philadelphia Pathological Society.—The regular semimonthly meeting of this society was held on Thursday evening, April 25th. Dr. G. Canby Robinson read a paper on Heart Block. Dr. E. Crispin read a paper on Metaplasia of Epithelium in Cysts of the Breast. Dr. John H. W. Rhein reported a case of Lyringobulbia. Dr. H. E. Radasch read a paper on Unilateral Absence of the Urogenital System and Its Relation to the Development of the Wolffian Duct. Dr. H. E. Radasch, Dr. R. S. Lavenson, Dr. Joseph McFarland, Dr. D. L. Despard, and Dr. J. A. Kelly exhibited card specimens.

The Medical Society of the County of Suffolk, N. Y.—The following programme was arranged for a meeting of this society, held at Patchogue, L. I., on Thursday, April 25th: A Case of Ectopic Pregnancy, with Specimen, by Dr. A. C. Loper, Greenport; A Case of Eye Enucleation for Calcareous Lens, by Dr. S. B. Allen, Riverhead; The Long Waisted Woman and Her Floating Kidneys, by Dr. A. Ernest Gallant, New York; Experiences with Rabies, Dr. W. A. Hulse, Bayshore; Dr. A. H. Terry, Patchogue; and Dr. Frank Overton, Patchogue; A Case for Diagnosis, by Dr. William Hugh Ross, Brentwood.

The Windham County, Conn., Medical Association.—The programme arranged for the one hundred and fourteenth annual meeting of this association, held at Williamantic, on Thursday, April 25th, included the following titles: A Food Poison, by the president, Dr. Robert C. White; Fractures and Dislocations, by Dr. James J. Donohue; Medical Legislation, by President Higgins, of the State

Medical Society; Peritonitis and Its Treatment, by Dr. Oliver C. Smith; Poliomyelitis, With Illustrative Cases, by Dr. John Weldon; Some of the Responsibilities of the Medical Profession, by Dr. Rienzi Robinson.

Bellevue Hospital Special Interne.—An examination will be held at Bellevue Hospital, on April 29th and 30th, at 3 o'clock, p. m., to fill two positions as special interne for a service of two years—the first year in the pathological department, the second year as interne on the outlying services. A certificate will be issued by the board of trustees on the completion of this two years' service. The examination will cover the subjects of anatomy, surgery, gynecology, medicine, therapeutics, clinical pathology, and pathological technique. Applications, with information regarding medical course and degree, with accompanying letter of endorsement as to character and attainments, may be sent to Dr. W. K. Draper, 121 East Thirty-sixth Street, New York city, before April 27th.

The Mortality of Boston.—The number of deaths reported to the Board of Health for the week ending April 20th was 216, as against 246 the corresponding week last year, showing a decrease of 30 deaths, and making the death rate for the week 18.70. The number of cases and deaths from infectious diseases was as follows: Diphtheria, 98 cases, 2 deaths; scarlatina, 55 cases, 1 death; typhoid fever, 6 cases, no deaths; measles, 5 cases, no deaths; tuberculosis, 55 cases, 26 deaths; smallpox, no cases, no deaths. The deaths from pneumonia were 31, whooping cough none, heart disease 24, bronchitis 3, marasmus 1. There were 18 deaths from violent causes. The number of children who died under one year of age was 27, under five years of age 40, persons over sixty years of age 51, deaths in public institutions 81.

The Medical Society of the County of New York.—The following programme was arranged for a meeting of this society, held on Monday evening, April 22nd: Clinical Report: Cardiac Hydrothorax: Report of a Case Aspirated Three Hundred and Eleven Times, by Dr. W. Travis Gibb. Papers: (a) The Heart in the Infectious Diseases: Infancy and Childhood, by Dr. Henry Koplik; (b) The Heart in the Infectious Diseases: Adult Life, by Dr. C. N. B. Camac; (c) Treatment, by Dr. David Bovaird, Jr.; Discussion by Dr. A. Jacobi, Dr. Beverley Robinson, Dr. Henry D. Chapin, Dr. Charles E. Nammack. The election of officers resulted as follows: President, Dr. Walter Lester Carr; vice-presidents, Dr. H. Seymour Houghton and Dr. William H. Park; secretary, Dr. John Van Doren Young; assistant secretary, Dr. J. Milton Mabbott; treasurer, Dr. Charles H. Richardson.

The Tolland County, Conn., Medical Society.—The one hundred and fifteenth annual meeting of this society was held at Rockville, on Tuesday, April 16th. Officers were elected as follows: President, Dr. Thomas F. Rockwell, of Rockville; vice-president, Dr. James Stretch, of Stafford Springs; secretary, Dr. E. P. Flint, of Rockville; delegate to the meeting of the State society, Dr. T. F. O'Loughlin, Rockville; county reporter, Dr. C. B. Newton, Stafford Springs; essayist for semiannual meeting, Dr. L. I. Mason, South Coventry; annual meeting, Dr. F. W. Walsh; delegates to meetings of county associations, Hartford county, Dr. E. O. Winship; New Haven county, Dr. C. E. Pendleton, Hebron; New London county, Dr. E. P. Flint; Fairfield county, Dr. Dean C. Bangs, Rockville; Litchfield county, Dr. Cramer, Mansfield; Middlesex county, Dr. E. T. Davis; Windham county, Dr. C. B. Newton.

The Springfield (Mass.) Academy of Medicine, for which preliminary plans were made several weeks ago (as noted in these columns), has become established by the receipt of its charter and the election of permanent officers as follows: President, Dr. W. A. Smith, of Springfield; first vice-president, Dr. John A. Houston, of Northampton; second vice-president, Dr. R. H. Seelye; secretary, Dr. Joel I. Butler; treasurer, Dr. H. W. Van Allen. The board of directors will include the two vice-presidents and the secretary and the following named: For one year, Dr. O. W. Roberts; for two years, Dr. O. W. Cobb, of Easthampton; for three years, Dr. Frederick W. Chapin; for four years, Dr. E. H. Guild; for five years, Dr. W. R. Weiser. The board of censors elected were: For one year, Dr. T. S. Bacon; for two years, Dr. J. B. Comins; for three years, Dr. J. B. Atwater, of Westfield; for four years, Dr. L. H. Clark, of Holyoke; for five years, Dr. F. B. Sweet.

The Marie Jaeger Memorial Prizes of the German Dispensary, New York.—To encourage research and to promote the scientific study of the cases under treatment at the German Hospital and Dispensary, it is purposed to offer three yearly prizes for medical essays: A first prize of \$100; a second prize of \$75; a third prize of \$50. The competition is to be open to members and collaborators of the German Dispensary and to members of the house staff of the hospital. The prizes are to be awarded on December 31st of each year. The essays are to be based on cases occurring in the service of the hospital and dispensary, and preference will be given to those embodying original thought or work. The right is reserved to withhold any or all prizes if the quality of the essays submitted is not sufficiently high or the numbers not sufficiently large. A committee will be appointed to pass on the essays. The Marie Jaeger Memorial Prizes were founded on the occasion of the fiftieth anniversary of the German Dispensary.

A Disastrous Fire at McGill University.—According to a dispatch to the *Evening Post*, McGill University was visited on April 16th, with the second serious fire within two weeks. The first fire destroyed the engineering building and the second practically destroyed the medical building, one of the oldest and most valuable on the college grounds. The results of the fire were disastrous, for, in addition to the usual equipment of a college medical building, the museum, one of the best on the continent, was destroyed. This loss cannot be estimated in money value, as the museum has been collecting for nearly three-quarters of a century, and contained many priceless specimens. The magnificent medical library, however, was saved, and this is no small comfort to the university authorities, as it contained many works as valuable in their way as the collection in the museum. The anatomical collection of Dr. F. J. Shepherd, who has spent a life time in preparing it—a collection famous throughout America—was totally destroyed.

Charitable Bequests.—By the will of Margaretta Reoche the bulk of her estate, which amounts to \$15,400, is bequeathed to the Philadelphia German Protestant Home for the Aged at Lawndale and the Home for the Aged and Infirm of the Evangelical Lutheran Church of Germantown. By the will of Catharine Brannan, St. John's Orphan Asylum receives \$200, and the Little Sisters of the Poor receive \$100. By the will of William Lichten the following bequests are made, conditional upon the death of certain heirs: Jewish Hospital Association, \$500; United Hebrew Charities of Philadelphia, \$500. In adjudicating the estate of Nicholas Lennig, the Orphans' Court awarded the following sums to the institutions indicated: Maternity Hospital, \$10,000; Children's Aid Society, Children's Country Week Association, Merchants' Fund, Pennsylvania Society to Protect Children from Cruelty, Sanitarium Association, Union Benevolent Association, the Zoological Society of Pennsylvania, and the University of Pennsylvania, \$5,000 each; the Philadelphia Dispensary, \$1,000. By the will of Fannie Simon, the Jewish Foster Home and Orphan Asylum and the Jewish Hospital receive \$100 each. The Jewish Maternity Hospital, the Philadelphia Sterilized Milk and Ice Society, the Model Farm at Doylestown, Pa., and the Children's Aid Society receive \$50 each.

The Fiftieth Anniversary of the Foundation of the Pathological Society of Philadelphia will be celebrated in Philadelphia on May 6th, 10th, and 11th. The exercises of this semicentennial of the Pathological Society will begin on Thursday evening, May 6th, at 8 o'clock with an exhibition meeting in the Mutter Museum of the College of Physicians. This exhibition will remain open on Friday from 9 a. m. to 4 p. m., and on Saturday from 9 a. m. to noon. On Friday, May 10th, the scientific session will be held at the College of Physicians. At 10 o'clock Dr. Frederick G. Novy, of the University of Michigan, will deliver an address on The Role of Protozoa in Pathology. Dr. A. E. Taylor, of the University of California, will deliver an address on The Dynamic Point of View in Pathology. Dr. Simon Flexner, of the Rockefeller Institute, will deliver an address on The Newer Pathology. At 4 o'clock in the afternoon, Dr. William Osler, of Oxford University, England, will deliver an address on Pathology and Practice, in the assembly hall of the Pennsylvania Hospital, Eighth and Spruce streets. Luncheon will be served at the University Club at 2 o'clock. On the evening of Friday, May 10th, a subscription dinner will be held at the Bellevue-Stratford Hotel. The Pathological Society of Philadelphia is prob-

ably the most active in the United States. Its published transactions date back to 1866. They constitute a valuable record of pathological conditions and contain a number of unique addresses and monographs on pathological subjects.

Philadelphia Streets.—The Director of the Department of Public Safety, recently appointed by Mayor Reyburn, of Philadelphia, has given orders to the lieutenants of police to see that the laws respecting the throwing of rubbish into the streets are enforced. It is quite time that the authorities of Philadelphia paid some attention to the cleanliness of its streets. At one time Philadelphia was noted for its clean public thoroughfares, but in the last ten years things have been going from bad to worse, until Philadelphia is probably one of the dirtiest cities in the country. Enough money is spent on street cleaning every year to have streets through which people might walk, ride in trolley cars, or drive without becoming covered with dust. There is no doubt but that a proportion of cases of disease in large cities is due to the breathing of street dust, and to the contamination of food exposed for sale by this same disagreeable and unhealthy material. The health reports of Philadelphia show that there is a considerable increase in cases which have been diagnosed as cerebrospinal meningitis, and it is reported that the Department of Health of the city has induced the Department of Public Safety to allow the firemen to flush the smaller streets. There is no real scientific proof that dirty streets cause cerebrospinal meningitis, but it is a proposition of public sanitation that needs no argument to say that dirty streets in a municipality are not conducive to health. Whether it could be proved that unclean streets actually produce disease is open to some argument. However, several years ago in a paper in the *Lancet* an English sanitarian alleged that the dissemination of street dust containing bacillus coli communis from horses is the cause of the exacerbations of summer diarrhoea in children. The proposition is not absurd, and it may be absolutely true. We, therefore, should like to call the attention of all municipalities to the importance of keeping their streets clean.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending April 20, 1907:

	April 20.		April 13.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	100	13	80	8
Scarlet fever.....	2	1	1	..
Varicella.....	64	..	69	..
Measles.....	411	8	469	6
Scarlet fever.....	478	27	438	14
Whooping cough.....	66	11	55	7
Diphtheria.....	331	40	341	39
Tuberculosis pulmonalis.....	491	210	466	200
Cerebrospinal meningitis.....	15	20	17	15
Totals.....	1,866	320	1,936	289

Statement of Mortality of Chicago for the Week Ending April 13, 1907, compared with the preceding week, and with the corresponding week of 1906. Death rates computed on United States Census Bureau's figures of midyear populations—2,107,620 for 1907, 2,049,185 for 1906:

	April 13, 1907.	April 6, 1907.	April 14, 1906.
Total deaths, all causes.....	717	686	621
Annual death rate in 1,000.....	17.74	16.97	15.80
Sexes			
Males.....	405	360	356
Females.....	312	326	265
Ages			
Under 1 year of age.....	137	125	108
Between 1 and 5 years of age.....	77	94	64
Between 5 and 20 years of age.....	48	51	39
Between 20 and 60 years of age.....	301	277	288
Over 60 years of age.....	154	139	129
Important causes of death			
Apoplexy.....	11	13	10
Brain disease.....	51	48	41
Brucellosis.....	24	17	17
Consumption.....	73	87	70
Cancer.....	36	26	21
Coronary lesions.....	11	9	5
Diphtheria.....	8	8	10
Heart diseases.....	60	58	56
Influenza.....	3	7	4
Intestinal diseases, acute.....	11	39	26
Measles.....	8	10	4
Nervous diseases.....	26	25	25
Pneumonia.....	132	146	133
Scarlet fever.....	9	13	17
Suicide.....	12	5	6
Typhoid fever.....	5	4	3
Violence, other than suicide.....	39	33	35
Whooping cough.....	6	10	7
All other causes.....	102	128	131

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

(Vol. 10, 1907)

1. Some General Principles in Connection with Protozoa as Factors in Disease. By CHARLES WANDER STILES.
2. Chronic Gastritis. By RICHARD F. CHASE.
3. A Graphic Method in Practical Dietetics. By IRVING FISHER.
4. Malaria. By CAMPBELL P. HOWARD.
5. Diagnosis and Treatment of Malarial Fever. By DOUGLAS VANDER HOOFF.
6. Nutritional Disturbances in Infancy Due to Overfeeding. By JOSEPH BENNEMANN.
7. Choice of Methods for Dilating the Gravid Uterus. By EDWARD P. DAVIS.

1. **Some General Principles in Connection with Protozoa as Factors in Disease.**—Stiles speaks of the impossibility to define protozoa. As prominent among the characters attributed to the group he mentions: 1. An unicellular structure, with one or several nuclei. 2. If several cells unite to form a colony, these cells still preserve their independent nature. 3. Tissues and organs are absent, in the sense that tissues are structures composed of similar cells similarly united, and organs are combinations of tissues, for specific functions; but a quasi tissue differentiation is more or less admitted for the protozoa, and organelle are distinctly admitted. 4. The usually microscopical size, with numerous exceptions. 5. Simplicity of structure, the word simplicity being more or less qualified. 6. Nonsexual reproduction by division, budding and spore formation, and often sexual reproduction. 7. Habitat in water or in a moist medium. It is no secret to zoologists that these characters, singly or in combination, are not sufficient to enable us to determine definitely, in all cases, whether a given organism is or is not a protozoon, and we should recall that when authors speak of the protozoa in the manner indicated they are doing so with more or less pedagogic license, in order not to plunge the beginner into uncertainty and confusion. In 1901 the author gave two biological rules: The first rule, to which at present a few exceptions are known, is that diseases which are accidentally spread by insects are caused by parasitic plants, particularly by bacteria. The second, to which no exceptions are as yet known, is that those diseases which are dependent on insects or other arthropods for their dissemination and transmission are caused by parasitic animals, particularly by sporozoa and worms. The author mentions further the double life cyste, the alternation of sexual and nonsexual reproduction. Years ago academic protozoology showed that in certain protozoa the nonsexual reproduction is limited in extent and is rapid, while the sexual reproduction may be still more limited in extent and is slower in comparison. Just why this limitation exists, whether the nonsexual reproduction is brought to an end because of the animals becoming exhausted, from a reproductory standpoint (perhaps an internal cause), or because of unfavorable surroundings (an external cause), or from a combination of both, cannot be discussed here, fundamental as the question is. Suffice it to say that the nonsexual reproduction in many unicellular animals is limited in extent. It is fortunate for us that this is so, for were it not, every untreated case of malaria would necessarily be fatal, since the organisms in man increase (potentially) in geometrical progression. Note the important point, however, that in malaria, caused by a parasitic protozoon, this nonsexual reproduction is rapid while it lasts, but that it is limited in extent by some factors not altogether clear at present. The exact causes of this limitation of nonsexual reproduction among the protozoa calls for extensive academic study,

but the results of such study will be of far reaching practical importance.

2. **Chronic Gastritis.**—Chase in mentioning treatment of chronic gastritis remarks that the object of treatment is to overcome the inflammation and if possible to restore the secretion and the impaired motor power of the stomach. Since any single cause of the inflammation is rarely discoverable, we must remove all conditions which may be considered as contributing factors. Hence, good hygiene is advised, which means regular habits as to eating, exercise and action of the bowels, repair of carious teeth, etc. In this condition starches are better digested in the stomach than under normal conditions, while proteids are but poorly cared for here, being digested almost entirely in the intestines. Bearing this point in mind and remembering that all mechanical, chemical, and thermal irritants are to be avoided, we have the key to dietetics in this disease. To free the stomach of mucus and to stimulate secretion and peristalsis, douching of the stomach internally with a warm alkaline and saline solution is the most valuable means we possess. For this purpose he employs his stomach apparatus, using the Rosenheim tube. The solution is injected with the amount of force desired, but it is always greater than that obtained by ordinary lavage. By the douche he believes that adherent mucus is more thoroughly removed than by simple lavage, while the stimulating action of the small forceful streams must be far greater than that produced by pouring water into a tube which has but one or two large eyes. For the purpose of dissolving mucus and increasing the secretion he uses from 10 to 15 grains each of sodium chloride and sodium bicarbonate in a glass of warm water, to be taken about fifteen minutes before meals. Some of the saline mineral waters may serve the same purpose in a measure, so also may some of the more elegant preparations containing the various salts. The phosphate or sulphate of sodium may be used, especially if there is constipation; nux vomica, condurango, and other bitter tonics may be of service. He believes that the large doses of from 15 to 20 minims of hydrochloric acid fail to accomplish the desired object; moreover, he thinks that they may do harm. Small doses of from 5 to 10 minims may in some ways prove beneficial, but there is no evidence to show that they stimulate the secretion of hydrochloric acid.

5. **The Diagnosis and Treatment of Malarial Fever.**—Vander Hooft reviews the well known treatment of malaria. He emphasizes the following points: 1. The quinine must be absorbed and enter the blood. 2. The drug must be administered until every parasite is destroyed. 3. The patient should remain in bed until the temperature reaches normal and remains normal. In order that the quinine be absorbed there are two essential features to which attention may be directed: 1. The patient's alimentary tract should be in a condition to favor absorption. To this end the bowels must be unloaded by means of a good dose of calomel or blue mass, followed by a saline. The diet should consist of soft, easily digested food stuffs, and as long as there is fever liquid diet alone is preferable. 2. The quinine must be given in a soluble form. Undoubtedly the surest way to give quinine is in solution with a mineral acid, e. g., quinine sulphate 5 grains, dilute hydrochloric acid 5 minims, water to 1 drachm. It is not very palatable, although the acid seems to offset somewhat the bitter quality of the quinine. The drug may be administered in powdered form in soft gelatin capsules, but it is not an uncommon experience to have them pass entire from the rectum. The solubility of the quinine when given in this form is aided by following the dose in a few minutes by 10 minims of dilute mineral acid. The best indication we have that the quinine is ab-

sorbed is the subjective sensation of ringing in the ears, and if this is lacking we may feel quite sure that the quinine is not in the blood except possibly in certain unusual cases of idiosyncrasy in this regard. The necessity of giving quinine for a definite period after the fever and symptoms have disappeared is not always sufficiently appreciated. A good general procedure in the handling of ordinary cases is the following: 5 grains of quinine every four hours, or 20 grains a day, for the first five days; then $2\frac{1}{2}$ grains every four hours, or 3 grains three times a day, for two and a half or three weeks. In severe cases larger amounts may be given, 30 to 40 grains daily. It is generally advisable to give one large dose, 10 or 15 grains, five hours before an expected paroxysm, and if this is done there is usually sufficient quinine in the blood to destroy most of the young hyaline forms that are produced by segmentation during the chill. In pernicious malaria every means should be employed to get the quinine into the circulation as quickly as possible. The drug must be given hypodermically—or, rather, intramuscularly—or even intravenously, and may also be given by the rectum. Of great importance is also rest. While by no means the best way to kill off the parasites, yet it is surprising to see what Nature can do when aided by rest, diet, care of the bowels, and general hygienic measures. It is very certain, however, that the rest plus the quinine is more efficacious than either alone. The post malarial anæmia is best treated with some form of arsenic.

MEDICAL RECORD.

April 20, 1907.

1. The Refraction Changes Dependent Upon Glycosuria, By GEORGE M. GOULD.
2. Some Unusual Results of Intrathoracic Compression, By THEODORE B. BARRINGER.
3. Dermatological Transitions, By OMAR M. WILSON.
4. Criminal Aspect of Venereal Diseases in Children. Based Upon the Personal Examination of Over Nine Hundred Children, the Alleged Victims of Rape, Sodomy, Indecent Assault, etc., By W. TRAVIS GIBB.
5. Observations on the Treatment of Tuberculosis in Arizona, By ISAAC W. BREWER.
6. The Stomach Tube in Diagnosis, By NELLIS BARNES FOSTER.
7. Operation for Intestinal Obstruction in a Child of Fifty-five Hours; Death in Seventeen Hours, By HOWARD CRUTCHER.

3. **Dermatological Transitions.**—Wilson remarks that, broadly speaking, there are two types of transitions encountered in the practice of cutaneous medicine: (1) The transitions of diseases; (2) the transitions of lesions. The former has two main subdivisions; false and true. Under false transitions he classes certain conditions in which a new lesion or a new chain of symptoms has been added to or grafted upon a preexisting disease or lesion. Cases are reported from time to time where, for example, epithelioma has developed upon the site of an old chancre or gumma; lupus vulgaris has been followed by epithelioma; lupus erythematosus has assumed an epitheliomatous tendency in its later stages, while cases of scabies, terminating in eczema, and initial lesion supervening upon herpes præputialis are of everyday occurrence. Many hold that most of the transitions due to traumatism are to be classed in the category of "cause and effect." The pruritus of scabies, relieved by constant scratching, changes into eczema, in patients predisposed to this disease—the inflamed, thickened, weeping condition being due to the mechanical irritation. Chronic eczema of the palms often changes into keratosis palmaris from a similar cause. The small warty papule, picked, scratched, or otherwise irritated, becomes epitheliomatous. Cases have been reported in which the primary lesion of syphilis has developed on the site of an old scabies lesion, or in which a herpes

præputialis has been followed by a definite indurated chancre. Psoriasis is particularly liable to have pseudo-transitions occurring in the natural course of the disease. Occasionally, however, we find cases in which true transitions have undoubtedly taken place. By the term "true transition" he means a gradual evolution of one process or disease into another, without any clearly defined boundary line to indicate where one process begins and the other ends. This may be exemplified in a variety of conditions: 1. Eczema, pemphigus, or psoriasis changing into pityriasis rubra—the further evolution of this condition into mycosis fungoides. 2. The transition of eczema seborrhœicum into mycosis fungoides. 3. The change of urticaria, pruritus, or eczema into dermatitis herpetiformis. 4. Eczema of the nipple into Paget's disease. 5. Rosacea into rhinophyma. 6. Senile wart into epithelioma. 7. Specific glossitis or tubercular syphilide into carcinoma. 8. Transitory changes in xeroderma pigmentosa. 9. Transitory changes in Sailor's skin disease. 10. Transitory changes in kraurosis vulvæ.

4. Criminal Aspect of Venereal Diseases in Children.

Gibb states that in the examination of nine hundred children he found that in about 33 per cent. there was absolutely no physical evidence that there had been any violation of their persons. Their hymens were intact, and there were no evidences of contusions, abrasions, excoriations, or discharges upon or about the genitalia which might have been caused by an act of violence. All suspicious discharges were examined microscopically, and if gonorrhœa existed an effort was made to secure an examination of the accused. In 17 per cent. of the cases there were evidences of complete and recent penetration. In other words, the tears in the hymen or fourchette, the abrasions, contusions, etc., of the mucous membranes and neighboring soft parts had not had time to heal between the time of the commission of the alleged crime and my examination. In exactly 50 per cent. of the cases there was evidence of complete, though not recent, penetration of the genital organs by some blunt object. All the injuries, tears, stretching, abrasions, and contusions had had sufficient time to heal between the first penetration and his examination, and there remained absolutely no physical evidence to show whether the assault had occurred ten days or ten months previously. He found that almost 13 per cent. of all the children examined, or one hundred and seventeen children, were suffering from venereal diseases in some form. Of these, eighty-one, or about 9 per cent., had gonorrhœal vaginitis, vulvitis, or urethritis. The macroscopical appearance in each case was verified by finding the gonococcus in a stained specimen of the discharge obtained at the time of the examination. 2.5 per cent. of the children had chancroidal ulcerations involving some portion of the genital tract or anus. These ulcers varied in number from one to a dozen or more. In about 1 per cent. there were venereal warts. There were three cases of gonarthritides and two of gonorrhœal infection of the rectum in boys. The author states also that not over two or three cases of syphilis had been noted in the whole list. The rarity of this ordinarily common form of venereal disease is due, he thinks, to the fact that the children were usually examined within a very short time after the commission of the alleged crime, and sufficient time had not elapsed for the development of the characteristic lesions of the disease. The nationalities of the accused were about as follows: Italian, 29; Chinese, 25; German and Hebrew, 16; Irish, 5; Greek, 4; Polish Hebrews, 4; colored, 4; United States, 2; not stated, 18. The ages of the children affected with venereal diseases varied from three to sixteen years. Two children, three years of age, suffered from gonorrhœa of criminal origin; fifty-eight were under

ten years of age and thirty-six were between fifteen and sixteen.

5. Observations on the Treatment of Tuberculosis in Arizona.—Brewer says that the health resorts of Arizona may be classified as follows: Summer stations: Flagstaff and vicinity. All the year round stations: Prescott and other points in the southern portion that have an elevation of about five thousand feet. Winter stations: Tucson, Phoenix, and Yuma. As to the question, what class of patients should be sent to Arizona the author says that incipient cases do best, and the sooner these patients come under the influence of this climate the better. Do not delay until the diagnosis has been confirmed by finding the bacilli in the sputa, but as soon as there is a well grounded suspicion of the disease send them out, provided they can afford it. Such patients nearly always recover. A certain proportion of those who come under the influence of this climate later in the disease also recover. When there is secondary infection, or a mixed infection, the prognosis is not so favorable. Although there have been some very encouraging reports of such patients during the past year, he does not think it advisable to send them to this region. They generally are too far gone to be benefited, and they are better left at home among their friends. Brewer believes that the impression that laryngeal cases do not do well here is well founded. The dryness of the air and the occasional dust storms tend to cause irritation of the laryngeal and nasal tissues, and all the patients with simple laryngitis that have come under his observation have done badly. It is therefore suggested that such patients be sent to a more moist climate. The greatest need, from a tuberculosis point of view, the author thinks, is a large sanatorium conducted on the same principle as the Adirondack Cottage Sanatorium. The Federal Government has given millions of acres of the public domain for educational purposes; why should it not devote some of its desert lands to be used for those sick with tuberculosis? There is plenty of land available for this purpose. Not far from where he writes is an abandoned military reservation which would answer admirably. Adjoining it is a large forest reserve which would be an excellent recreation ground for those who are convalescent.

BRITISH MEDICAL JOURNAL.

April 6, 1907.

1. Lord Lister and the Evolution of Wound Treatment During the Last Forty Years (*James Watson Lectures*), By Sir H. C. CAMERON.
2. Dr. Hughlings Jackson's Views of the Functions of the Cerebellum, as Illustrated by Recent Research (*Hughlings Jackson Lecture*), By Sir V. HORSLEY.
3. On Iodine Spirit Catgut, By J. S. RIDDELL.

3. Iodine Spirit Catgut.—Riddell desires to show that iodine spirit catgut fulfils all the conditions of an ideal catgut. These are: 1. It should be absolutely sterile. 2. In the course of its preparation it should not lose any of its tensile strength. 3. It should be readily and simply prepared and without any undue expense. 4. It should be absorbed completely, but only after it has served the purposes for which it was intended. In over one thousand operations it has proved absolutely trustworthy under all circumstances. The method of preparation is that described by Salkindsohn, the gut being immersed for eight days in a mixture consisting of tincture of iodine one part, proof spirit fifteen parts. Bacteriological investigation showed the gut to be sterile. It can be stored indefinitely in the solution in which it is prepared without becoming brittle. It is soft and very nice to handle. The writer has had no trouble from delayed absorption of ligature or suture. A fair test of this is its suitability for sub-cuticular suture.

LANCET

April 6, 1907.

1. The Pathology of Melanotic Sarcoma, in its Bearing on Their Operative Treatment (*Hunterian Lectures, I*), By W. S. HANDLEY.
2. The Increase of Insanity (*Lumleian Lectures, II*), By G. H. SAVAGE.
3. The Area of "Acute Abdominal Conflux" and the "Incision of Incidence," By C. P. CHILDE.
4. Amyl Nitrite in Hæmoptysis, By G. A. CRACE-CALVERT.
5. Aseptic and Septic Midwifery at the Liverpool Work-house Hospital, By W. ALEXANDER.
6. A Case of Multiple Circumscribed Lipomata Treated with Sodium Ethylate, By A. F. SAVILL.
7. The Teaching of the Hygiene of the Expectant and Suckling Mother, By J. F. J. SYKES.
8. The Role of the Blood Plasma in Disease, VI, By H. CAMPBELL.

1. Melanotic Sarcomata.—Handley has made a very careful study of a case of melanotic sarcoma occurring in a woman, aged thirty-four years, and concludes that in the earlier stages the processes of dissemination are essentially identical in carcinoma and in melanotic sarcoma. Dissemination is initiated by the access of malignant cells to the fine lymphatics, followed by the centrifugal spread of permeation along the main lymphatic plexus into which the primary growth pours its lymph, and by secondary permeation of small tributaries of this plexus. Embolic invasion of the regional lymphatic glands occurs, and around this fresh focus permeation recommences. Meanwhile, almost invariably in melanotic sarcoma, and sometimes in carcinoma, invasion of the blood stream takes place, either by local infiltration of veins from constant permeated lymphatics, or by malignant cells carried into the blood along the thoracic duct from invaded lymphatic glands. When this stage is reached dissemination in melanotic sarcoma and in carcinoma, respectively, develops along divergent lines. In carcinoma lymphatic permeation, aided by the escape of cancer cells into the serous cavities, usually remains until the end the main agent in producing secondary growths, a fact which appears to depend upon the almost invariable destruction of such epithelial cells as obtain access to the blood stream. The same mode of dissemination may sometimes occur in melanotic sarcoma, but as a rule the mesoblastic cells of melanotic sarcoma are able to thrive when lodged in a bloodvessel. Thus in the later stages of melanotic sarcoma the slow process of lymphatic permeation usually recedes into insignificance, and the patient dies with almost universal deposits, resulting from blood embolism, an event which only as a rare exception occurs in carcinoma.

3. The Incision in Acute Abdominal Affections.—Childe states that in a certain proportion of cases of "acute abdomen," the surgeon is in doubt as to the nature of the illness, even after the most exhaustive inquiry into the history, symptoms, and signs. A perforated duodenal ulcer, for instance, may be indistinguishable from an acute perforative or gangrenous appendicitis. Many of these patients have been ill two or three days, or longer, their abdomens are distended, and the general condition bad. In order to save the life of the patient the surgeon must find out the source of mischief at once, and remedy it as soon as possible. It is generally advised that the exploratory incision is made in the middle line below the umbilicus, and that the whole or part of the hand is introduced to ascertain the source of the trouble. The author deprecates this advice and advocates the right semilunar line as the position of election for the incision. The incision that hits the mark in these cases is the one that will give the best results. Almost every acute abdominal crisis occurs within the area bounded by (a) a perpendicular line from a point on the seventh left costal cartilage, one inch from the sternum to Poupart's ligament; (b) a line from the right anterior superior iliac spine to

the lower border of the thorax. This area the writer terms the "area of acute abdominal conflux." The incision which will lay bare this area is a vertical one midway between the two lines, i. e., one just about the outer border of the right rectus. This may be called the "incision of incidence" in the acute abdomen. The factors in the production of the acute abdomen may be divided into three classes: 1. Those that can only occur within the area. 2. Those that may occur either within or without the area. 3. Those that can only occur without the area. In class one are included appendicitis, pericæcal hernia, right ruptured pyosalpinx, right ruptured ectopic gestation, acute gallbladder complications, suppurative cholecystitis, and choledochitis, perforation, and gangrene, perforation of gastric and duodenal ulcers, and various intraabdominal hernia. Class two includes intussusception, obstruction by Meckel's diverticulum and by bands and adhesions, obturation of the intestine by a foreign body, perforation of typhoid and tuberculous ulcers, chronic mechanical obstruction of the large intestine, volvulus and knots, twisting of an ovarian or fibroid pedicle, gangrene due to embolism of the mesenteric vessels, and strangulated diaphragmatic hernia. Class three includes volvulus of the sigmoid flexure, intersigmoid hernia, left ruptured pyosalpinx, left ruptured ectopic gestation, and left diaphragmatic hernia. So that in men, every condition but volvulus of the sigmoid flexure may and most commonly does occur within the area of acute abdominal conflux. The practical conclusion, therefore, is that in a case of acute abdomen of doubtful origin the incision which will expose and give ready access to this area is that of election. The advantages alleged for the right semilunar incision in comparison with the median incision are: 1. That it directly exposes to sight that part of the abdominal cavity which in a large proportion of cases *must* contain the offending organ, and in another large proportion of cases does as a matter of fact do so. 2. That, therefore, in the large majority of cases it will enable the surgeon to deal directly with the offending organ and without the necessity for any second incision unless it be for drainage. 3. That for these reasons it makes, in the majority of cases, for the avoidance of delay and difficulty, two essentials of success in these operations, and will, therefore, give the best aggregate of results. 4. That in the minority of cases, in which it fails to expose the offending organ, the abdomen can be examined by touch just as well through the right semilunar as through the median incision. 5. That in those cases of intestinal obstruction where the patient can bear no more than the establishment of an artificial anus, it is close to the seat of election for this operation, the cæcum or lower ileum.

4. **Hæmoptysis.**—Crace-Calvert reports a series of cases in which there were twenty-two attacks of hæmoptysis occurring in five patients. In all of them the bleeding ceased at once or was remarkably diminished directly after the administration of amyl nitrite. Three minim capsules should be used which the patient should inhale quietly and regularly. The bleeding usually stops at once, though the patient may go on coughing up clotted blood. If the patient is excited or alarmed, or if the lungs appear to be irritable, a hypodermic injection of morphine may be given. None of the other remedies usually recommended are of any great value, ergot or adrenalin, for instance. Calcium salts are useless in profuse hæmorrhage, because of the time they take to act.

6. **Multiple Lipomata.**—Savill reports a case of multiple circumscribed lipomata occurring in a man, aged thirty-one years. Treatment consisted in painting the skin over each swelling with sodium ethylate once a week. All alcohol was cut off, and exercise encouraged. No fresh tumor appeared after the beginning

of treatment; the softer lipomata rapidly diminished in size, and at the end of a year and a half all but a few had disappeared. To-day, three years later, it is only with difficulty that a few slight swellings can be made out.

LA PRESSE MEDICALE.

March 30, 1907.

1. Luxations of the Patella and Radiography,
Accidents Due to Carbolic Acid,
By L. CHEVRIER.
By JUST LUCAS-CHAMPNIERE.
2. Hydrotherapeutical Treatment of Pneumonia,
By FERNAND LEVY.
4. The Critical Age in Man,
By R. ROMME.

1. **Luxations of the Patella and Radiography.**—Chevrier reports a case of luxation of the patella. The patient had previously had trouble with his knee, and had been under treatment for seven months. At the end of that time he had been pronounced cured and had enlisted in the army. While walking quietly along the street he felt a violent cracking in his leg and fell. The clinical picture presented by the dislocated patella is illustrated by reproductions of radiographs which show the abnormal position of that bone.

April 3, 1907.

1. The Cardiac and Pulmonary Reflexes,
By ALBERT ADAMS.
2. The Presence of Lecithin in Hypernephromata,
By G. DELAMABE and P. LEGENE.
3. Plastic Motors,
By G. VANGHETTI.
4. Respiratory Neuroses in Hysteria. Hiccough,
By ISSAILOWITCH-DUSCIAN.

2. **The Presence of Lecithin in Hypernephromata.**—Delamabe and Legene state that the presence of lecithin in the tissue of a hypernephroma is strong evidence in favor of the suprarenal origin of these tumors.

4. **Respiratory Neuroses in Hysteria. Hiccough.**—Issailowitch-Duscian concludes that as a hysterical neurosis hiccough is not a simple and insignificant symptom, that its manifestation is a true disease, and one which may drive one to despair.

LA SEMAINE MEDICALE.

April 3, 1907.

How to Recognize and Treat Congenital Luxation of the Hip,
By CALOT.

Congenital Luxation of the Hip Joint.—Calot describes, with the help of several illustrations, the manipulations to be followed in the reduction of these congenital dislocations, the anatomy of the parts, and the means to be employed to maintain the reduction when obtained.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT

April 2, 1907.

1. The Best Appendix Incision and Its Use in the Ligation of the External Iliac Artery, the Treatment of Femoral Hernia, and Major Intraabdominal Operations,
By RIEDEL.
2. What Can the General Practitioner Do to Alleviate the Suffering of Cripples?
By LANGE.
3. The Prevention and Treatment of Fæcal Fistulæ After Operations for Appendicitis,
By JANSSEN.
4. Concerning the X Ray Treatment of Hypertrophy of the Prostate and Its Technique,
By HÄNISCH.
5. Qualifications and Objects of a New Method of Inspecting the Urethra,
By GOLDSCHMIDT.
6. Active Hyperæmia in the Treatment of Arteriosclerotic Gangrene,
By RÖPKE.
7. Union of Fractures of the Patella,
By LANDWEHR.
8. Congenital Luxation of the Patella,
By BOGEN.
9. Concerning Onychia Pigmentosa,
By VÖRNER.
10. Concerning a Successful Treatment of Tuberculosis of the Eye with Tuberculin,
By ERDMANN.
11. A Case of Penetrating Gunshot Wound of the Abdomen,
By REICHARD.
12. How to Take Blood From the Ear of a Rabbit,
By PRYM.
13. A New Instrument for Testing Sensation,
By AUERBACH.

14. Concerning Intratumoral Exposure to the X Rays.

By JOSEPH HUBER.

15. To Lord Liston's Eightieth Birthday. By J. M. BISHOP.

16. Semmelweis of Ester. By WICKERLING.

1. **The Best Incision for Appendicitis.**—Riedel considers the zigzag incision to be the best in cases of appendicitis and recommends its use in the removal of tuberculous glands, for ligation of the external iliac artery, for the radical operation in femoral hernia, and in many gynecological operations.

4. **X Ray Treatment of Hypertrophy of the Prostate and Its Technique.**—Hänisch describes an apparatus by means of which the x rays may be applied to the prostate while the patient is in the knee elbow position. He states that he has found the apparatus to be perfectly satisfactory.

5. **New Method of Inspecting the Urethra.**—Goldschmidt's method is an application of endoscopy for the infection of the mucous membrane of the urethra, for which he has devised a special instrument.

6. **Active Hyperæmia in the Treatment of Arterio-sclerotic Gangrene.**—Kopke reports the case of a patient, fifty-nine years of age who lost several toes by gangrene and in whom the disease was progressing, but was checked by hot foot baths which excited an active hyperæmia of the affected parts. The arteries of the foot which had been nonpulsating began to pulsate again, and the patient made a good recovery.

7. **Union of Fractures of the Patella.**—Landwehr tabulates sixteen cases of fracture of the patella, some treated by suture, some not, and says that in many cases the nonoperative mode of treatment gives as good results as the operative.

8. **Congenital Luxation of the Patella.**—Bogen reports a case of this rare condition which he met with in a girl five years of age. He quotes a similar case reported by Wolf in 1900.

9. **Onychia Pigmentosa.**—Vörner reports a case of this nature which would appear to be of syphilitic origin.

ZENTRALBLATT FUER CHIRURGIE

March 30, 1907.

1. Urinalysis After Lumbar Anæsthesia with Stovaine.

By A. SCHWARZ.

2. The Problems of Urinæsch's Transplantation.

By K. VOGEL.

1. **The Urine After Stovaine Anæsthesia.**—Schwarz finds that the urine of patients who have been anæsthetized with stovaine in the spinal cord shows all the evidences of nephritis. Usually the changes can be seen in from three to four hours after the injection, but sometimes they do not appear until the second or third day. The albumin and casts disappear in mild cases in a few days, but Schwarz has found them as late as the eighth day. Permanent renal disturbance has not been observed.

ZENTRALBLATT FUER GYNAEKOLOGIE.

March 30, 1907.

1. Injuries to the Child's Cervical Vertebra in Difficult Extractions.

By J. HOFBAUER.

2. Two Cases of Pregnancy After Küstner's Operation for Inversion of the Uterus.

By A. KEILMANN.

3. The Decidual Reaction of the Maternal Vessels and Vessels in Extrauterine Pregnancy.

By R. MEYER.

1. **Injuries to the Vertebrae.**—Hofbauer reports four fatal cases in which difficult extraction was necessary in breech cases. In all instances the autopsy showed hemorrhages due to lesions in the vertebrae. The author advises, where difficult extraction is encountered, first a trial of the Smellie-Veit manœuvre. The direction of the traction must always be in the axis of the pelvis, since any torsion of the body begun with the breech of the child is likely to cause a separation, with subsequent hemorrhage, of the vertebral bodies. If the head cannot be easily delivered by the Smellie-Veit

method alone, each effort must be simultaneously accompanied by expression of the head from above.

2. **Inversion of the Uterus.**—Keilmann reports a case of pregnancy following Küstner's operation for inversion of the uterus. As is known, this operation consists basically in incising the posterior wall of the uterus, reducing the inversion and suturing the incision. In Keilmann's case the succeeding pregnancy and labor passed off normally, except that the placenta had to be removed manually. It was attached to the anterior uterine wall, and could not be expressed. The outcome of the case shows, says the author, that not only does Küstner's operation preserve the organ, but the latter retains its function as well.

ZENTRALBLATT FUER INNERE MEDIZIN

March 30, 1907.

1. The Diagnosis of Abscess of the Liver.

By E. AXISA.

1. **The Diagnosis of Abscess of the Liver.**—Axisa reviews the usual methods of establishing a diagnosis of hepatic abscess. Aspiration and exploratory incisions are suitable in some cases, but when the liver itself gives rise to no suspicions, operative measures are not advised. There are some cases in which the liver is not enlarged, and it is only by exclusion that this organ comes under suspicion. Axisa has found, by observations based on two cases that aleucocytosis with a simultaneous alimentary lævulosuria, especially if accompanied by a reversed relation between the ammonia and urea in the urine, points to an inflammatory process in the liver even if the diagnosis is not thus rendered absolutely certain. On repeated examinations, if the blood and urine continue to give these results, the diagnosis is tolerably sure.

LA RIFORMA MEDICA

March 3, 1907.

1. Contribution to the Trypsin Treatment of Cancer.

By ALDO DONATI.

2. I. The Microchemistry and the Post Mortem State of the Mononuclears. II. The Phagocytated Proteins and the Corporules of Kurloff Demel in the Mononuclears of the Guinea Pig.

By VINCENZO PATELLA.

3. Studies on the Typhoid Infection. The Suppurative Processes of Typhoid Fever.

By G. B. MARCOLELLI AND G. B. MARCOLELLI.

1. **Trypsin in Cancer.**—Donati reports a case of inoperable carcinoma in which he obtained encouraging results with trypsin. The patient was a man, aged fifty-two, suffering from cancer involving one testicle, the cord, and gradually extending to the pelvic structures. The malady advanced in spite of two operations, and did not improve under Röntgen ray treatment. The trypsin injections were used as a last resort. The dose was from 2 to 4 c.c. of a solution of 2 per cent. sterile trypsin, every other day. The slowly healing granulating wound was used as the site of injections, the latter being made each time in the neighborhood of the granulations. The treatment was continued for seven months, injecting in all 130 c.c. of trypsin solution in forty-five treatments. The result was that not only did the wound close completely over the growth, but the latter shrunk greatly in size and softened in consistency. At the end of six months the tumor no longer could be felt on abdominal and on combined palpation. The patient's pains and all discomfort had disappeared.

ROUSSKY VRATCH

March 30, 1907.

1. On the Question of the Use of the Daily Life of the Physician.

By V. N. ORLOFF.

2. A Review of the Latest Researches on Syphilis. Extracts from the Russian Literature.

By M. A. KOSLOV.

3. On Typhoid Bacteriemia.

By G. F. ZEIDLER.

4. On the Question of the Use of the Daily Life of the Physician. Extracts from the Russian Literature.

By V. N. ORLOFF.

5. On the Mutual Relations of the Diazo Reaction, the Bacteriæmia, and the Widal Reaction in Typhoid Fever. By A. I. GENKEN.
6. On the Technique of Intramuscular Injections. By S. N. BORMAN.
7. The New Test for Syphilis and Its Homogeneity as One-twelfth Objective. By N. P. KORNILOVITCH.

3. **Bacteriæmia in Typhoid.**—Zeidler studied the blood of typhoid fever by means of cultures taken at different times of the disease in a series of cases, numbering fifty in all. He found that the typhoid bacillus is undoubtedly present in the blood, beginning on the fourth day of the disease. The germ begins to disappear in the second half of the second week. The typhoid bacillus is found in the blood in the initial stage, not only in the severe cases, but also in the mildest forms and even in the relapses. He attributes his positive results to the method which he employed. This method is simple and comparatively rapid, taking from eighteen to twenty-four hours. It consisted essentially in the culture method suggested by Bryan and Kaiser involving the use of bullock's bile. Five c.c. of such bile were sterilized in a Koch's sterilizer, the blood of the patient was then obtained from the finger under aseptic precautions, and was dropped directly from the finger into the test tube with bile; 30 drops of blood were usually taken. The tube was shaken in order to dissolve the clots, and it was noted that its contents then became transparent, the red blood cells apparently dissolving completely. The tube was next placed in a thermostat for from twelve to twenty-four hours. Three platinum loopfuls of this mixture were transplanted upon ordinary agar slant and twenty loops upon green agar (Löffler's) or upon Conradi-Drigalski's agar in Petri dishes. The purpose of these agar plate cultures was to obtain the typhoid bacillus in pure culture excluding any bacteria that might have been mixed in from the finger. There is no special necessity for making cultures with Conradi's mixture of bile, peptone, and glycerin. The cultures obtained were tested with the agglutination reaction, using the serum of a typhoid patient, which had given a positive reaction to a standard culture. By this method in 82.35 per cent., or forty-two cases, in which the blood was examined between the fourth and the twenty-fifth day of the disease, typhoid bacilli were found in the circulation. Taking only the forty cases in which the first eleven days of the disease were studied the positive results were obtained in 97.5 per cent. The method, therefore, gives an extraordinarily frequent positive result.

4. **Bacteriæmia and the Agglutination Reaction in Typhoid.**—Stüllern studied ninety-six hospital cases of typhoid fever with reference to the presence of bacteria in the blood and the agglutination reaction. He employed the method suggested by Conradi, modified as described in the preceding article. He found that he could obtain positive results in 95 per cent. of cases in the first week of the disease independently of the severity of the case. In 25 per cent. of these cases the Widal reaction at 1:60 had been negative. Beginning with the second week, however, bacteriæmia was found to be much less frequent (in 60 per cent. of cases). Usually the bacteria disappear from the blood in the course of the second week, and in cases of severe typhoid in the third. There is a distinct parallelism between the duration of the bacteriæmia and the severity of the disease. When the bacteria disappear the agglutinating power of the blood is more or less markedly increased, and when the macroscopical reaction of agglutination at 1:500 is obtained bacteria can no longer be found in the blood. To ascertain extent, therefore, the agglutination reaction is an index to the presence or absence of bacteriæmia in typhoid. The bacteria reappear in the blood early, on the fourth day, of the relapses of the diseases. The bacteria remain

in the blood but a short time, the time depending upon the severity of the relapse. At the end of the relapse the bacilli disappear from the blood even before the second rise in the agglutinating reaction.

5. **Diazo Reaction, Bacteriæmia, and Widal Reaction in Typhoid.**—Genken studied nineteen cases of his own and eighteen of those considered by Stüllern in the preceding article, and concluded that the diazo reaction and the presence of bacteria in the blood in typhoid are parallel in their course, provided the patient does not take any medicines influencing the diazo test. In other words, the diazo reaction is obtained only during that period of the disease when the bacillus is found in the blood in a viable condition. The disappearance of the bacillus from the blood, or at least the complete agglutination of the bacilli which precedes their disappearance, is accompanied by a great diminution in the intensity of the diazo reaction or even in the disappearance thereof, notwithstanding sometimes the high temperature and the marked typhoid state, which depends upon the involvement of the intestines or the lungs. At this point, when the bacteria disappear or have reached the acme of agglutination the Widal reaction (which is the antagonist of bacteriæmia) is markedly intensified. In cases of typhoid treated by salol, calomel, or tannalbin, it is impossible to trace the parallel course of bacteriæmia and of the diazo reaction. The latter was absent and there was only a dark yellow or reddish yellow color of the foam of the urine which is not characteristic of the diazo test. We seem to be approaching the solution of the question as to the real cause of the diazo reaction, although further researches are needed to secure more positive evidence.

6. **Technique of Intramuscular Injections.**—Borman emphasizes the need of a thorough study of the technique of intramuscular injections, especially of insoluble mercury compounds, such as the salicylate which is injected in a ten per cent. emulsion in petrolatum. Opinions differ as to whether mercury in this form is absorbed, and it is important to secure the best conditions for absorption. One point in making the injections is to avoid injuring the sciatic nerve. A line should be drawn two fingers' breadth outward from the superior posterior spine, and is drawn vertically to the gluteal fold. An area of three cm. to either side of this line denotes the limits within which injections may affect the sciatic nerve. Embolism is the most dangerous complication of the method, and is accompanied by sudden pain in the chest, weakness, and a suffocating cough. The choice of the site for the injections has much to do with the frequency of embolism. The site preferred by the author practically corresponds to Gross's triangle. The latter is thus defined: The upper limit is the middle of a line drawn from the posterior superior spine and the great trochanter; the distance from the median line is defined by taking the outer third of the region of the buttock or the middle of a line drawn from the ischial tuberosity and the great trochanter. Around this point a circle about two fingers' breadth in diameter is drawn and the punctures are made exclusively within this circle. The length of the needle should be from four to six or even seven cm. Before the author used this area exclusively he obtained one case of embolism to each 150 injections; a considerable amount of induration also resulted. By the new method, however, he never had a case of embolism, although he employed it over a thousand times.

March 17, 1907.

1. Observations on the Motility and Agglutination of the Spirochæta Pallida. A Preliminary Communication. By D. K. ZABOLOTNI and P. P. MASLAKOVITZ.
2. A Review of the Latest Researches on Syphilis. Experiments on Monkeys (*Continued*). By N. A. TSCHLENOFF.

3. *Infant Mortality in Russia and the Measures for Its Prevention*. By I. G. KALAMKAROFF.
4. *On Experimental Atheroma of the Aorta in Rabbits and on the Influence of Iodides Upon This Process.* By I. G. KALAMKAROFF.
5. *Materials for the Study of Functional Diagnosis: 1. Pneumonia, Disturbances in the Heart and Lungs.* By I. G. KALAMKAROFF.
6. *The Treatment of Otosclerosis by Faradization.* By M. F. TSITOVITCH.
7. *A Case of Probable Secondary Infection with Syphilis.* By S. V. KOLOMOITSEFF.
8. *Infant Mortality in Russia and the Measures for Its Prevention.* By N. P. DANILOFF.
9. *Medical Report of the St. Petersburg Municipal Lying-In Asylum for 1905.* (Continued.) By I. A. KOLIKOFF.

1. Motility and Agglutination of the Spirochæta Pallida. Zabolotn and Maslakova continue some experimental data which they think has an important bearing upon the microbic character and specific nature of the spirochæta of syphilis. They succeeded in obtaining spirochætæ from patients in considerable quantities, thanks to an improved method, which involved the employment of Bier's suction apparatus. The Bier's suction pump or balloon was applied to the surface of chancres or papules. The result was that a very large number of live spirochætæ were obtained. At first the spirochætæ execute very lively and characteristic motions, turning about their axis and twisting like snakes. These motions can be most easily noticed by observing the highly refractive points (Centrozomes, nuclei?) in the organisms. When artificial light is used with an apochromat objective of 2 millimetres and a compensating ocular No. 12, these bright points are noted in the actively moving spirochætæ. Some still imperfect observations seem to point to the fact that the spirochætæ are formed in the same manner as the flagellæ of malarial organism or as the spermatozoa in coccidia. By adding physiological salt solution to the material, the spirochætæ may be kept alive in hanging drops for from a few days to a week. The agglutination of spirochætæ has been noted by the authors upon the addition of the serum of persons who have for a long time been suffering from syphilis. The spirochætæ become crowded together and fused with their ends into starlike groups and figures. Then they become more closely packed and twisted into balls, the outer organism still preserving their motility, which gradually becomes looser. Complete agglutination is noted within three or four hours. At this point the balls of spirochætæ reach a considerable size, and if the preparation be then stained the agglutinated germ may be seen in their fixed position, showing undoubtedly that we have to deal with a specific agglutination reaction. If the spirochætæ are allowed to remain in contact with the agglutinating serum they are subjected to marked changes. They are broken up into small fragments and stained but very faintly. The agglutinated masses become fragmented.

6. Otosclerosis Treated by Faradization.—Tsitovitch states that in persons suffering from otosclerosis the tensor tympani muscle either does not functionate at all or is very much weakened. Faradization causes the disappearance or the marked abatement of noises in the ear. The treatment also increases the range of hearing inasmuch as it improves the capacity for accommodation. The electrode is introduced into the orifice of the Eustachian tube, the tip of the electrode being pressed against the upper wall thereof. The second electrode is best placed in the angle between the lower jaw and the mastoid process. The strength of the current should differ in each individual, and as a rule the strongest current that can be borne should be employed. The duration of each treat-

ment should be from three to five minutes, and the frequency at least three times a week.

7. Reinfection in Syphilis.—Kolomoitseff reports a case of secondary infection in syphilis. The patient was an army officer who had had intercourse on May 28, 1905. On the following day he noticed an abrasion on the glans which healed after three days. Towards the end of June a small ulceration appeared at this spot. In due time the roseola appeared and injections of mercuric oxycyanide were ordered. The roseola disappeared under this treatment within a week. On referring to the hospital record it was found that this man, in July, 1898, was treated for a typical primary syphilis during which he had received sixty-five injections of mercury. In 1899 he had taken one hundred injections. In 1901 he married and his wife was since then perfectly well, had no miscarriages, and his three children were perfectly healthy.

AMERICAN JOURNAL OF OBSTETRICS

1. *Shall the Operative Treatment of Gonococcal Salpingo-oophoritis be Conservative or Radical?* By H. J. BOLDT.
2. *Pathological Changes Caused by the Gonococcus.* By B. M. ANSPACH.
3. *Gonorrhœa in Pregnancy and the Puerperal State.* By E. P. DAVIS.
4. *The Protection of the Innocent.* By H. A. KELLY.
5. *Restoration of Function in the Innocent.* By G. E. SHOEMAKER.
6. *The Blood Pressure During Pregnancy and the Puerperium.* By W. J. VOGELER.
7. *Blunt Dissection with Scissors in Plastic Gynecological Operations.* By T. J. WATKINS.
8. *The Regulation of Midwives in New York.* By J. M. MABBOTT.
9. *Traumatism as an Etiological Factor in Gynecology.* By C. S. WHITE.
10. *The Treatment of Pernicious Vomiting of Pregnancy.* By R. C. NORRIS.
11. *Prolonged Gestation.* By L. M. ALLEN.

1. Gonococcal Salpingo-oophoritis.—Boldt affirms that a comprehensive view must be taken when operative treatment becomes necessary in this condition. In acute cases with bulging and fluctuating vaginal fornix posterior colpotomy should be performed, the tubes palpated and incised at the most accessible point, the cavity irrigated, and gauze packed in the cavity as well as in the vaginal fornix. In chronic suppurative salpingitis the abdomen should be opened if it is probable that a portion of the annexa can be saved. Tubes which are not diseased should be spared. In certain cases it will be proper to completely remove the annexa, resecting a portion of an ovary which appears to be healthy and transplanting it upon the uterine cornu. Small cysts upon the ovary are no excuse for its sacrifice. The ovarian ligament should be retained, if possible. Menstruation may be retained by conservative measures upon the tubes and ovaries, even if pregnancy should not occur. If ovarian structure cannot safely be retained, the uterus and annexa should all be removed. The bad symptoms of the artificial menopause usually subside in three years or less.

2. Pathological Changes Caused by the Gonococcus.—Anspach states that this organism will not grow on ordinary media, though pus producing it differs in many ways from the streptococcus or staphylococcus. After its death a very powerful endotoxine is liberated, called gonotoxine, which causes intense inflammatory local reaction. Immunity to gonorrhœa is not obtained by either acute or chronic precedent infection. The gonococcus is very persistent and may remain latent in crypts and follicles for years. This explains the infections communicated by those who are supposed to have healthy tissues. This communicated infection may be returned to the original possessor and excite a fresh attack of gonorrhœa. The favorite sites of the disease

the glands of Bartholin, and the symptoms being frequent and painful urination and purulent discharge. The disease may extend to the peritoneum. Gonorrhœal valvovaginitis in children is most difficult to cure. Gonorrhœal ophthalmia in infants has most destructive results. By metastasis through the lymph channels various consequences are possible.

8. The Regulation of Midwives in New York.—Mabbutt reports the results of committee investigation of this subject as follows: 1. The extensive employment of the midwife in New York by the foreign population makes it impracticable to abolish this occupation by law. 2. Most of the midwives in New York are incompetent and lacking in skill. 3. Very many of them are engaged in the performance of criminal operations. 4. The position of midwife in New York ought to be regulated and supervised by competent authority. 5. This could be done in the following ways: a. By the enactment of a State law regulating it, and providing for examination, inspection, and license, as is the custom now in various States and countries. b. By the enactment of a law placing midwives under the control of the board of health and requiring to regulate, inspect, and license them. c. By the enactment of a law placing them under the combined control of the board of health and of physicians appointed from the counties of Kings and New York, and the Academy of Medicine.

ANNALS OF SURGERY

April, 1907.

1. Experiences in Cerebral Surgery.
By I. HARDLEY and J. H. KENYON.
2. Incisions and Limitations of Brain Surgery, with Especial View to Traumatism. By D. GRAY.
3. Palliative Trephining as a Palliative Measure in Tumors of the Brain. By H. H. BRUCE.
4. Operations for Neoplasms of the Tongue. By J. ROGERS.
5. A Method of Using the Tongue in Supplying a Defect of the Cheek. By W. BARTLET.
6. Injuries and Diseases of the Hyoid Bone. By R. WINSLOW.
7. Symptoms and Signs in Urinary Lithiasis. By C. L. LEONARD.
8. Tuberculosis of the Bladder. By G. WALKER.
9. Circumcision. A Plastic for Constricted Prepuces. By O. H. ALLIS.

2. Brain Surgery for Traumatism.—Gray comments upon the subject as follows: 1. In a narrated case, with autopsy, were presented the elements of severe brain traumatism, uræmia, and alcoholism. 2. Coma is common in each of such conditions, but if due to alcoholism it would gradually disappear, in the other conditions it would increase. 3. Pulse rate and tension may be the same in brain traumatism and uræmia. 4. Scanty secretion of albuminous urine, with coma and pulse of high tension, suggests uræmia. In the absence of a microscopical examination it may have been present in the given case. 5. There may be no external evidence of fracture of the skull. 6. A clot over portions of the motor area will not give motor symptoms in the presence of coma. 7. A local scalp incision may not reveal the location of a fracture, but extensive scalp exploration will reveal it, and will suggest trephining with the opportunity of controlling hemorrhage. 8. Increased vascular tension in the presence of brain pressure or nephritis may lead to serious or fatal hemorrhage into the intestinal canal, the mucosa being apparently normal. 9. Early operations are desirable in fracture of the cranial vault to control hemorrhage, and wide explorative incisions with dissection of the scalp may be imperative.

3. Palliative Trephining for Brain Tumor.—Bruce narrates five cases in which this procedure was followed. He quotes Horsley's views as to the great importance of such operations. Optic neuritis ending in

blindness, severe headache, and vomiting, may all be relieved or removed by a free opening in the skull and dura mater. Horsley believes that in no case of optic neuritis, excepting those of toxæmic or anæmic origin, should the opening of the dura be omitted. The opening should be a free one and subsequent improvement will depend upon the condition of the discs. Atrophic changes associated with macular figures indicate that the secondary changes in the discs will persist. The neuritis begins on the side of the brain lesion, and where both nerves are involved the operation should be performed on the side which shows the greater changes. Horsley insists that blindness can certainly be averted in intracranial disease by timely opening of the subdural space.

4. Operations for Neoplasms of the Tongue.—Rogers classifies the avenues of approach for such operations as through (1) the mouth, (2) the jaw, (3) the neck. Various methods of removal have been tried from time to time and abandoned, such as the elastic ligature, the wire or chain écraseur, and the actual cautery. The knife and scissors are now almost exclusively used in separating the tissues. Preliminary ligation of the lingual artery or even of the carotid greatly facilitates the operation. The operation through the mouth, which is deemed most satisfactory, is the Whitehead operation. Section of the jaw has been recommended by various surgeons, especially Roux, Sidillot, Bastianelli, and Billroth, of course they entail bad union of the bone segments as a possible consequence. Operations through the neck have been suggested by Regnoli, Czerny, Mikulicz, Kocher, and Cheever. The mortality from these operations has diminished from 40 to 10 per cent., and the permanent cures in cases in which a radical operation was possible have greatly increased. It is very desirable that one who is to undergo an operation should undergo pulmonary lavage and mouth and tooth cleansing for several days.

Letters to the Editors.

A FALLACY IN HIGHER EDUCATION.

BERESFORD, S. DAK., April 15, 1907.

To the Editors: A short time ago there appeared in the *New York Medical Journal* an interesting article, by Dr. R. W. Parsons, attacking the higher education of women on the ground that it made them anæmic, nervous, hysterical, etc. In his argument Dr. Parsons unwittingly attacked one of the greatest fallacies in the education of our young American women. We are forced to ask, Is it higher education which causes wreck of the female constitution, or is it custom which deprives this constitution of the free development and strength that the Creator has intended for it? Why is the highly educated boy so seldom a "nervous wreck"? Let us compare him with his sister.

In the high schools throughout the country there are very seldom appliances for the physical development of a child. It is true that physical exercise is indulged in now and then for five or ten minutes a day in the school room, where windows are thrown open to let out the foul air while the children are exercising; but superintendents have generally seen to it that their schools had football, baseball, and relay teams for their boys. What about the girls? Once in a while they have basket ball teams; that is all. On the other hand, when school is out, instead of going to a field to play, instead of riding horseback in the open air, most of these girls are expected to go home and either practice the rest of the afternoon at a piano lesson or work about the house helping to prepare supper for their stronger brothers; some of them are, also, bending over and sewing clothes during this free period of the day; they enjoy very little pure, fresh air.

Now, take the two sexes in college. Every well regulated college or university has or should have a good gymnasium for its men and women. Besides these gymnasiums, the young men have their outdoor baseball, football, relays, cross country runs, and outdoor athletics of all kinds. Custom generally decrees that the young women should never appear outdoors in their gymnasium suits. There would be some logic in this decree if the young women were held as naked as their brothers are when the latter appear in public. As a matter of fact, the young ladies are always fully clad and their suits, though healthful, are generally pretty.

There are but few institutions in the country where girls are given free play. Let a boy, in long skirts and corset, try to play lawn tennis or, when walking for his health, climb country hills while petticoats are entangling his feet. He would very soon be anæmic and even mentally diseased.

Let Dr. Parsons not condemn higher education for women until they are given a fair trial with their brothers. They are now far superior to the old time mother in bringing up their children rationally and intelligently, and the American woman, as a companion and helpmate to her husband, cannot be excelled. Suppose we see to it, therefore, that her physical being is developed as well as her mental. I defy any woman in the world to equal her then!

G. D. O'NEILL.

Proceedings of Societies.

THE NEW YORK ACADEMY OF MEDICINE.

SECTION IN GENITOURINARY DISEASES.

Meeting of February 26, 1907.

Dr. FOLLEN CAROL, Chairman.

An Unusual Case of Hæmaturia.—Dr. J. BAYARD CLARK related the case of a man, forty-five years old, who had been married seventeen years and was the father of two healthy children. There was no history of any venereal trouble. He had enjoyed good health up to ten years ago, when he had an attack of complete, universal alopecia, with a very slow return of hair. For the past five or six years he had suffered from eczematous patches on the hands. Seven years ago he had an attack of left renal colic, after which he thought he passed a small stone. Two years later he had an attack of renal colic on the right side, followed by the passage of a small, uneven stone. Since then he had had no further trouble of that kind.

His present illness began in June, 1906. A few days after having "caught a cold," he noticed that his urine was blood stained. There was neither pain nor frequency. The hæmaturia persisted, with slight fluctuations, but the patient remained in perfect health so far as subjective symptoms were concerned. Sometimes the first of the urine would be a little more bloody, sometimes the last portion would appear redder. One week before coming under Dr. Clark's observation he had an attack of pain in the right loin which lasted about an hour. This apparently had no influence on the course of the bleeding or any connection with it. The patient's general condition was good. He had lost no weight.

Upon examination, the prostatic urethra was found to be deeply congested, red, and granulating, and bled easily. The bladder was trabeculated, but otherwise normal. Both ureteral orifices were normal in appearance and emitted clear urine. Repeated examinations of the urine had shown nothing abnormal excepting red blood cells. A bacteriological examination showed cultures of *Staphylococcus albus*. The prostate was somewhat enlarged; the seminal vesicles were normal.

The hæmaturia in this case, Dr. Clark said, apparently came from the posterior urethra. He had succeeded in checking the bleeding temporarily by the local application of adrenalin in that region. Otherwise the urine passed by the patient was invariably of a deep claret color.

Dr. EUGENE BULLER said that in some of these cases of hæmaturia of obscure origin the blood seemed to come from the region of the ejaculatory ducts. In such cases disturbances of the prostatic sinus and deeper portions of the urethra were apt to aggravate the trouble, and more benefit would follow stripping the seminal vesicles.

Dr. F. TILDEN BROWN recalled one case of very profuse hæmaturia where the bleeding was unmistakably from the posterior urethra. The appearance of the urine in the case related by Dr. Clark pointed to a renal origin rather than one lower down. As an additional aid to diagnosis, he inquired whether the seminal elements had ever been found to be blood stained.

Dr. MARTIN W. WARE said that in one case of hæmaturia in which the onset and character of the bleeding had been very similar to those in the case related by Dr. Clark, and in which there was no evidence that it was of renal origin, the patient eventually had tuberculous epididymitis. The speaker inquired whether there were any signs of tuberculosis in this case, and suggested the use of the tuberculin test and the inoculation of the guinea pig to learn as to the presence of tuberculosis.

Dr. A. A. BERG inquired whether there was anything in the patient's general constitutional condition that might explain the hæmaturia. He agreed with Dr. Brown that the character of the urine indicated a lesion higher up than the posterior urethra.

The CHAIRMAN asked if any febrile disturbance had been noted.

Dr. LEONARD WEBER, in connection with the tuberculin test suggested by Dr. Ware, said he had employed the tuberculin prepared by the New York Health Department with very satisfactory results. On account of its strength, he suggested that the initial dose should not exceed one quarter or, at the utmost, one half of a milligramme.

Dr. CLARK said the specimen of urine just passed by the patient was unusually dark in color; as a rule, it was claret colored. The patient had never noticed any blood during or after coitus, which would indicate that the seminal ejaculations were not blood stained. The urine had been examined for tubercle bacilli with negative results, and the man had no subjective symptoms pointing to a tuberculous infection, nor were there any evidences of a constitutional disease. The patient had never been examined with the x ray.

A Case of Nephrectomy for Tuberculosis; Radiograph Giving Large Diffuse Shadows.

—Dr. F. TILDEN BROWN related the case of a woman, forty-three years old, whose mother had died of tuberculosis, but whose family history was otherwise negative. For the past six years the patient had suffered from gradually increasing frequency of micturition, accompanied by a dull, aching pain in the bladder. When she was admitted into the hospital, on August 14, 1906, there was a distinct tumor in the left lumbar region, posteriorly. An examination of the ureteral orifices showed that there was no urinary output from the right ureter, while that from the left was normal. On August 21st the right kidney was exposed. It was found to be enlarged and lobulated, and, as it was evidently tuberculous, it was removed. The diagnosis of tuberculosis was subsequently confirmed by the microscope. Since the operation, the patient had gained twenty pounds in weight, but there was still marked frequency of micturition, which was probably in part due to the thickened, firm

ureter, which had been left behind, and which was drawing the bladder upward.

An interesting feature of the case was the radiograph of the kidney, showing large diffuse shadows, which represented the site of a broken down, cheesy deposit now filled with phosphatic salts.

Dr. FULLER said that some years ago he operated in a case of pyelonephrosis in which he removed the kidney and fully one half of the greatly dilated ureter, and although subsequent to the operation the patient gained in flesh and improved generally, the painful and frequent urination persisted, and the patient was loath to admit that he had been much benefited. The case had impressed him with the desirability of dissecting out the entire ureter whenever it was possible to do so.

Nephrostomy Preliminary to Partial Cystectomy for Neoplasm.—Dr. BROWN presented the case of a woman, forty-two years old, who had suffered from hæmaturia for two years. Inspection of the bladder showed a neoplasm, of about the size of a large hen's egg, involving the wall of the bladder and impinging on the right ureteral orifice. As the growth was regarded as malignant, nephrostomy was deemed advisable as a preliminary measure to partial cystectomy. On August 11, 1906, the right kidney was exposed and opened, and an angled rubber catheter introduced, through which the kidney was still draining into a bottle which the patient wore with comparative comfort. At a subsequent operation the bladder was opened above the pubes, and the tumor, together with an elliptical section of the bladder wall, was excised. The bladder wound was then closed. The character of the vesical tumor was still uncertain.

Dr. FULLER said that the prolonged retention of a drainage tube in the pelvis of the kidney might be more apt to give rise to irritation of the kidney than would be the case had the ureter itself been brought out into the flank, thus allowing the kidney to drain by that method.

Dr. A. A. BERG said he was somewhat uncertain as to what the effect of the method of drainage adopted by Dr. Brown would be on the kidney, and he asked whether any further procedure with the ureter was contemplated. As it was, infection of the kidney would probably occur sooner or later. In a case of extensive carcinoma of the bladder which came under his observation some years ago, the speaker excised the affected part of the bladder wall and the terminal inch of the ureter, together with the lumbar glands, according to the method proposed by him, and transplanted the stump of the ureter into the fundus of the bladder. In that case there was freedom from recurrence for about a year. In two other cases he had been able to resect the bladder without interfering with the ureters.

Dr. WARE said that frequency of urination subsequent to nephrectomy was somewhat more common than was usually supposed. Røvsing, in a recent article, reported sixty-five cases of tuberculosis of the bladder, and most of these he regarded as the result of a descending infection. In common with the great majority of writers on this subject, he was in favor of resection of the ureter, but in addition to that he had found that these cases of tuberculosis of the bladder called for a good deal of treatment. In all of them there was diminished capacity of the bladder, due to pathological changes in its wall. In connection with Dr. Brown's second case, Dr. Ware asked whether it would not have been feasible to draw the ureter into the bladder. In one of Dr. Ware's cases he had had recourse to that procedure, stripping the ureter and drawing it into the bladder. The procedure was not very difficult.

Dr. BROWN said that when the ureter was dense and thickened, he believed it should be removed as thoroughly as possible at the time of the removal of the

kidney. Its complete extirpation was not always practicable, and in the case he had shown only a certain amount of it was removed. In speaking of tuberculosis of the kidney and bladder, Dr. Brown said he had been surprised and gratified at the number of recoveries on the part of the bladder after removal of the tuberculous kidney, even in cases where fully one half of the involved ureter was left behind. In his own case it would be impossible to give the urine any other outlet in the future, as the ureter had been severed between two ligatures.

Two Cases of Large, Rough Mulberry Calculi, with Few or No Subjective Symptoms.—Dr. EUGENE FULLER reported these cases. The first specimen shown had been removed from the bladder of an old man who had a large amount of residual urine as the result of an enlargement of the prostate. Prostatectomy was undertaken, and when the bladder was opened, a large calculus, weighing considerably over an ounce, and of the rough mulberry variety, was found and removed. The patient had never complained of symptoms of stone.

The second specimen had been removed from a man who had long suffered from symptoms of prostatic enlargement. There was urinary incontinence, but the urine had remained perfectly clear. He had never suffered any pain, but complained of frequent urination and wetting the bed. Examination showed an atonic and distended bladder. The patient at first declined an operation, and resorted to the use of the catheter for relief. In the course of a few months his bladder became infected, and subsequently a large mulberry calculus was detected and removed.

In cases of this character, Dr. Fuller said, where the bladder harbored residual urine, and the stone rested in a large chamber of such residual urine, its presence was not apt to give rise to symptoms, as the calculus was not caught at the neck of the bladder and squeezed at the end of the urinary act.

Acute Hæmorrhagic Cystitis in a Child.—Dr. JAMES PEDERSEN reported the case of a boy of thirteen years, who had had an attack of acute gastroenteritis, following overindulgence in lobster salad, about three weeks before the onset of his bladder symptoms. These were frequency of micturition, tenesmus, and bloody urine. The tenesmus was severe, requiring the use of morphine. On the second day after the onset of the hæmaturia, he passed two shreds, which were regarded at the time as evidences of membranous cystitis, but which, after examination by two pathologists, proved to be shreds of fibrin with red blood cells and a few normal epithelia caught in the meshes.

When the boy was seen by Dr. Pedersen in consultation, four days after the onset of the bladder symptoms, the hæmaturia had almost ceased, and there was a decided diminution in the frequency and in the severity of the tenesmus. A soft rubber catheter was passed to exclude retention and overdistention from obstruction by similar shreds. The bladder was then gently irrigated with two ounces of a 1 to 5,000 silver nitrate solution. The return flow was normal. The bladder symptoms subsided rapidly, no more shreds appeared and the patient went on to a complete recovery. Three months without symptoms had elapsed since the attack.

Malignant Hypernephroma.—Dr. A. A. BERG read this paper. He stated that from 1898 to January, 1907, there had been in all the services of Mount Sinai Hospital twenty-one cases of hypernephroma. Only the malignant variety would be considered in his paper, his intent being to discuss its clinical course, diagnosis, and treatment.

Clinical Course.—In six of the twenty-one cases in his series, the initial manifestation had been a dull

ache or a sharp pain in the loin or side of the abdomen. The pain sometimes radiated to the lower extremities, but was not of a colicky character. This pain existed for a variable time, ranging from two months to two years, before any other symptom or physical sign of the malady appeared. Then there occurred an attack of hæmaturia or a tumor became palpable in the loin. In some of these cases blood was observed in the urine microscopically for some time prior to the occurrence of macroscopic hæmaturia. The amount of blood in the urine varied. Sometimes it was very profuse and again it was only slight; sometimes there were long ureteral casts of blood in the urine. In comparison with other malignant tumors of the kidney, the hypernephromata were less likely to be attended by hæmaturia.

In some of the patients whose attention was first drawn to their disease by an attack of hæmaturia, there would be found, on examination, a tumor in the loin. In others, again, no physical abnormalities were to be detected by the most careful examination, nor did the examination of the urine throw any light upon the cause of the hæmaturia. At the time of the bleeding the cystoscope would enable us to determine from which kidney the blood was derived.

There was a third class of patients who noticed nothing abnormal about themselves, except a progressive loss of weight, weakness, and a feeling that slight exertion caused them to be much fatigued. The presence of a steadily growing tumor in the abdomen was the first indication of the disease in another class of these patients. Sometimes the tumor was painful and tender, and again neither of these characteristics was present. The tumor varied in shape, size, consistence, and fixity. The larger tumors were of unequal consistence, hard in places, softer and elastic in others, but never truly fluctuating. The nodular character seemed to belong to all the tumors. The smaller growths were usually freely movable; the larger ones were more or less fixed to the surrounding structures. In some instances a normal lower pole of the kidney could be palpated below the tumor.

In still another class of cases the first evidence of the disease was manifested by one or more metastatic tumors. These were most frequently situated in the flat bones (the bones of the skull, sternum, or pelvis), or in the lung, but they might be found in any organ of the body. They were usually painful and grew rather slowly. When located in the bones, they did not excite any periostitis, but gradually eroded them, so as to occasion spontaneous fractures. Finally, there were some patients who suffered with hypernephroma in whom the initial symptoms and entire clinical course were very irregular.

In its subsequent course and duration, the disease was very variable. Some patients might go along for years with an occasional attack of hæmaturia, or with lumbar pain, or with a nodular tumor in the loin, or with several of these symptoms. They did not seem to be very much affected by their malady, but remained in fairly good health and were able to attend to their duties. In other instances there was rapid emaciation, with cachexia. In all such cases the writer had found that the tumor was a rapidly growing one. In the final stages of the disease the patients were cachectic and emaciated; they presented a large nodular tumor in the loin, sometimes suffered with recurrent attacks of hæmaturia or with intense pain, and might present metastases in the lungs, bones, or other parts.

In summing up his remarks regarding the diagnosis of malignant hypernephroma, Dr. Berg said he would insist on the importance of the characteristics of the renal tumor, on the slower course of hypernephromata, on their much greater frequency of occurrence as compared with other varieties of renal tumor, on their less

frequent association with hæmaturia than was the case with sarcoma or carcinoma of the kidney, and on their greater likelihood to be attended by continued pain in the loin or abdomen. Furthermore, he emphasized the importance of a careful palpation of the kidney regions and urinary analysis in all cases of tumor of the bones, lungs, or other internal parts.

Treatment.—The radical treatment of hypernephroma, like that of other malignant tumors, should be by a complete removal of the neoplasm. The indications for operation, however, were not the same as in sarcoma and carcinoma. If the course of the neoplasm was slow, it was better, in the writer's opinion, not to interfere surgically, but to keep the patient under observation. From his experience, very little was to be gained by the removal of large, adherent tumors. The immediate operative mortality in such cases was very high, and should the patient survive the operation, local or distant recurrence was almost sure to take place within a short time, often before the wound in the loin was healed.

Of the twenty-one patients with hypernephroma observed at Mount Sinai Hospital, twenty were operated upon. In fifteen, the kidney tumor was removed; of these, four died within twenty-four hours of the operation; three died of local and distant recurrence several weeks after the operation; one died several months after the operation with a local recurrence; one had a recurrence in the skull, which was partly removed, and she had probably died since; four were lost sight of; one had remained well for two years; and one was still in the hospital. In several of the others there were various complications that caused death. Of all the cases, there was only one that had positively remained well for two years after the operation.

Shreds in the Urine.—Dr. DE SANTOS SAXE read a paper on this subject (see *New York Medical Journal*, March 2, 1907, p. 393).

The discussion of the papers by Dr. Berg and Dr. Saxe was postponed until the April meeting.

New Inventions.

ONE HAND CONTROL UTERINE DILATOR.

BY FREDRIC GRIFFITH, M. D.,
New York.

As the custom of the writer is to do most of his surgical work unaided by side assistants his development of new or modifications of recognized surgical implements has always been along the line of simplicity. Application of this principle in the instance of the common uterine dilator does away with the control thumb screw clamp attachment, replacing it, as shown in the illustration, by a spring ratchet device fitted to the end of the handles. The value of the improvement con-



sists in the provision thus afforded for the operator to manipulate the instrument with one hand, leaving the other free for holding the speculum or tenaculum forceps during the dilatation of the cervix, besides doing away with cross handing awkwardness when freeing the instrument.

49 EAST SIXTY-FOURTH STREET.

Book Notices.

Proposed Sterilization, Including Animal Parasites. By ROBERT L. PERRETTE, M. D., Pathologist to the Germantown Hospital, Philadelphia, etc. Philadelphia: P. Blakiston's Son & Co., 1907.

There is one of the well known series of quiz compends which have been regarded with favor by medical students of a generation. It is no easy task to make a judicious selection from the voluminous literature of bacteriology and immunity and compile a satisfactory exposition of the main facts in so small a compass. The author is to be congratulated on his success. His work is a model of clearness and condensation. The many excellent illustrations add considerable interest to the text.

Race Culture; or, Race Suicide? (A Plea for the Unborn. By ROBERT REID RENTOUL, Doctor of Medicine; Member of the Royal College of Surgeons (Eng.), etc. London: The Walter Scott Publishing Company, Ltd., 1906. Pp. xiv-182.

The author intends this book to be a second and enlarged edition of his *Proposed Sterilization of Certain Mental and Physical Degenerates*, published in 1903. In the work before us the author calls the attention of the public to the large and increasing number of degenerates in Great Britain, using the word degenerate instead of insane or lunatic, as it has been used by Max Nordau, and proposes certain methods to avoid the production of such unnecessary degenerates and to insure the begetting of a healthy race. After giving the causes of national deterioration and degeneracy he advocates measures to remedy them. It is a plea for the unborn child.

Traité des maladies de la voix chantée. Par le Dr. ANTOINE PERRETIÈRE, ancien interne des hôpitaux de Lyon. Paris: A. Poinat, 1907. Pp. 303.

This is an excellent work, written, as the author states, for the laryngologist who has not studied an essential part of his specialty, voice production. The larynx, although indispensable in song, is not the only organ concerned in its proper and elegant emission, the cavity of the mouth and the facial bones playing quite as important rôles. Dr. Perretière hopes that the perusal of his book will enable the throat specialist to give other advice to a singer seeking relief than a mere admonition to give his voice a rest. Singing does not depend solely upon a healthy throat, but upon the entire organism, any pathological condition interfering with it and even some physiological functions, such as menstruation. The book is sufficiently popular in style to render it of value to singers, but we cordially recommend it to laryngologists, especially to those who have not thought it worth while to study voice production as an art.

Medical Diagnosis. A Manual of Clinical Methods for Practitioners and Students. Fifth Edition. Greatly Enlarged and Revised to Date. By J. J. GRAHAM BROWN, M. D., F. R. C. P. E., F. R. S. E., and W. T. RITCHIE, M. D., F. R. C. P. E., F. R. S. E. New York: Imperial Publishing Company, 1907. Pp. 508.

The collaboration of the authors has produced a practical treatise on medical diagnosis which is equally satisfactory from the clinical and the laboratory standpoints. Modern chemical, microscopical, and bacteriological methods are discussed in sufficient detail to enable the progressive physician himself to employ in many cases these important means of diagnosis. The usual methods of the bedside examination of the patient are taught in a sound and conservative manner, and the newer subjects, such as the estimation of the blood pressure, skiagraphy, and the Litten diaphragm phe-

nomenon, are adequately described. In Great Britain the work has met with such favor as to reach a fifth edition, and we believe the merits of this American edition will cause it to be well received in this country.

BOOKS, PAMPHLETS, ETC., RECEIVED

Diagnosis of Organic Nervous Diseases. By Christian A. Herter, M. D., Professor of Pharmacology and Therapeutics at Columbia University. Revised and Enlarged by L. Pierce Clark, M. D., Visiting Neurologist to the Randall's Island Hospitals and Schools, etc. New York: G. P. Putnam's Sons, 1907.

The Treatment of Disease. A Manual of Practical Medicine. By Reynold Webb Wilcox, M. A., M. D., LL. D., Professor of Medicine at the New York Post-Graduate Medical School and Hospital, etc. Philadelphia: P. Blakiston's Son & Co., 1907.

Letters on Psychotherapeutics. By Professor H. Oppenheim, of Berlin University. Translated by Alexander Bruce, M. D., F. R. C. P. S., Editor of the Review of Neurology and Psychiatry. Edinburgh: Otto Schulze & Company, 1907. (Through G. E. Stechert & Co., New York.)

Miscellany.

The Habitant's Friend.—We reprint the following verses from last Sunday's *Sun*. We cannot doubt that they refer to the late Dr. William Henry Drummond, of Montreal:

Marie, you take dat stuff away
I don' wan' eat to night
An' bring dose clo'es I buy las' year.
An' dat shirt dat's clean an' white;
For I go to Mon reat
Only 'bout sixty mile;
You won' min' to be alone,
I come back in little while.

I don' care it was ten 'tousan' mile;
My heart he tell me right,
He say: "Go to Mon reat,
Go, Pierre, to night."
I won' spen' de money for train,
I walk alone all way,
An' I tol' you, my frien' he dead?
He die yesterday.

Dat man, he was kind to me
An' to you an' baby, too,
When you were seek and so poor
You don' know what to do
An' every day for mor' a month
He come an' make you well,
An' he give money, but you don' know—
Pierre he never tell.

An' he say to me: "Cheer up, Pierre,
De spring he soon be here,
Dis snow an' ice dey go away
So don' you never fear.
Your wife an' chil' dey bot' get well
In 'bout a week or so."
An' you bot' get well, jus' as he say;
I wonder how he know?

An' when I say in few months' time:
"What have I to pay?"
Why, he look at me an' laugh an' laugh,
An' den I turn away
An' lak a fool I bow my head
An' not a word could speak,
I aches' cry jus' lak a chil'
An' feel so very weak.

But I shake his hand an' den he say
Something kind to me;
Mon Dieu! de tears come to my eyes
So bad I could not see;
An' I jus' say: "Merci, my frien',
For what you done to me."

'Bout an hour ago dey tol' me
How he died in Mon reat,
How de peoples say dey lose deir frien'—
Peoples big an' small;
How dey honor him, not because he rich,
But for being kind,
An' dey all say in Canada
He de bes' man you can find.

Marie, if some one ask for me
You tol' him what I said,
An' say I go to Mon reat
My frien' is dead.

The Late Dr. George B. Fowler.—At a meeting of the Medical Association of the Greater City of New York,

held April 15, 1907, the following report was presented and adopted:

Whereas, It has pleased the Almighty to call from his earthly labors George Bingham Fowler, *Resolved*, That the following minute be entered upon the records of the Medical Association of the Greater City of New York:

Dr. Fowler was born in Alabama in 1847 and died in the Borough of Manhattan, New York city, on March 6, 1907. He was graduated from the College of Physicians and Surgeons, New York, in 1871. He served as Assistant in the Department of Physiology in that school under the late Professor John C. Dalton, and for many years, in one or another capacity, he was connected with the metropolitan board of health. He was associate editor of the *American Journal of Obstetrics*, contributing many articles on the diseases of children. Under Mayor Strong he was commissioner of health of the City of New York. He served for years as attending physician to the New York Infant Asylum and to Bellevue Hospital. In the latter hospital he was instrumental in founding the Training School for Male Nurses. He was professor of clinical medicine at the New York Polyclinic, and later at the Postgraduate Medical School, and he was an active member of many of the local and national societies. He was twice elected president of the Medical Society of the County of New York.

Amidst all these activities his genial temperament prevailed to form warm friendships and deep loyalty on the part of a wide circle of patients. He carried sunshine into the sickroom and imparted courage to the ailing. Here his presence was indeed a benediction. In civil life he set an example of fidelity to duty which might well be emulated by others.

(Signed) EGBERT H. GRANDIN,
Chairman.
WILLIAM H. PORTER,
LEONARD WEBER.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon General, United States Public Health and Marine Hospital Service, during the week ending April 19, 1907:

Places	Date	Cases	Deaths
California—San Francisco.....	Mar. 23-30.....	1	
Florida—Duval County, Jacksonville.....	Mar. 30-Apr. 6-13.....	1	
Florida—Hillsborough County.....	Apr. 6-13.....	1	
Florida—Polk County.....	Apr. 6-13.....	1	
Florida—Santa Rosa County.....	Apr. 6-13.....	1	
Georgia—Augusta.....	Apr. 2-9.....	4	
Illinois—Chicago.....	Mar. 30-Apr. 13.....	4	
Illinois—Galesburg.....	Mar. 30-Apr. 6.....	3	
Illinois—Peoria.....	Mar. 30-Apr. 6.....	17	
Indiana—Indianapolis.....	Mar. 31-Apr. 7.....	4	
Indiana—South Bend.....	Mar. 30-Apr. 6.....	2	
Iowa—Everts.....	Mar. 30.....		Present
Iowa—Spencer.....	Mar. 30.....		Present
Kentucky—Louisville.....	Mar. 28-Apr. 11.....	11	
Louisiana—New Orleans.....	Mar. 30-Apr. 6.....	3	
Massachusetts—Chelsea.....	Mar. 30-Apr. 6.....	1	
Massachusetts—Haverhill.....	Mar. 30-Apr. 6.....	1	
Massachusetts—Lawrence.....	Mar. 30-Apr. 6.....	27	
Michigan—Detroit.....	Mar. 30-Apr. 13.....	12	
Minnesota—Winona.....	Mar. 30-Apr. 6.....	2	
Mississippi—Natchez.....	Mar. 23-Apr. 6.....	1	
Missouri—St. Joseph.....	Mar. 30-Apr. 6.....	9	
Missouri—St. Louis.....	Mar. 30-Apr. 6.....	4	
New Jersey—Hoboken.....	Apr. 6-13.....	1	
New York—New York.....	Mar. 30-Apr. 6.....	4	
North Carolina—Charlotte.....	Mar. 30-Apr. 13.....	2	
Ohio—Cincinnati.....	Mar. 29-Apr. 6.....	1	
Ohio—Cleveland.....	Mar. 24-Apr. 12.....	2	
Tennessee—Nashville.....	Apr. 6-13.....	1	
Texas—Bell County.....	Mar. 23-Apr. 6.....	206	
Texas—Galveston.....	Apr. 5.....	5	
Texas—San Antonio.....	Dec. 29-Apr. 6.....	9	
Washington—Spokane.....	Mar. 30-Apr. 6.....	6	

Yellow Fever—American.....	Mar. 29-Apr. 6.....		
Yellow Fever—Mexican.....	Mar. 29-Apr. 6.....		
<i>Smallpox—Foreign</i>			
Brazil—Rio de Janeiro.....	Mar. 3-19.....		
Canada—Winnipeg.....	Mar. 29-Apr. 6.....		
China—Nanking.....	Feb. 1-13.....		
China—Shanghai.....	Feb. 27-Mar. 9.....		
Egypt—Cairo.....	Mar. 11-18.....		
Egypt—Marsa Matruh.....	Mar. 1-13.....		
Egypt—Port Said.....	Mar. 16-22.....		
India—Bombay.....	Mar. 3-19.....	1	
India—Calcutta.....	Feb. 23-Mar. 9.....	68	
India—Rangoon.....	Feb. 23-Mar. 9.....	1	
Italy—Genoa.....	Mar. 21-28.....	2	
Italy—Turin.....	Mar. 9-16.....	1	
Mexico—Aguascalientes.....	Mar. 21-30.....	6	
Mexico—Mexico City.....	Mar. 2-9.....	12	
Mexico—Tuxpam.....	Mar. 26-Apr. 2.....		
Portugal—Lisbon.....	Mar. 16-22.....	1	
Russia—Moscow.....	Mar. 2-16.....	1	
Russia—Odessa.....	Mar. 9-16.....	2	
Russia—Riga.....	Mar. 16-23.....	2	
Russia—St. Petersburg.....	Mar. 5-16.....	1	
Russia—Warsaw.....	Mar. 6-23-Mar. 9.....	13	
Spain—Valencia.....	Mar. 17-24.....	3	
<i>Yellow Fever—American</i>			
Brazil—Rio de Janeiro.....	Mar. 3-10.....	1	
<i>Cholera—Foreign</i>			
India—Bombay.....	Mar. 3-19.....	4	
India—Calcutta.....	Feb. 28-Mar. 2.....	33	
India—Madras.....	Mar. 2-8.....	10	
India—Rangoon.....	Feb. 23-Mar. 9.....	29	
<i>Plague—Foreign</i>			
Hawaii—Honolulu.....	Apr. 17.....	2	
<i>Plague—American</i>			
Australia—Queensland Betsabane.....	Feb. 2-9.....	3	1
Australia—Queensland, Port Douglas.....	Feb. 2-9.....	6	
Australia—New South Wales, Sydney.....	Feb. 2-9.....	4	1
Australia—New South Wales, Kempsey.....	Feb. 2-9.....	4	3
Brazil—Rio de Janeiro.....	Mar. 3-10.....	6	
Egypt—Ismailia.....	Mar. 10-16.....	3	
Egypt—Port Said.....	Mar. 8-17.....	1	
Egypt—Assiout Province.....	Mar. 8-16.....	15	
Egypt—Beni Souef Province.....	Mar. 12-17.....	4	
Egypt—Girgeh Province.....	Mar. 9-16.....	36	23
Egypt—Kouch Province.....	Mar. 11-18.....	26	20
Egypt—Minieh Province.....	Mar. 13-18.....	2	1
India—General.....	Mar. 2-9.....	3,426	2,971
India—Bombay.....	Mar. 3-19.....		978
India—Rangoon.....	Feb. 23-Mar. 9.....		124

Public Health and Marine Hospital Service:

Official List of Changes in the Stations and Duties of Commissioned and Noncommissioned Officers of the United States Public Health and Marine Hospital Service, for the seven days ending April 17, 1907:

- BERRY, T. D., Passed Assistant Surgeon. Granted leave of absence for one day.
- CARRINGTON, P. M., Surgeon. Granted leave of absence for three days, from April 15th, under paragraph 189 of the Regulations.
- FOX, CARROLL, Passed Assistant Surgeon. Granted an extension of leave of absence for fifteen days, from April 20th.
- HOLT, E. M., Pharmacist. Authorized to proceed to New Orleans, La., on special temporary duty, once each month, for three months, upon completion of which to rejoin station.
- RUCKER, W. C., Assistant Surgeon. Directed to proceed to Norfolk, Va., and assume charge of the Service exhibit at the Jamestown Tercentennial Exposition at Hampton Roads, Va.
- SALMON, T. W., Assistant Surgeon. Granted leave of absence for ten days, from April 19th.
- STIMSON, A. M., Assistant Surgeon. Leave of absence granted for seven days, from April 6th, under paragraph 191 of the Regulations, amended to read for five days.
- WALKER, T. DYSON, Acting Assistant Surgeon. Granted leave of absence for nine days, from April 12th.
- WARD, W. K., Assistant Surgeon. Granted leave of absence for one month, or so much thereof as may be necessary, on account of sickness, from April 7th.

Boards Convened.

A board of medical officers was convened to report

Wilmington, N. C., April 15, 1907, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: Passed Assistant Surgeon C. H. Lavinder, Chairman; Acting Assistant Surgeon —, Recorder.

A board of medical officers was convened to meet at Seattle, Wash., April 19, 1907, for the purpose of examining an alien immigrant. Detail for the board: Passed Assistant Surgeon J. H. Oakley, Chairman; Assistant Surgeon H. G. Ebert; Acting Assistant Surgeon F. R. Underwood, Recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending April 20, 1907:

ADAIR, GEORGE W., Colonel and Assistant Surgeon General. Granted fifteen days' leave of absence.

BANISTER, JOHN M., Lieutenant Colonel and Deputy Surgeon General. Upon being relieved by Lieutenant Colonel William W. Gray, deputy surgeon general, from temporary duty as chief surgeon, Department of the Missouri, will return to his proper station, Fort Riley, Kas.

BLOOMBERG, HORACE D., Captain and Assistant Surgeon. Detailed as a member of the examining board appointed to meet at Fort Riley, Kas., vice Captain Elmer A. Dean, assistant surgeon, hereby relieved.

BOSLEY, JOHN R., First Lieutenant and Assistant Surgeon. Left Jefferson Barracks, Mo., on ten days' leave of absence.

DEAN, ELMER A., Captain and Assistant Surgeon. Granted ten days' leave of absence.

FLAGG, CHARLES E. B., Captain and Assistant Surgeon. Granted leave of absence for four months, to take effect on or about May 1st, with permission to apply for an extension of one month.

GIRARD, JOSEPH B., Colonel and Assistant Surgeon General. Upon the expiration of his present leave of absence will proceed to Atlanta, Ga., and report in person to the commanding general, Department of the Gulf, for duty as chief surgeon of that department, relieving Lieutenant Colonel William W. Gray, deputy surgeon general.

GRAY, WILLIAM W., Lieutenant Colonel and Deputy Surgeon General. Upon being relieved from duty as chief surgeon, Department of the Gulf, by Colonel Joseph B. Girard, assistant surgeon general, will proceed to Omaha, Neb., and report in person to the commanding general, Department of the Missouri, for duty as chief surgeon of that department.

SNYDER, HENRY D., Major and Surgeon. Granted thirty days' leave of absence, with permission to apply for fifteen days' extension.

USHER, F. M. C., Captain and Assistant Surgeon. Relieved from duty at Fort Brady, Mich., and will proceed to San Francisco, Cal., and report not later than April 29th to the Medical Superintendent of the Army Transport Service, that city, for duty as surgeon on the transport *Buford*, during the voyage of that vessel to China and the Philippine Islands. Upon arrival at Manila Captain Usher will report in person to the commanding general of the Philippines Division, for assignment to duty.

WADSWORTH, S. H., Captain and Assistant Surgeon. Granted leave of absence for one month, on surgeon's certificate of disability.

WHITMORE, EUGENE R., Captain and Assistant Surgeon. Relieved from duty at Fort Jay, N. Y., and ordered to Fort Riley, Kas., for duty.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy for the week ending April 20, 1907:

BERTOLETTE, D. N., Medical Director. Sick leave further extended three months.

DELANCY, C. H., Passed Assistant Surgeon. Ordered to the Naval Medical School Hospital, Washington, D. C., for treatment and observation.

DOWNNEY, J. C., Assistant Surgeon. Granted leave of absence for one year, from April 15th.

GATEWOOD, J. D., Surgeon. Ordered to additional duty in the Bureau of Medicine and Surgery, Navy Department.

MCGUIGAN, J. H., Pharmacist. Granted sick leave for three months.

SPEAR, R., Surgeon. When discharged from treatment at the Naval Hospital, Mare Island, Cal., ordered home and granted sick leave for two months.

Births, Marriages, and Deaths.

Married.

ATKINSON—ESHMAN.—In Washington, D. C., on Wednesday, April 10th, Dr. Wade Hampton Atkinson and Miss Christine Eshman.

CLEARY—STONE.—In Brightwood, D. C., on Wednesday, April 17th, Dr. Edward M. Cleary and Miss Eugenia Stone, daughter of Dr. Charles G. Stone.

ENGLANDER—GROSS.—In Philadelphia, on Sunday, April 14th, Dr. Louis Englander and Miss Bella Gross.

PENDLETON—EMERSON.—In Jersey City, N. J., on Wednesday, April 17th, Dr. Judson Philbrook Pendleton and Miss Elizabeth S. Emerson.

WOOD—GRAY.—In Providence, R. I., on Tuesday, April 9th, Dr. Harold B. Wood, of Philadelphia, and Miss Edith Gray.

Died.

AUSTELL.—In Union, South Carolina, on Saturday, April 13th, Dr. Charles W. Austell.

BRISTOL.—In Syracuse, N. Y., on Friday, April 12th, Dr. H. L. Bristol, aged forty-one years.

BYINGTON.—In Montrose, Colorado, on Friday, April 12th, Dr. Helene C. Byington.

CAMPBELL.—In Niagara Falls, N. Y., on Tuesday, April 9th, Dr. W. R. Campbell, aged fifty-three years.

DOSER.—In Evanston, Illinois, on Monday, April 8th, Dr. John M. Doser, of Wilmette.

GAINES.—In Carrollton, Kentucky, on Sunday, April 14th, Dr. Frank H. Gaines, aged seventy-four years.

GALE.—In Brattleboro, Vermont, on Sunday, April 14th, Dr. George F. Gale, aged seventy-nine years.

GENGE.—In St. Johnsbury, Vermont, on Wednesday, April 10th, Dr. William W. Genge, aged thirty-nine years.

HARDY.—In Burkittsville, Maryland, on Thursday, April 11th, Dr. Thomas E. Hardy, aged seventy-six years.

HATCHETT.—In Chester, Virginia, on Saturday, April 13th, Dr. E. A. Hatchett.

HAYDEN.—In Astoria, Long Island, N. Y., on Tuesday, April 16th, Dr. J. L. Hayden.

HUSMANN.—In Cleveland, Ohio, on Thursday, April 11th, Dr. Dietrich C. Husmann, aged fifty-nine years.

JOY.—In West Brighton, Richmond Borough, New York, on Monday, April 15th, Dr. Henry De Witt Joy, aged sixty-five years.

KERN.—In Philadelphia, on Wednesday, April 17th, Dr. William M. Kern, aged eighty-six years.

LAURENCE.—In Chicago, on Thursday, April 11th, Dr. W. J. Laurence, aged eighty-two years.

LECHTMAN.—In St. Joseph, Missouri, on Thursday, April 11th, Dr. Isaac Lechtmann.

MARTIN.—In Philadelphia, on Thursday, April 11th, Dr. Robert Wilkie Martin, aged sixty-five years.

MCCARTY.—In Niagara Falls, N. Y., on Monday, March 25th, Dr. O. E. McCarty, aged thirty-six years.

MICHELL.—In Montgomery, Alabama, on Saturday, April 20th, Dr. R. F. Michell, aged eighty years.

PENDLETON.—In Bedford City, Virginia, on Wednesday, April 10th, Dr. James Dudley Pendleton, aged seventy-eight years.

TINSLEY.—In Augusta, Georgia, on Tuesday, April 16th, Dr. Austin S. Tinsley.

ROY.—In Montreal, Canada, on Sunday, April 14th, Dr. G. E. Roy, aged seventy-four years.

New York Medical Journal

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NEW YORK, MAY 4, 1907.

WEEKLY NO. 1483

Original Communications.

RAYNAUD'S DISEASE.

By JOHN V. SHOEMAKER, M. D., LL. D.,
Philadelphia,

Professor of Materia Medica, Therapeutics, Clinical Medicine,
and Diseases of the Skin in the Medical College of Philadelphia,
College and Hospital of Philadelphia.

Raynaud's disease as manifested in this patient is exceedingly rare, and the physician must be on the alert to recognize it in its incipency.

The patient, Mrs. S. R., age thirty-four years, nativity Russia, complained when I first saw her of her fingers feeling thick and heavy, with a peculiar dull, aching pain at intervals. At times the fingers were cold, and then again they were hot. She was also a sufferer of constant headache, sleepiness after meals, and eructation of gas.

Family History.—Her parents were both living and well. She had two brothers and three sisters, all of whom also enjoyed good health. She had no knowledge of her grandparents and uncles, but knew of two aunts who were living and in good health. She or her parents did not know of any one in the family that had had a similar affection.

Previous Personal History.—At the age of four years she developed a diarrhoea which continued until she came to America, when without medicine after her arrival here the diarrhoea suddenly ceased. She had no knowledge of having had any of the eruptive fevers, excepting measles at the age of eighteen. During her twenty-fourth year she had a severe attack of jaundice, which lasted over three months, during which time she suffered no pain, but was very much indisposed. One year later she had another attack, which was not so severe, but she was markedly jaundiced.

Social History.—Patient is married, has no children, and her husband is well.

Habits.—Her habits were good. She stated that she drank tea moderately, no coffee, and for the past three years had taken no alcoholic liquors in any form. Previously she occasionally drank wine and beer moderately.

Present Illness.—Eight years ago she first noticed that the end of her right index finger appeared more cold, as compared with the other fingers. It soon became pale and remained more cold than the other fingers. This sensation was followed by fissuring of the tip of the finger. Later the fingers felt hard or "wooden-like," slightly swollen, bluish in color, and at times painful, not any of the other fingers became involved until one year later, when the index finger of the left hand became similarly affected. Soon one after the other of the fingers on both hands were likewise involved until three years ago all of the fingers of both hands were entirely affected.

Physical Signs.—General examination showed a female of average height and size. The muscles were soft and flabby, the skin felt rather dry, but was warm

to the touch. Her eyes, ears, nose, and mouth were normal in appearance and size. The tongue was coated whitish yellow, and was extremely fissured. The lungs, heart, and abdominal viscera were apparently normal. The fingers were hard, cold, and moist to the touch. They looked reddish blue, and the skin was thick and infiltrated. The nails were of a waxy white appearance and she stated that they grew very slowly and were very brittle. Over the surface of the fingers and especially around the nails were small scars, the result of small blebs which appeared, ruptured and left an ulcerating surface. The toes were entirely free from the disease.

Laboratory Findings.—Blood examination: Color, pale scarlet; coagulability, normal; erythrocytes, 3,240,000; leucocytes, 7,400; hæmoglobin, 70 per cent.

Uranalysis: Albumin, negative; sugar, negative; blood, negative; specific gravity, 1.028; reaction, acid; color, straw; odor, aromatic. Microscopical examination of sediment: Casts, absent; cylindroids, a few; leucocytes, a few; epithelia, many squamous vaginal; urates, a few.

The diagnosis of such a patient's affection which I believe is Raynaud's disease is often very difficult, especially so, because many clinicians differ as to the ætiology and nature of the disease. In fact, some authorities go so far as to deny that such a disease exists, and in support of their views offer various explanations and place it under some other clinical category.

There are always three stages manifested in the parts affected by Raynaud's disease, namely, local anæmia, congestion, and gangrene. This patient presented the second stage of the disease. Her fingers were swollen, red, and cold to the sense of touch. If, in this stage, we cannot arrest the development of the disease local asphyxia will soon follow which is the advanced condition of the second stage, and often in a comparatively short time merges into the third stage as gangrene of the parts involved.

Raynaud's disease may be mistaken for diabetic gangrene and hysteric gangrene. The points of difference are marked, as shown in the appended table:

<i>Diabetic gangrene.</i>	<i>Raynaud's disease.</i>
(1) Onset rather sudden.	(1) Onset insidious.
(2) Signs of weakness and malaise.	(2) General health is good.
(3) Emaciation marked.	(3) No emaciation.
(4) Sugar in urine.	(4) No sugar in urine.
(5) Gangrene rarely symmetrical.	(5) Gangrene always symmetrical.
<i>Hysteric gangrene.</i>	<i>Raynaud's disease.</i>
(1) History of hysterical attacks.	(1) No history of hysterical attacks.
(2) Pain constant.	(2) Pain periodic.
(3) Gangrene always symmetrical.	(3) Gangrene symmetrical.

The pathology in the true sense of the term is not known. Many theories have been advanced, but the three most plausible are: (1) That it is due to

endarteritis obliterans; (2) that it is caused by peripheral neuritis; and (3) that it is the result of vascular spasms. Raynaud, who described the disease in 1862 as a special affection, suggested that the pathological condition was due to arteriole spasms and in support of his view held that as it was more common in women and children, it was due to the fact that the vasomotor system in these patients was more impressible than in the male sex.

The aetiology of Raynaud's disease in this patient may be attributed to the long standing diarrhoea which so disturbed the vascular system and the hæmatopoietic organs producing such a dyscrasia of the blood as is shown by the examination. She comes from a cold country and probably has had chilblain, which is considered to be one of the chief exciting causes. I really believe that the original cause of her disease in the first place was due to the dyscrasia brought on by the long standing diarrhoea.

The treatment of these patients should be hygienic, dietetic, electrical, and medicinal. The hygienic treatment is abundance of fresh air, and sunlight; change of scene, bathing to stimulate the functions of the skin; exercise in the open air to invigorate the circulation, and light massage to the parts involved, which should be kept warm by proper gloving or wrapping up in cotton wool. The diet should consist of nutritious, well cooked vegetables, and especially those containing comparatively large amounts of sulphur and iron in combination.

Our patient's digestion was at fault, as was indicated by the tongue and breath, also by the condition of the skin in her face and over her body. Hence, she was requested to live on a simple diet of toasted bread, soft boiled or poached eggs, baked potatoes, roast beef or roast lamb, baked apples, stewed fruits, and plenty of good milk.

Our object should first be to build up the digestive organs, to make the nutritive forces more active, to change the state and character of the blood, and thus restore the tissues and organs of the body to a more normal condition. Electricity in the form of the high frequency current, or the alternate current of galvanic and faradic electricity, both for the central as well as the local effect is a valuable adjunct in the treatment of these cases. The application of electricity in either of the forms mentioned will tone up the central nervous system, and give additional vigor to the glands both within and without the body. It stimulates the dormant circulation and the molecules of every tissue and organ of the body, and in addition aids to more invigorate the digestive system. Electricity in its different forms also assists absorption and elimination of all the morbid material.

Medicinally this patient needed blood tonics, as hæmatinics and spinal stimulants. One of the best hæmatinics for this class of patients is the expressed juice of the beef in tablespoonful doses every three hours. To act synergistically I prescribed for her the combination containing:

R. Ferri lactatis,	3i.
Sty. lactis,	3i.
Sty. lactis,	3i.
Ferri lactatis,	3i.

Misce, fiant capsulae No. XXX.

S. One capsule after each meal and at bedtime.

(Sgt. Wm. H. Smith.)

NONOPERATIVE TREATMENT OF GASTRIC DISEASES.*

BY FENTON B. TURCK, M. D.,
Chicago.

The nonoperative treatment of disease presupposes at least a partial knowledge of the cause and a logical reasoning towards its remedy.

The Eskimo of the Arctic incises in erysipelas to let out the poison, because he has seen "poison" flow from a discharging abscess, and his knowledge is too limited to discern a difference between the two swellings. May we not wonder whether, under the scrutinizing eye of omniscience we are much wiser than the Eskimo? We find a patient with a pain in his side, and because we know that sometimes such pain comes from pus in the appendix, we cut it out. Our skill in the cutting would put the Eskimo to shame, and our patient lives, but how many times do we find the pain still there after the wound is healed! We find a patient with what we learnedly call nervous dyspepsia, which we do not cure, so we cut open the stomach, and when we find it swinging down into the abdominal cavity, we lift it up and fasten it there, or we make a new passageway to the intestine.

We used to remove a woman's ovaries because she had hysteria, or neurasthenia, or chlorosis, but we gave over that practice when we found that she still had her hysteria, or her neurasthenia, and finally we learned to look for another cause, and another cure; so we are really wiser and more progressive, and more scientific than the Eskimo.

And now a similar experience is teaching us the same caution and the same care, and the same conservation in many diseases of the stomach and intestines. Thanks to the surgeon, whose past failures, as well as his successes are our lighthouses pointing out the rocks and shoals to be avoided, and yet more thanks to chemistry and the microscope, and perhaps most thanks of all to the inventive genius of our age in devising instruments for exploration less dangerous than the knife, we are coming to know more of the physiology of the digestive apparatus, and its pathological departures; to the end that we are finding medical and physical and mechanical therapeutics intelligently applied will cure many diseases that not long ago we were obliged to put to the uncertain arbitrament of the knife.

We do not imply by this that surgery has no place in modern gastrosintestinal diagnosis and therapeutics, but merely that its field has narrowed, and is ever narrowing as our knowledge broadens. A pointed illustration of this sentiment is our recent history of diphtheria. Not so very long ago one of the first recourses in the disease was tracheotomy; but eventually we found the toxine that produced it, and then antitoxine that brought about a cure. So that now tracheotomy is almost relegated to a class of surgical curiosities of which we are not proud, and which serve only as lessons in medical progress.

Surgery of the Stomach.

Before we take up our thesis of nonoperative treatment of gastric diseases, we must concede that surgery is our sole reliance in the present state of

* Read before the Missouri Valley Medical Association at Omaha, March 21, 1907.

our knowledge in many pathological conditions. These conditions we may classify as follows: (1) Obstructions; (2) tumors; (3) cases which seem incurable, and in which diagnosis appears impossible except by an exploratory incision. Of course there will be difference of opinion upon the limits of such classification. Some observers would constrict surgical application within narrower lines than these, and others would greatly extend it to include, for instance, ulcer, spastic contractions and even many pathological conditions which we now generally recognize as purely functional in character and amenable to treatment when a proper diagnosis is made and rational methods employed.

(1) Obstructions which must be removed by operative procedure may be of many kinds, as for instance, anatomical anomalies like congenital hour glass stomach that has developed grave symptoms, scars of extensive ulcers that have healed, leaving behind deforming cicatrices, and constricting adhesions resulting from some former peritonitis or trauma; though many operators are growing weary of attempting to remedy symptoms by surgically breaking up adhesions, for they have found that far too often the adhesions reform, and the symptoms return in even graver form than before.

(2) Tumors which demand operation may be unmistakable cancer, an enlargement of doubtful character, or an ulcer scar, or a cicatrix that threatens to change from benign to malignant form.

(3) The third call for surgical interference is diagnostic. If a diagnosis cannot be made, and symptomatic treatment has failed, and especially if there is progressive loss of weight, an exploratory incision should be made.

But it must be admitted that in Germany, where more care and more critical methods of diagnosis are employed than obtain as a common usage with us, there are far fewer surgical operations performed as aids to diagnosis.

The only other proper call for surgery in gastric diseases is in ulcer where there is repeated hæmorrhage which cannot be controlled, or where there is perforation either into the peritonæum or into the small intestine, or even, as sometimes happens, the colon. But this operation, too, is properly less frequently called for than even a few years ago, since we are rapidly perfecting our diagnostic methods, and are coming to recognize ulcer in an earlier stage, and by rational treatment prevent its reaching a surgical stage. Moreover, the literature is full of warnings against gastroenterostomy as a cure for gastric pathological conditions, and the history of the operation is a long line of failures and recurrences, due to the fact that the primary cause, still persisting after the operation, induces the same trouble at some new site. How often do we find a jejunal ulcer following operation for the gastric or duodenal type. Nyrop's cases are in point, and Portis, who gave great attention to this operation, finds that one of the prime functions of the stomach is to protect the bowel from irritation. He found persistent diarrhœas following the operation and many other functional disorders. He found that neurasthenics and dyspeptics were made worse by it, and that it should never be performed excepting as a last resort.

And we can readily see why these sequela would

follow so radical a change in the arrangement of so important a scheme of function as that in the relationship between the stomach and intestines. In the first place we invent a permanently patulous pylorus to take the place of a natural sphincter, and thus leave no protection against the irritating presence of the gastric juice in the small intestine. Then, again, the small intestine is not a stomach, and is unable to tolerate the presence of large quantities of undigested food that a patulous pylorus would pass to it. The question naturally comes up, would it not be better in such emergencies to remove the stomach if an operation must be performed, and then place the patient upon a permanent diet which would enable him to live a comfortable, if not a Lucullan life.

In admitting the office of surgery it must be assumed that the knife is guided by a skilful hand and prompted by one who is learned in anatomy, physiology, and pathology, as well as in technique. No graver crime is possible than to subject a patient to the double hazard of a surgical operation and an unlearned and unskilful operator. It has been noted by critical observers that some surgeons give more time and study to the perfection of an operation than to its avoidance.

Nonoperative Treatment

We come now to those diseases which from their nature we recognize as wholly within the scope of nonsurgical treatment. Manifestly our first success will be a satisfactory diagnosis, for in that we have eliminated one of the prime necessities for the knife. Inventive genius has aided us greatly to the accomplishment of this purpose.

The stomach tube was the first of these inventions. By its means we are enabled to explore the organ to see that the œsophagus is clear, to introduce fluids or air for purposes of distention, palpation, and percussion, to withdraw the contents for examination; and when finally our diagnosis has been made, the tube enters largely into the various processes of treatment. With the tube as a basis, many other aids have come to us, among them the double tube which allows the escape at the same time that it permits injection of either liquids or air for purposes of irrigation or spraying, or pneumatic gymnastics of the organ. The gastroscope, though limited in its application, is still another variation of the stomach tube, and a marked advance, and has often aided and confirmed diagnosis. In my own clinic I have found the gyromele, another variation of the stomach tube, of infinite value. This instrument, which is my own device, is a flexible braided wire cable loosely inclosed in a rubber tube; it has a soft bulb at the stomach end, and is made to revolve by means of a mechanism closely resembling a surgeon's drill at the other end. This instrument is introduced, the soft bulb indicating whether or not there is a constricted œsophagus. When it has reached the stomach and light pressure is still employed to direct it still farther, the bulbous end follows the greater curvature; if there should happen to be a marked constriction, either anatomical such as hour glass, or pathological, such as a cicatricial contraction, the bulbous end will pass by the constriction to the lesser curvature, and finally

complete the circle back to the oesophagus; as the cable is made to gently rotate while this introduction is in progress, the palpating hand over the epigastrium will be easily able to outline the stomach and fix its location. On the other hand, if there is a patulous pylorus, the bulb will pass easily into the duodenum, traverse that viscus, and often enter well into the jejunum. All this time the rotation of the bulb has been indicating its location to the palpating hand, and the precise course may be blue penciled upon the epigastrium. It is well known that under certain conditions it may be extremely difficult to locate the stomach exactly by percussion, even after distention, and I am always able to do so by means of this instrument.

We will not dwell upon the clinical aids of the chemical laboratory and the microscope in diagnosis, but will pass now to the treatment of the commoner gastric diseases.

Gastric Motor Insufficiency.

The commonest of these diseases is perhaps what we call for want of a more definite name, motor insufficiency, without pyloric obstruction and characterized by retention of stomach contents, distressing symptoms of dyspepsia, pain, dyspnoea, and later dilatation or ptosis, and a long chain of clinical manifestations, including marked disturbances of the splanchnic circulation, all of which we term atony. Of course the first step in any event is to find the cause, if possible, with a view to its removal. The condition as a clinical picture has long been recognized by such observers as Ewald, Riegel, Boas, Einhorn, Hemmeter, Schreiber, and others, who, however, differed as to the primary cause. This divergence of opinion is due manifestly to the fact that any one of many pictures may first present themselves in any given case.

Any condition which weakens the general system may *pari passu* predispose the gastric muscle to fatigue. During the continuance of this general weakened condition, the stomach may be called upon unlike any other muscle, except the heart, to perform hard work when it is already fatigued. A cessation must therefore follow, and as the patient continues to eat and the muscle continues its refusal to perform its function, in the end there comes upon the scene the factor of mechanical weight of the contents to add its force to the destructive power of the conditions already present.

Even in a strong stomach, one that is in good functional order, excessive eating or drinking may bring about precisely such conditions, but in most of such cases Nature will assert herself and the nausea, or at least, the repugnance for the offending foods, and sometimes, especially in children, vomiting will come to the rescue until the stomach muscle is sufficiently recovered to begin again its normal functional activity.

While these extraneous causes undoubtedly are prime factors in the production of a vast number of cases of motor insufficiency, such men as Bouveret, Gerhardt, Albu, Ewald, Heim, Schlessinger, and Loeb, agree that by far the most frequent cause is gastrointestinal autointoxication. The toxins may be either of bacteriological origin or the normal products of digestion, peptones or secondary albumoses, whose conversion may have been deterred

until a period of the digestive process when they are taken into the circulation as toxic albumoses instead of the physiological form.

Whatever the manifestation of this condition, it is self evident that the first step in treatment is to provide rest for the overworked or overirritated organ. This rest may be best obtained by withholding all food until actual hunger indicates that the stomach has at least partially and temporarily recovered from the shock of fatigue. When this period comes, we give those foods furnishing the greatest amount of nourishment at the smallest expense of work on the part of the organ.

The time and frequency of feeding are among the most important factors in treatment. In this country we seem to have borrowed the European arbitrary rule to feed patients at frequent intervals, averaging about every three hours. This rule it would seem is applicable only to a certain limited number of cases, especially acute and subacute forms, for it will be found that in chronic atonic cases a small meal will show retention nearly or quite as long as a larger meal, and a general rule may therefore be asserted that food should never be given except when the stomach is empty. In some cases it may require twenty-four hours for the stomach to empty itself, and for that reason we would feed only once a day. But in the progress of treatment, as the muscle walls improve in tone and activity, another meal may be added in the twenty-four hours, and then under farther improvement we may allow the patient to resume the normal three meals a day.

Milk so fresh that its bacteriological content is very low is one of the best of the foods in these cases. Or, better still, the milk may be coagulated with rennet, and the whey given either alone or in combination with myosin prepared as we shall presently see. Milk fed in its uncoagulated form is quite likely to form large clots in the stomach, which, instead of being properly digested, undergo decomposition. Eggs, rice, toasts, and purees of potato and the legumes are admissible in most cases, and are gratefully accepted.

For my own practice I have devised a special preparation of meat freed of all extractives, salts, and fats, by a process of maceration and autoclave steam pressure. The lean meat is first ground and then allowed to stand in cold water for twenty-four hours; it is then placed in a press and squeezed, until as much as possible of the extractives and salts in solution are removed, and discarded. The pulp is then boiled for several hours and again pressed to take out the remaining extractives and salts; or, better still, it may be placed in the autoclave under a steam pressure of one and one half atmospheres, which is more effective than the boiling.

Meat prepared in this way, it would seem, is an almost ideal proteid form of diet. It is a well established fact that the extractives are of little or no nutritive value, and it is quite as true that in the gastrointestinal tract, as I have shown in other publications, they form an exceptional papulum for the development of toxine producing gastrointestinal flora; while salt, in certain toxic conditions inhibits digestion, decreases the gastric juice, and by direct toxic effect upon the muscle walls retards motility of the organ. In fact, it is necessary in these cases to withhold all salt from the food. This dechlorina-

tion is not only of value to promote better function of the stomach, but it is indicated because of the secondary disturbance of the heart and circulation, and insufficiency of function on the part of the liver and kidneys. The fats of meat we do not use as they contain much stearin which has a melting point of 140° F. and is difficult of digestion; and when indicated, fats may be much better supplied by means of butter and cream.

On the other hand, this treatment of meat serves to break up all the connective tissue into gelatin, the most easily digested form, and leaves the myosin in the best possible condition for assimilation. I have found that meat of this character will pass out of the stomach often in an hour and a half, and much quicker than even milk. This prepared meat can be taken with milk or water, seasoned with pepper, or other condiments; or it can be mixed with rice or eggs and cooked in a variety of ways.

Another food valued highly by a few special clinicians in this field is wheat bran. For a long time, and until very recently, bran was known merely as a food for herbivorous animals; and though it was known to contain high nutritive values, it was supposed that the human stomach was incapable of assimilating these constituents in the forms in which they occurred. For several years I have been using bran, largely for its mechanical effect in stimulating peristalsis and in collecting decomposed particles of food in the stomach, and by its bulk and consistency clearing the organ of this toxic matter. It is generally given at the rate of a teacupful in the breakfast food, or alone in hot water.

Recently LeClerc and Cook reported, in the *Journal of Biological Chemistry* (October, 1906), a number of experiments made with wheat bran to determine the value of its phosphorous content, and they found that all the phosphorus was taken up by the system in the processes of metabolism, and their conclusion was, after a most careful examination, that the organic phosphorus was not only all available for assimilation, but that it served a further purpose of materially aiding in the utilization of proteid foods, and that bran was therefore a most valuable addition to the diet. Kossel and others have pointed out the important rôle of phosphorus in assisting the digestibility of the proteids.

Mechanical Treatment.

But proper diet properly administered is not the only necessity in the treatment of these cases of visceral atony and motor insufficiency. It is urgent that we make every attempt to restore functional activity in the musculature. The indications are, therefore, twofold, first, to restore the lowered splanchnic circulation, to increase the resistance of the organs; and, second, to bring about normal peristalsis which has been almost suspended. Both these indications are met by the internal application of mechanical gymnastics to the muscles of the whole alimentary tract.

It is my custom in the clinic to apply this restorative proceeding not only to the stomach, but to the colon as well, since it is a well established fact that the stimulation of the peristaltic movement in one part of the tract tends to increase the movement in all parts. My procedure is as follows: I first introduce about 300 c.c., or 10 to 12 ounces of water

at about 122° F., by fountain pressure into the colon, the patient lying with thighs elevated. After this water has been allowed to flow away through the tube, I introduce an equal amount of water at a temperature a little above the freezing point. Usually some disinfectant is added, such as menthol or some of the volatile oils. The shock to the colon, produced by this alternation of hot and cold water, induces a speedy peristaltic movement. Immediately following this procedure I use compressed air through a double tube, or a Politzer bag, to rhythmically distend the colon. In the case of compressed air this movement may be nicely accomplished by pressing upon the exit side of the tube momentarily and releasing, thus distending and emptying alternately. At some other part of the day, or in favorable cases at the same visit, I perform a like service upon the stomach, using, however, only the compressed air through the double stomach tube, passed through hot water containing some of the volatile oil disinfectants. This process thoroughly vaporizes the stomach with the solution, and the gymnastic exercise is completed as in the case of the colon, by alternately pressing upon the exit tube and releasing it.

Both these operations, far from being offensive and distressing to patients, give them such instant relief that they are urgent for frequent treatment. Often under this combined diet and gymnastics patients exhibit marked improvement mentally as well as physically in a few days, and in from a few treatments to a month, according to the original status, the physiological activity of the whole tract will have been resumed, and all symptoms will have passed away. It is often necessary, however, to continue treatment occasionally for some time in old and severe cases, and for a long time the diet will have to be carefully regulated.

I have gone thus into detail in the treatment of these cases of atony, first, because it is by far the most common of all the gastric conditions we meet in practice, and, second, because I regard this same proceeding so nearly applicable in the treatment of gastric and duodenal ulcer, and many cases of visceral ptosis that with some slight modifications to meet individual cases, the two methods are the same.

In cases of malignancy, however, and well developed ulcer the pneumatic gymnastic treatment is confined to the colon.

Treatment of Gastropptosis.

Most observers recognize displacement of one or more of the abdominal organs as closely related to atony and its sequela. Rosenberg says that in a vast majority of cases of gastropptosis atony is present. Achilles Rose finds that many cases called hysteria, neurasthenia, and nervous dyspepsia are neither more nor less than gastric atony followed by ptosis and anomalous secretory and motor functions. And Nyrop finds that hitching up the stomach does not produce the results intended, since the trouble is not mere displacement, but atony. He cites cases in which gastropexy was performed for ptosis in which the muscle was so weak that retention developed; in one of the cases gastroenterostomy was done as a secondary operation, but it also failed of lasting results, because the real trouble was atony which no

surgical procedure could cure, and his patient eventually died. He therefore insists that any promising treatment must be addressed to the improvement of the muscle tone.

Many observers, especially those of the German school, attribute visceral ptosis to local primary causes, such as tight lacing, frequent pregnancies and careless after treatment, and inattention on the part of many women to regular bowel movements; but they agree in all such cases, atony is a ruling factor when symptoms appear, and that treatment must be at once addressed to that condition.

In my own clinic I have the records of many cases of exaggerated displacement of one or several of the abdominal organs in which a restoration of tonicity brought with it a cure of the symptoms which urged the patient to consult a physician; and we may readily see how this result comes about. In the lax, atonic state the viscera are practically dead weight in the cavity, and many patients will describe their symptoms in those words. The splanchnic vessels are gorged and distended; there is no resistance anywhere until the pelvic floor is reached, and all the organs gravitate there. But just as soon as a better tone is established in the gastric and intestinal muscles, there is at once set up a buoyancy and elasticity and resistance in which all the organs are pushed back into their natural positions. The great mass of intestine, small and large, that has so easily fallen down in its inert condition, becomes at once a cushion for the support of the other organs, the uterus, ovaries, liver, one or both kidneys, and the stomach, and all of these are forced back into place. The pressure of gravity in these organs being thus relieved, their own circulation vastly improves, the engorgement ceases, and there is at once resumed a continuity of physiological activity. Perhaps it was uterine symptoms the patient exhibited, including mental disorders, and menstrual irregularities; or perhaps the manifestation was a dyspepsia or a renal disturbance; and any one of these series of symptoms may have been so pronounced, and apparently clear, that we were misled from the situation and tempted to confine our efforts to the organ affected. In such a case when treatment has failed to bring results a closer examination may develop the real trouble, and rational methods perform a cure.

Spastic Constipation.

Spastic constipation, or so called "nervous disease" and spasm of the pylorus, are two diseases heretofore considered within the realm of operative treatment, and are so still considered by many surgeons. But both these diseases have admittedly common primary origin, namely, gastritis, hyperchlorhydria, ulcer, or atony, and if in other similar diseases we are to seek out the cause and attempt its removal, why not in these diseases as well?

Summary of Treatment.

We have now sufficiently dwelt upon these several forms of gastric disease to be able to summarize the whole under a common sequence of events. Whether the disease at its outset was due to local disturbances of digestion, or interference with the functions of special organs by abuses in dress, neglected involution after pregnancies, or by improper qualities and quantities of food, yet it almost invariably transpires

that when the physician is consulted, symptoms have supervened that indicate general systemic involvement, and any rational treatment must contemplate restoration of physiological conditions by some of the methods we have had under consideration.

1820 MICHIGAN AVENUE.

MENTAL RESPONSIBILITY AND CRIME.*

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The important problems which present themselves to the attention of the alienist and jurist are: First, the recognition of a sane or insane motive in a criminal act; second, the elimination of simulation of insanity; third, creation of principles to be guided by on subsequent occasions; fourth, the last, but not the least, the great social question of prophylaxy or prevention of crime.

When a patient is in an advanced stage of paresis, or presents well defined delusions too evident to be overlooked, or shows multiple visual and auditory hallucinations of a threatening character, in such cases a crime committed finds its *raison d'être* and an individual thus affected will be readily recognized insane. When, however, the criminal is only in the first stages of a mental affection, in which a perverted mode of thinking, of feeling, or acting, is not easily recognizable; when a crime is committed during one of epileptic seizures, between which the individual is comparatively lucid, when a crime is committed by a mentally defective, an imbecile; when a crime is committed under the influence of an obsession by an individual whose inhibitory control is decidedly deficient, in such cases should the criminal be considered totally responsible and convicted for his crime?

Medicolegal literature abounds with examples of conviction of criminals during the early stage of paresis, in which qualitative changes of moral faculties are, so to speak, pathognomonic of the disease (vagabondage, fraud, excesses, assaults, etc.), or of paranoiacs with fixed systematized delusions bearing upon one special subject, who plan a crime, carry it out skilfully, and therefore give the impression of being perfectly responsible for their acts.

How about that large class of mentally defectives, high grade imbeciles, epileptics, etc., who are not insane in the proper sense of the word, but whose responsibility must logically be considered only partial? Should an individual with a special make up of his nervous system, whose thinking power is deficient, whose responses to internal or external stimulations are abnormal, although he has no delusions or hallucinations, be considered responsible?

It is not very long ago that the criminologists of the newer anthropological school cried a halt to indiscriminate conviction of all sorts of criminals. They began to realize that when an individual, punished severely for one crime, would commit another as soon as he gained his liberty, he is probably a victim of a defective cerebral organization, hereditary or acquired, that the repetition of a crime is in the majority of cases not a mere coincidence, but the result of profound causes, that vagabonds, delinquent

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children, or youths present special causes for their repeated criminal acts. Recently (*Journal de neurologie*, No. 12, 1906) Jules Morel has made a special study of one hundred and fifty delinquents taken from reformatories and prisons, whose crimes were multiple. The majority of them presented a neuropathic make up with mental deficiency.

A certain degree of education is not sufficient to draw conclusions as to the intellectual development rendering the criminal responsible. In order to consider him responsible, he must possess a volition which is capable to put the moral conceptions into practice and which is never pathologically dissociated.

The determination of the degree of responsibility of a criminal should be exclusively in the hands of an alienist. Only he is capable to recognize early paresis, paranoia, dementia (alcoholic or other), or a psychic attack of epilepsy. Only he is able to determine apart of insanity the degree of mental control and of inhibitory power of a delinquent who presents mental stigmata of degeneracy.

There are undoubtedly cases of incipient insanity, the nature of which it is sometimes quite difficult to establish and consequently cannot be evident to the mind of a layman. In such cases the question of responsibility for a criminal act is of utmost importance. There is a certain group of lunatics who knowing the object of your inquiry are extremely cautious in their replies; they will conceal their delusive thoughts, especially when the latter are fixed upon a certain individual subject. A conversation led in a general way will not reveal the delusion, and if the examiner is familiar with such cases, he will carefully lead in an imperceptible manner to the main subject and finally succeed in eliciting the concealed delusion. It is evident that such an individual will appear to a lay mind mentally sound and will be considered legally responsible. But is he justly responsible? There comes in the frequent conflict between medical and legal conceptions of insanity.

The law admits that a man with one fixed delusion may be sane on every subject, except when he touches upon the delusive thoughts, and some argue that he can be considered sane before or after a crime is committed, but insane during the act. From a medical standpoint such an argument is unscientific, for if delusive ideas are apt to originate in a brain, the function of the associated fibres or of the cortical cells which send their stimulation to those fibres, is disturbed, is abnormal. In such a brain one certain delusion may be formed and remain fixed, but by reason of this fact this brain must be considered diseased, and the faulty mechanism of the association function may become manifested at any moment by forming misconceptions and misinterpretations. An individual thus affected should by no means be considered *responsible* before the law prior to or after the crime.

Conclusion.

To sum up my ideas on this important subject I will conclude with the following propositions:

1. The legal conception of responsibility is not in accordance with the principles of science, and does not satisfy the practical exigencies of life.
2. The dogmatic principles of law should be re-

placed by more real and vital, viz., by biological principles.

3. A special psychiatric service should be established in prisons for study of all criminals, or else an alienist be attached to prisons, reformatory schools, houses of refuge.

4. The function of the law should be not only to find criminality, but also to correct the criminals themselves.

5. Legal instruction should consist of study of crime as a social phenomenon, and of criminals as individuals.

6. Administration of justice in such cases should be confided to a jurist and to an alienist.

7. Administration of houses of correction should be placed in the hands of alienists and pedagogues, because the majority of criminals bear stigmata of degeneracy which require special attention.

8. Youthful criminals should be isolated and placed in special institutions in which proper medical and pedagogic measures will prove to be most beneficial.

Finally, I may say that conviction of criminals intellectually and morally defective is not only unjust, but also useless, and that punishment should be replaced by prophylactic measures which form a part of social hygiene.

1439 PINE STREET.

MUCOUS, MUCOMEMBRANOUS, AND MEMBRANOUS COLITIS.*

BY JAMES P. TUTTLE, M. D.,

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If our stools were systematically examined it would probably be found that catarrhal colitis is as common a disease as catarrhal rhinitis. The functions of the goblet cells in both organs is to secrete mucus, and whatever stimulates these cells, whether it be chemical, mechanical, or infectious, increases this secretion. If the secretion is discharged at once it appears as a viscid, glairy mucus; if it is retained for any length of time it becomes coagulated and is discharged either as an albuminoid mucus or as a laminated membrane like cast. If the increase in secretion of mucus in the colon is of a minor degree and is discharged with the normal stool little or no attention is paid to it, but if it is marked and retained for certain periods, being discharged alone in masses, it always excites more or less anxiety in the patient's mind, and produce symptoms which are of sufficient import to require careful examination and study. The pathology and ætiology of colitis has been very little understood; and it is our purpose at present to call attention to the pathological conditions found associated with, even if they cannot positively be proved to be the cause of the disease.

The terms mucous, mucomembranous, and membranous colitis have been interchangeably used by writers on intestinal disease to designate excessive secretions and discharges of mucus from the rectum whether in the glairy, mixed, or laminated form. This discharge, however, is only a symptom and its variations in character indicate not simply a difference in degree but often an actual difference in the disease causing it. Whether the mucus is

* Address read before the decennial anniversary meeting of the Harrisburg Academy of Medicine.

discharged in its original glairy state, or whether it is partially coagulated in strings, or whether it adheres to the intestinal wall and is subsequently discharged as a laminated membrane depends upon the site, the extent, and the character of the irritation. The quality of the mucus is determined by the character and site of the lesion; the quantity by the extent of the same. Where the irritation is low down in the rectum or sigmoid, occasioning frequent stools, the mucus is always glairy, unmingled with feces, and without lamination. Where the irritation is high up in the bowel and of limited area it is passed mixed with the feces and more or less coagulated, according to the frequency of the stools. Where the irritation is acute, causing frequent movements there is little or no lamination; where it is chronic, causing constipation, the mucus is cast off in a membranous form. As already stated, the quantity of the mucus is indicative of the extent of the lesions; thus immense quantities of mucus are sometimes discharged after drastic cathartics or irritating poisons through which the whole mucous membrane of the colon is irritated. Such a discharge of mucus is always associated with frequent bowel movements and the mucus is always glairy or slightly coagulated when first passed. When the secretion of mucus is slow, however, and the bowel movements retarded, the mucus coagulates upon the wall of the gut layer by layer, as it is secreted, and thus forms what is known as membranous colitis. Between this and the former there is the middle ground of mucomembranous colitis, in which the mucus is neither glairy nor laminated, but simply coagulated, and is usually mixed with or stained by the feces.

Pathology.—The pathological change in the mucous membrane itself in all the varieties is much the same. It consists of a hypertrophic infectious catarrh with more or less congested or excoriated areas. As observed during like through the sigmoidoscope, the mucous membrane of the rectum and sigmoid in these cases is always congested, slightly thickened, sometimes eroded and covered more or less with viscid mucus; microscopical sections of the membrane show hypertrophied goblet cells and increase of the intratubular tissues; where the false membrane has been wiped away the intestinal wall shows only a bright red slightly eroded surface without any bleeding; in those cases in which the mucus was not laminated, but glairy or slightly coagulated, various conditions have been observed such as polypi, papillomata, epitheliomata, condylomata, strictures, acute flexure, ulcerations, foreign bodies, and such other conditions as irritate and excite peristalsis. This is the first cardinal feature of distinction to which I wish to call your attention, namely:—Whatever excites peristalsis will produce mucous colitis; whatever restricts peristalsis produces membranous colitis. The quantity of mucus as described varies according to the area affected. I have seen strings over a yard long and composed of almost a complete cast of the bowel, and in other patients who suffered just as much, the mucus has been discharged in small, stringy, half coagulated masses. This so called membrane consists of the structureless laminated albuminous material without any fibres, and enclosing in the laminae small faecal masses, epithelial cells, bacteria,

pus, leucocytes, crystals of cholesterin and phosphates, and often the epithelial lining of the mucous follicles. The mass is sometimes one quarter of an inch in thickness, it is firm on its outer surface and gradually changes into tenacious, glairy mucus on its surface nearest the intestinal wall, thus indicating clearly that it is formed by the secretion of this glairy mucus which becomes coagulated in layers, the foreign substances and the epithelium being caught in these laminae as they are successively formed.

Microscopical examination of the intestinal walls of patients suffering from this condition and having died from other diseases show the veins more or less dilated, the intestinal glands are hypertrophied, distended with mucus, and the epithelial cells undergoing fatty degeneration. In uncomplicated cases there is no diminution of the calibre of the gut. The false membrane is easily detached and leaves no ulceration behind.

Symptoms.—To speak of the symptoms of mucous or membranous colitis is putting the cart before the horse. As I have said before, the mucus is a symptom itself and not a disease. We must, therefore, consider the symptoms of disease which cause the discharge of mucus. First then we would study those conditions which are indicated by the glairy mucus; such conditions as provoke a tendency to diarrhoea, griping, the passage of small quantities of glairy mucus, especially on arising in the morning, and at various times during the day with the escape of flatus. There is usually more or less tenderness at some point in the line of the colon itself, and in the majority of cases there is loss of weight. Microscopical examination of the mucus frequently shows pus cells, and broken down intestinal debris. With few exceptions they are diseases more frequently found below than above forty years of age, viz., ulcerations, acute flexures, adhesions, neoplasms, traumatism, infections, etc. They may be associated with acute pains or there may be no pain whatever. If, as often happens, the secretion is the result of a constriction and ulceration in the upper rectum or sigmoid, there will be aching in the sacrum and sometimes also in the suprapubic region before and after the bowels move with perfect relief during the rest of the day; this aching will be increased if the bladder is very full. In small polypi or papillomata the chief symptom is frequent desire to go to stool, resulting only in the passage of small quantities of mucus, with or without blood.

The symptoms of those conditions bringing about membranous colitis consist in constipation, alternating with diarrhoea or usually true constipation; chronic intestinal indigestion or flatulence; white coating on the tongue; feeble circulation; sensitiveness to colds and drafts; exhaustion from slight effort; pallor or muddy complexion often mistaken for anæmia or chlorosis; mental and physical depression or lassitude and usually gloomy forebodings. The latter combined with insomnia, and even true mental aberration, are so often associated with this condition that clinicians have in the past been led to consider membranous colitis as a neurosis and not an organic disease. The attacks or rather the time of mucous discharge are periodical but without any regularity; in the majority of instances they will disappear so

long as the bowels are kept open and a proper dietary is observed. Violation of this regime, however, is soon followed by attacks of severe griping, headache, indigestion, and sometimes tympanites, followed by the passage of more or less immense masses of mucus, after which all symptoms subside and the patient is comparatively comfortable until another period. Usually there are tender spots along the line of the colon or in other parts of the abdomen; one of the chief spots is over the caput coli. Deep pressure over this area frequently elicits dragging pains on the left side and sometimes underneath the ribs, just outside of the cardiac end of the stomach; these effects are suggestive, as we shall see very soon.

Ætiology.—The cause of mucous and mucomembranous colitis has long been the subject of discussion. Blood examinations have thrown no light upon the subject; microscopical and chemical analysis of the stools have only shown us that the so called membrane does not consist of exfoliated mucous membrane but a nonorganic albuminoid deposit. The lack of frequent postmortem examinations in patients known to have suffered from this disease allows very little information to be drawn from this source. In recent years, however, exploratory incisions and operative procedures in this type of cases has thrown much light upon the subject, and we are able now to state with some positiveness that a number of pathological conditions are associated with membranous colitis; when relieved the colitis disappears. The neurotic theory is based purely upon the fact that many patients who suffer from mucous and membranous colitis are also the subjects of neuroses, and the colitis sometimes disappears along with the neurosis. Those who maintain this view fail to consider the fact that the very treatment which they give for the neurosis, namely, diet, regulation of the bowels, regular hours, mental diversion, massage, etc., all tend to the elimination of fermentative products from the intestine and the relief of the catarrhal conditions which bring out the mucous discharge. The fact that mucous colitis occurs so much more frequently in women than in men, whereas the latter just as often suffer from neurasthenia and nervous diseases, presents a strong argument against this neurotic theory. Moreover, the results of sigmoidoscopy, exploratory operations, and surgical treatment of the disease have shown clearly that in almost every instance there is an organic cause for the secretion of the mucus, whether it be membranous or glairy.

These causes consist of some irritation of the colon, either pathological, mechanical, chemical, or reflex with subsequent infection, and the type of the mucous discharge will nearly always throw some light upon the character, the extent, and the site of the lesion. Glairy mucus uncoagulated and unmixed with feces always indicates an irritative lesion which is low down in the intestinal tract, almost surely in the rectum or sigmoid. If stained with blood it indicates an ulcerative or traumatic lesion of the intestinal wall. If the blood is fresh and bright it indicates a lesion in the lower part of the canal but if dark or clotted the lesion is probably high up. I say probably because we may have this type of blood and mucus from even hæmorrhoidal ulcers when the patient has only infrequent stools. The quantity

of such mucus indicates the extent of the lesion. Thus a single short stemmed polypus may cause a great deal of tenesmus and blood but it will cause very little mucus, while a long stemmed one or multiple polypi will produce much more mucus and perhaps less blood. If the blood is mixed with the mucus it shows that they both come from the same site, but if it is only on the surface in elongated streaks it shows that the mucus is secreted above and is passed down over or through the bleeding area. If the blood streaks are on one side only of the mucus it indicates a single lateral lesion but if all around it we have to deal with multiple lesions or an ulcerating stricture. The importance of careful observation of the mucous passages will thus be seen, and at the same time we learn how much the general practitioner can do in the way of diagnosis before resorting to instruments with which he is unfamiliar or sending his patient to a specialist. (This is no inconsiderable matter, for it is a great comfort for the patient to learn from the specialist that his home doctor was right in his diagnosis.)

Of course, all patients passing mucus should be submitted to local examination but such observations show us in what line and to what extent such local examinations should be carried. In brief, there is no material difference in opinion at the present day as to the ætiology of glairy mucous colitis. It is always due to acute irritative lesions, and while they do not all demand operation they do require surgical treatment.

Treatment.—The first step in that treatment consists in absolute diagnosis of the site and character of the lesion. The educated finger and the pneumatic proctoscope will usually enable one to make this, but these failing the physician should not hesitate to do exploratory laparotomy. This done the treatment resolves itself into the treatment of the lesion found, and this can then be done with intelligence and dispatch. As to the mucomembranous discharges, those consisting of masses of coagulated but not laminated mucus passed almost every day, they indicate a general catarrhal condition of the colon without any mechanical obstruction causing constipation or irritative lesion causing diarrhœa. This type is usually due to some mild infection, improper diet or habits, and feeble constitutional resistance. I have seen it follow acute summer diarrhœa, typhoid fever, pneumonia, grippe, and dysentery.

The treatment of such cases is usually medical and is as follows: Diet—Meat or fish twice a day, animal broths, a limited amount of dry toast or crusts of bread, rice, hominy, green vegetables, milk, butter, and salads. No sweets, potatoes, peas, shelled beans, or alcoholic drinks are allowed. Regular catharsis, preferably by castor oil and glycerin, every three days. Colon flushing with normal saline, sodium bicarbonate, or weak silver nitrate solutions. Intestinal antiseptics such as phenyl salicylate), boric acid, or zinc sulphocarbolate. Regular hours for business, exercise, and rest, and sometimes, if need be, change of climate. Some of these cases, however, especially those due to latent or remittent amœbic dysentery, do not yield to this treatment. When such is the case we are forced to employ surgical measures such as Gibson's cæcostomy or appendicostomy. I prefer the latter for reasons stated in other papers and unnecessary to repeat.

This brings us to that which we wish chiefly to discuss, viz.: *membranous colitis* and we hope to prove to you the ever present organic cause in this condition. That constipation or rather the arrest of faecal masses at some point in the colon is present in almost all these cases is admitted; but what is the cause of such arrest and can that cause be removed is the practical question to be solved. We believe that we have proved it is obstipation or mechanical arrest, and not constipation or functional inactivity, which causes this discharge. The faecal masses are retained at certain points, usually the cæcum, the flexures, or diverticula, until they abrade the surface of the mucosa and allow infection, and thus cause irritation of the goblet cells which increase the secretion of mucus and the whole chain of symptoms connected therewith. But what are the causes of such arrest? They are mechanical, infections, and reflex. Now as this is a practical discussion I do not propose to put down here one single cause that I have not seen operative in my own experience.

The first mechanical cause is movable kidney; not that type in which the kidney can just be felt moving upon deep respiration, but that in which it slides up and down the posterior surface of the ascending colon for four to eight inches with every breath. It has been my privilege to operate in two such cases, and in each instance the colitis disappeared very soon afterwards.

Chronic Appendicitis, with Adhesions.—What is the exact relation between simple catarrhal appendicitis and colitis is a question yet *sub judice*, but one thing I know and that is the large majority of patients suffering from appendicitis with adhesions about the caput coli suffer also from chronic membranous colitis, and this colitis is not cured by diet or local applications through the rectum. My belief is that it is not constant reinfection from the diseased appendix which begins and keeps up the disease, but it is the restriction of peristalsis and arrest of faecal matter at this point, due to the adhesions. We have operated in twenty-two cases of this kind with excellent results in nineteen. The three failures prove rather than refute the theory. In each of these the adhesions were not confined to the appendix but extensive, and involved more or less of the entire caput coli. They were broken up at the time, and this, together with active daily catharsis seemed to cure the patients. In one, three, and five months, respectively, the discharges recurred with increased resources splashing and tenderness over the cæcum and ascending colon. In two of the cases the abdomen was reopened only to find the adhesions had recurred, thus causing restriction of peristalsis and arrest of the faecal current at this point. In one of these cases a cæcetomy was done and constant flushing of the colon from above downward controlled the mucous discharge. Whether the adhesions produced by this operation would cause a recurrence if the flushing ceased, I cannot say but I fear it would. In the other case the abdomen has been opened four times and the adhesions broken up. Three times the discharge has promptly recurred. The fourth time, finding the adhesions more extensive than before, I made an anastomosis between the ileum and the transverse colon, thus

cutting the faecal current out of the ascending colon, and as if by magic the membranous discharge has ceased.

Peritoneal adhesions in other parts of the abdomen, causing restrictions of peristalsis, stricture, or obstruction to the faecal current by acute flexure of the gut have been observed in twenty-five cases. Eighteen of these were due to adhesions of the sigmoid in the pelvis and were cured by lifting the organ up and suturing it to the abdominal wall so that the acute flexure could not recur. The first of these operations was done over twelve years ago, and the patient remains free from constipation or colitis to this day.

In two cases of membranous colitis with exaggerated symptoms I found an interesting condition, viz.: constriction of the sigmoid by the adhesion of two appendices epiploicæ situated on opposite sides of the gut. I had the good fortune to have my artist present at one of these operations, and he has made an excellent drawing of the pathological condition in this case. The appendices were removed, and the patients were soon cured.

Gallstones.—In two patients operated upon, gallstones, with largely distended gallbladders, appeared to be the cause of the colitis. In both the discharge stopped after the removal of the stones. In one of these the discharge recurred in about six months and the patient died shortly afterward from cancer of the mesentery and pancreas. This would suggest that such growths may also cause the disease, but as I have seen but this one case I cannot say.

Cholecystitis has been seen to produce the discharge in two cases. In one patient drainage of the gallbladder resulted in a cure, while in the other patient rupture of the gallbladder was followed by collapse and death before anything could be done for him. Post mortem examination revealed the lesion with old adhesions between the gallbladder and the transverse colon.

Finally, I wish to call attention to gastro-enteroptosis as a cause of membranous colitis. In three cases in which I have operated I could find no other cause for the colitis. The only explanation I can give of this is that the displacement of the transverse colon causes arrest of the faecal masses in it or though acute flexure in the ascending colon and thus causes the abrasion and subsequent infection which results in the colitis. In two of these cases I anchored the transverse colon in position with good results; in the third I replaced the organ, bandaged the patient tightly, and kept her in bed with the feet elevated for six weeks. All these patients wore Gallant corsets after getting up, and they all recovered.

With such experiences one cannot wonder that I believe in organic causes for this condition. At the same time, the question naturally arises, should we resort to such capital operations at once in these cases? My answer is "by no means until the classical treatment by dietary and local applications have been tried; at the same time we should not ignore the important significance of these discharges and delude our patients and ourselves into waiting too long for operation to avail."

42 WEST FIFTIETH STREET.

THE TREATMENT OF CHRONIC SUPPURATION OF THE MIDDLE EAR.*

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Probably few diseases are so little understood by the general practitioner as chronic middle ear suppuration. There is certainly, no pathological condition occurring within the tympanic body, upon which he should be better informed.

Several years ago I examined carefully the statistics of the New York Eye and Ear Infirmary, for a period of ten years, in order to determine the relative frequency with which serious intracranial complications followed middle ear suppuration. I was astonished to find that some intracranial complications followed in one per cent. of every case, or, in other words, a little over one per cent. of all cases of middle ear suppuration were found to develop some intracranial lesion. When we remember that these intracranial lesions comprise epidural abscess, diffuse meningitis, sinus thrombosis, and brain abscess, and that the first of these complications, namely, epidural abscess, alone, is the only one which does not constitute a lesion of the greatest menace to life, we can easily see how important it is for the general practitioner, not only to recognize early the presence of a chronic middle ear suppuration, but also to be able to intelligently direct the patient towards securing relief from this condition.

As my paper is limited to the treatment of chronic suppuration of the middle ear, I shall say but little about acute middle ear suppuration. Much might be written with advantage upon this subject. These cases are seen, ordinarily, in the very early stages by the general practitioner. If recognized early and treated properly, the cases of chronic suppuration of the middle ear would be very few. For this reason, I am going to say a few words about acute middle ear suppuration. While the symptoms of acute, middle ear suppuration in the adult are usually sufficiently characteristic to call attention to the ear, in infancy, the only symptom which we may have of an acute inflammatory process within the tympanum is a sudden and unexplained rise in temperature. This is an exceedingly important point to be remembered. Cases of acute middle ear suppuration may come on as the result of the insufflation of water into the tympanum, either in the bath or during the use of the nasal douche, or they may complicate an acute coryza or an attack of influenza. They may also complicate any of the exanthemata, particularly measles. In adult life, as before stated, the patient ordinarily complains of aural symptoms. In infancy a sudden and unexplained rise in temperature is frequently the only symptom which the general practitioner has to guide him in locating the lesion. It should be a rule, therefore, to which there is no exception, that in the case of an unexplained temperature in a child, especially in a child suffering from one of the exanthemata, the ears should be carefully examined if no other cause for the temperature can be found.

I will not burden you with the treatment of the acute cases. As you know, an acute inflammation of the tympanum requires but one mode of treat-

ment, and that is, free incision of the drum membrane, so as to give exit to the products of inflammation. It is so that the drum membrane should be invariably performed early in every case, as soon as there is distinct evidence of inflammation, and before there is any large accumulation of fluid within the tympanic cavity. To wait until the drum membrane is bulging is almost criminal, provided there is sufficient redness of the membrana tympani before this to explain the temperature. Free incision of the membrana tympani, followed by frequent irrigation with an antiseptic fluid, will ordinarily check an acute inflammatory process in every instance, and will not only prevent the extension of the acute inflammation to neighboring structures, such as the mastoid and the intracranial contents, but will also prevent what is sometimes considered a mild sequel, but one which is really fraught with great danger, namely, a persistent aural discharge or a chronic middle ear suppuration.

The recognition of a chronic middle ear suppuration is exceedingly easy. It should be remembered that whenever a purulent discharge is present in the external auditory meatus for a period of five or six weeks, such a condition, in almost every instance, means a chronic suppuration within the tympanic cavity. If we exclude the rare cases of neoplasm of the external auditory canal, there is no other condition which can give rise to a purulent discharge in the canal for this length of time, and consequently, the lesion must be looked for within the tympanum. A discharge, then, from the ear, which has lasted for six weeks or more, means that the patient is suffering from a chronic middle ear suppuration.

What is the conservative treatment of chronic middle ear suppuration? In the first place, thorough cleansing of the canal should be at once instituted. The ear must be syringed with a mild antiseptic solution, the one which I prefer being one of bichloride of mercury, of a strength of 1 to 6,000 or 1 to 10,000, according to the sensitiveness of the tissues. In performing this irrigation, sufficient fluid should be used each time to thoroughly cleanse the canal. Experience shows that this cannot be done with less than half a pint of fluid. The syringing is best done with a small, soft rubber bulb syringe. The frequency with which the irrigation is repeated will depend upon the amount of discharge. If the discharge is profuse, it will be necessary to irrigate the ear every two hours during the day and every four or six hours during the night. In cases where the discharge is less profuse, the interval between each irrigation can be prolonged.

The examination of the ear is of great value in determining the probable outcome in any individual case. Given a case, for instance, in which the discharge has only lasted for six or seven weeks, and where, on examination, we find a small perforation in the membrana tympani, enlargement of this perforation by free incision, and the subsequent employment of irrigation, may clear up the attack. In cases where granulation tissue is present, the granulation tissue should be removed by means of the curette, in order to discover the actual condition of the tympanum. Rarely, granulation tissue results simply from neglect, that is, from failure to cleanse the ear properly. In the very large majority of cases,

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however, it indicates the presence of diseased bone. A good working rule is as follows: Remove the granulation tissue immediately, and then see that the ear is kept thoroughly cleansed by irrigation. If the granulation tissue reappears, diseased bone is undoubtedly present, and mild measures of treatment will be useless. In a very small proportion of these cases, removal of the granulation tissue and subsequent irrigation will cause a complete cessation of the discharge, the membrana tympani will cicatrize, and the ear become normal. In another class of cases, we find extensive destruction of the drum membrane, without any formation of granulation tissue. These patients frequently complain of an intermittent discharge, that is, the ear only discharges when the patient has a severe cold. In these cases it is sometimes possible to follow a conservative plan of treatment—in other words, to cleanse the ear by irrigation, when the discharge appears, then to direct our measures of treatment to the upper air tract. We thus prevent repeated congestions of the middle ear by removing pathological lesions in the nose and nasopharynx. Cases of this kind are seen most frequently in children.

The most common lesion of the upper air tract, operative in these cases, is the presence of adenoid tissue within the nasopharynx. In every case of chronic middle ear suppuration occurring in childhood, the upper air tract should be examined, and adenoid vegetations, if present should be removed. Enlarged tonsils, if they exist, should also be excised. If this plan of treatment is carried out, in a very small proportion of cases we shall find that, although the membrana tympani has been largely destroyed, dermatization of the tympanic mucous membrane will occur, and the ear will give no further trouble. Unfortunately, these cases are the exception, rather than the rule. In almost every case where an aural discharge has persisted for a considerable period of time, conservative measures may temporarily check the discharge, but later the discharge will recur. This applies to almost all cases except in those where the membrana tympani becomes completely cicatrized.

I have said nothing about applications to the tympanic mucous membrane for the purpose of relieving a chronic aural discharge. These, I believe, are practically worthless, whether applied by the surgeon himself, or whether they are employed at the hands of the patient. Temporary benefit may follow, but from a close observation of cases treated in this manner, over a considerable period of years, I have found that in almost every instance, suppuration has recurred, and that more radical measures have been necessary in order to correct the suppuration. The fact that a middle ear suppuration, which has persisted for a number of years, ceases as the result of treatment, does not mean that the patient is absolutely cured. Unless the drum membrane has re-formed, thus shutting off the tympanic cavity, these cases are not safe from recurrent attacks.

What I wish to speak of particularly, is regarding the importance of recurrent attacks of suppuration. A patient presents with a history of acute otitis, perhaps in childhood. The ear becomes dry, and the patient gives no history of having a continuous discharge from the ear, but says the ear sim-

ply discharges at intervals. This discharge may be only slight at the time when it occurs. The repeated recurrence of these attacks constitutes a very grave danger. Only recently I operated in a case in which the symptoms had never been severe. The patient had an acute otitis three years prior to the operation, and I found a small perforation in the posterior portion of the membrana tympani. The edges of the perforation were inverted, and partially adherent to the internal tympanic wall. The ear had been treated by the conservative method, and only annoyed the patient at intervals. Owing to the fact that the conservative plan had been followed for three years, I advised immediate operation. At the time of operation, I found a large perforation through the roof of the tympanum, so that the dura in the middle cranial fossa was in immediate contact with softened bone, covered with granulation tissue. There was also beginning erosion about the posterior semicircular canal. Here was a mild case, and in which conservative measures might have been tried. The absence of any marked obstructive lesion in the nose or nasopharynx led me to urge an immediate radical operation, and the condition found certainly justified the advice given.

When we come to a consideration of the operative treatment of these cases, two procedures are open to us: First, the removal of the ossicula through the external auditory canal by the operation of ossiculectomy, with a thorough curettage of the walls of the tympanum, especially of the tympanic vault, and the possible removal of a portion of the external wall of the vault by means of properly constructed rongeur forceps. This operation is ordinarily called the "simple" operation.

According to Ludwig's statistics, the incus was carious in 85 per cent. of all cases of middle ear suppuration in which this ossicle was examined. It seemed fair, therefore, a number of years ago, to suppose that if the malleus and incus were removed, thus thoroughly draining the tympanic vault, while at the same time the middle ear was thoroughly curetted, this operation would really cure a certain number of the milder cases. Such was my own opinion a number of years ago. The results obtained from the simpler operation were flattering. Out of one hundred cases, seventy-five cures were obtained. At the present time, however, the technique of the radical operation has been so improved, and the conditions met with, even in mild cases operated in, are frequently so much more extensive than one would think, either from the condition of the ear or from the symptoms of which the patient complains, that I have practically discarded the operation of ossiculectomy for the relief of purulent otitis, and believe that every case of chronic middle ear suppuration which fails to yield promptly to the milder measures of treatment already outlined, should be subjected to the radical operation. Take the case stated before, and which is only one of a very large number. With very little apparent destruction within the tympanum, we found extensive destruction of the tympanic roof. Infection might easily have occurred in this region after even a mild congestion of the middle ear, and have been followed by rapidly fatal results.

The radical operation, therefore, does not, I think, deserve its name. I believe that the radical opera-

tion is really the most conservative operation to perform in cases of this character. I will only go into the technique of the radical operation briefly. This operation is conducted as follows: An incision is made behind the ear, from the tip of the mastoid to the point of the upper attachment of the auricle. This incision is curvilinear, and is situated at a distance of about half an inch behind the line of auricular attachment. The soft parts are then separated from the bone by means of the periosteum elevator, and the anterior flap, including the auricle, retracted forward, so as to expose the upper, posterior, and inferior margins of the bony meatus. The cartilaginous canal is separated from the bony canal along its posterior, superior, and inferior aspects, either by means of a blunt dissector or the blade of a blunt scissors. This dissection is carried inward as near the tympanum as possible. As we approach the tympanic ring, the soft tissues naturally tear through, thus causing a perforation of the posterior wall of the meatus. A strip of gauze is then threaded through the external auditory canal, and brought out through the torn meatus into the posterior wound. The ends of this strip are tied together, and the anterior flap pulled forward by traction on this strip. By means of gouges of various sizes, beginning with the larger gouge and using successively smaller sizes, the auditory meatus is enlarged backward at the expense of the mastoid cortex, care being taken not to remove the bone above the plane of the superior wall of the bony canal. Just below the level of the superior wall of the canal, the bone is removed deeper and deeper until the mastoid antrum is entered. A probe can then be introduced into the antrum and carried downward, forward, and inward into the tympanic cavity.

The next step of the operation is to remove the external wall of the tympanic vault, so as to throw the antrum, tympanic vault, and lower part of the tympanic cavity into the external auditory meatus. The removal of the external wall of the vault, that is, the superior wall of the external auditory meatus at its inner extremity, is best effected by means of a medium sized gouge, and the procedure is best carried out under good illumination, either by means of the forehead headlight or by means of reflected light, using the ordinary reflecting mirror. Care should be exercised in removing the bony bridge at the upper and posterior angle of the canal as, if the gouge is carried too low, either the horizontal semicircular canal or the facial nerve, which lies immediately below it, may be injured, while, if the gouge is carried too high, the middle cranial fossa may be opened. It is sometimes possible to break down this bony partition by means of the curette inserted into the mastoid antrum, crowding the instrument forward and slightly upward. The gouge is ordinarily the best instrument to use in conducting this manipulation.

After the antrum, tympanic vault, and lower portion of the tympanic cavity have been amalgamated with the canal, careful curettage of the entire bony cavity is performed. The ossicles will be seen lying in position, and are removed either by means of the curette or forceps. The height of the tympanic roof varies in each case; sometimes it lies very low, while at other times, at this stage of the operation,

there will be a considerable overhang of the outer wall of the tympanic vault. It is important that these overhanging edges be thoroughly removed, either by means of the gouge or curette, so that the upper wall of the cavity will lie practically in a horizontal plane. It is also important, in conducting the curettage, that a good view be obtained of the field of operation. Hemorrhage is sometimes annoying, as it obstructs the operative field, but this difficulty is easily overcome if the bony cavity is packed for a few moments with a strip of gauze saturated in a 1 to 1,000 solution of adrenalin chloride. This controls the hemorrhage, and enables the operator to see exactly what he is doing. After the tympanic vault and antrum have been treated in the manner described, the operator locates the horizontal semicircular canal, which will be seen as a white ridge of dense bone, passing backward, outward, and slightly downward through the floor of the tympanic vault into the floor of the mastoid antrum. This ridge constitutes an important landmark. The remainder of the posterior wall of the canal is then broken down from the entrance of the external auditory meatus where the bone is removed on a level with the floor of the canal, the line of section through the bone being gradually sloped upward until it reaches the horizontal semicircular canal. If the bone is removed on a level with the floor as far as the horizontal semicircular canal, injury to the facial nerve is almost certain to occur.

The next step is with the gouge or curette to cautiously remove that portion of the posterior wall of the canal which forms the external wall of the posterior tympanic space. The facial nerve lies in close proximity to this region, and great gentleness must be used in all manipulations in order not to injure the nerve. Similarly, by means of the curette, the inferior wall of the meatus, at its inner extremity, is cautiously scraped away so as to remove the outer wall of the hypotympanic space, that is, the outer wall of that part of the middle ear lying below the level of the inferior wall of the meatus. The mouth of the Eustachian tube is then thoroughly curetted, the cutting being done on the anterior and superior aspects so as to avoid injury of the internal carotid artery.

This constitutes roughly the radical operation. It goes without saying that the entire cavity must be thoroughly inspected and all softened areas followed until either healthy bone is reached in every direction or until all bone is removed and the dura exposed. In many of these cases, it is necessary to expose the dura in order to remove every vestige of disease.

The next procedure is to enlarge the external auditory meatus by means of a plastic operation, so that free drainage of the entire radical cavity can be obtained through the external auditory canal.

The method to be employed in forming a conchal flap, will vary in each individual case, and also, according to the choice of each individual operator. Three methods or modifications of these are now in vogue. The first and simplest consists in making a longitudinal incision along the middle of the posterior wall of the external auditory meatus, this incision being extended well out into the concha. At the conchal extremity of this incision, two incisions are made, one upward and the other downward,

at right angles to the original longitudinal incision. In this manner, two quadrilateral flaps are formed. The cartilage and fibrous tissue are carefully removed from these flaps, leaving the integument alone. The upper flap is then sutured upward upon itself, raw surface to raw surface, and the lower flap sutured downward upon itself, raw surface to raw surface. In this way, not only is the meatus enlarged, but a certain amount of integument is carried into the radical cavity, the upper flap partially lining the cavity above and the lower flap partially covering its lower aspect. A second method, known as the "Körner" method, consists in making two longitudinal incisions, one along the superoposterior wall of the meatus, well out into the concha, and another along the posteroinferior wall of the meatus, of the same length as the upper incision. This forms a long tongue shaped flap, from which all cartilage and fibrous tissue are removed. The tegumentary tongue left is carried backward into the radical cavity and held in position by firm packing. The flap forms a tegumentary covering for the posterior portion of the radical cavity, and also forms a focus from which dermatization may take place.

The flap which I prefer is the one originally suggested by Mr. Ballance, of London, and slightly modified by myself. This flap is cut in the following manner: A director is carried into the external auditory meatus and brought out through the posterior opening. The groove in the director is directed downward and forward. A long narrow knife is inserted into the groove of the director and splits the inferior wall of the cartilaginous meatus longitudinally, until the point of the knife appears in the meatus. The blade of the knife is then first turned horizontally backward and then swept upward, cutting a curved flap from the lower and posterior walls of the meatus, including as much of the concha as may seem desirable. If a large meatus is desired, the knife is carried well out into the concha before its cutting edge is turned upward. If great enlargement of the meatus is not necessary, the knife is turned upward as soon as it passes the posteroinferior margin of the meatal orifice, so as to enlarge the meatus but slightly. By this method we can cut a flap of any size, and one which will adapt itself to any cavity. All cartilage and fibrous tissue are dissected from this flap, and the flap is then sutured upward and backward upon itself. Sometimes it is attached to the posterior raw surface of the anterior flap, which is really the posterior surface of the auricle. At other times it is attached higher up, either to the aponeurosis of the temporal muscle or, where the temporal muscle lies very low, even to the temporal muscle itself. When the auricle is replaced, this flap sinks into the radical cavity, and serves to cover the tympanic roof and a portion of the roof of the mastoid antrum.

In a series of over 250 radical operations, performed during the last few years, I can unhesitatingly say that the best results have been obtained where it has been possible to line the cavity with Tiersch grafts at the time of the operation. A primary grafting should be done, in every case, unless there has been exposure of the dura in the middle cranial fossa, or exposure of the sinus, or unless the case has been so exceedingly foul as to

render it improbable that the grafts would adhere. The technique of the operation is simple: It consists in carrying a large epithelial graft into the cavity, and securing its perfect apposition to the bony cavity by means of sucking the air out from under it by a pipette. The grafts should be large enough to line the cavity completely. A second graft is applied to the cut surface of the auricle resulting from the formation of the meatal flap. This latter graft is of great importance, as it prevents the development of granulation tissue during the process of healing, and renders the dressing of the case practically painless. This graft may be applied either through the posterior opening, by simply wrapping it over the cut surface so that one edge of the graft lies in the concha and the other edge over the raw surface of the posterior incision, or it may be introduced through the meatus after suture of the posterior wound.

In cases where either the dura or sinus is exposed, the tympanic graft is not employed. The radical cavity is packed with iodoform gauze, the auricle sutured into position, and a meatal graft applied through the enlarged external auditory meatus. Where both the tympanic and meatal grafts are employed, the posterior wound is also sutured. In no case do I employ posterior drainage, excepting where it has been necessary to remove the entire tip of the mastoid, thus leaving a dead space at the inferior angle of the wound where secretion might collect. In such a case the lower angle of the wound is left open, and a small drain of gauze inserted in this region. This drain is removed at the first dressing, and may or may not be replaced, according to the conditions found at the first dressing.

The results obtained in all cases of radical operation have been exceedingly satisfactory. Out of my first series of cases, I obtained about 75 per cent. of cures. With improved technique, over 85 per cent. have been cured. Of the remaining 15 per cent., in only a few isolated cases has a second operation been necessary. I can only remember three secondary operations out of the series of 250 cases. In those cases not completely cured, and not subjected to a second operation, the discharge was greatly diminished in quantity, and caused the patient so little annoyance that a second operation was not deemed advisable. We may put the mortality of the operation as practically nil. A few cases in this series have been followed by a fatal result, but in every instance, with one exception, death was due to an intracranial lesion, which had undoubtedly existed prior to the radical operation. In only one instance did death follow immediately upon the operation, and in this instance the patient died of pneumonia.

When we consider that these cases embrace not only the cases in private practice, but also those in hospital practice as well, the results are certainly good. In my private cases, I can recall but a single instance in which the radical operation has not been followed by perfect success.

Regarding the effect upon the hearing, out of the 250 cases, in only a very few cases has the hearing been made worse. In the others it has either remained the same as before operation, or has been improved.

In deciding upon the propriety of a radical oper-

ation in a given case, and in giving a prognosis in regard to the hearing, we can say that if the hearing in the ear to be operated on is poor, that is, if the whispered voice is heard only at a distance of one foot from the ear, the hearing will probably be improved. If, on the other hand, as sometimes happens, in spite of extensive suppuration, the hearing is good, that is, the whispered voice is heard at a distance of ten or fifteen feet, in such a case the hearing would probably be somewhat impaired as the result of the operation. In cases where a functional examination shows labyrinthine involvement, the hearing would also probably be impaired by operation.

The radical operation, then, offers the ideal method for the treatment of chronic middle ear suppuration. It removes the menace to life, it interferes with the function of the organ already diseased in but a very small proportion of cases, and, as I believe, with increasingly improved technique, the procedure will ultimately be employed in all cases of chronic middle ear suppuration.

17 WEST FORTY-SIXTH STREET.

A PRELIMINARY CONSIDERATION OF THE TREATMENT OF CANCER.

BY T. H. EVANS, M. D.,
Philadelphia.

The time is passing in which the cumbrous and polysyllabic terminology employed in designating morbid processes will have any value. The writer ventures to think that the star of destiny has risen over the heads of the physiologists, and that from them we shall learn a simple and practical means of controlling variant human economies.

In the first place we have learned that the tissues of the body are few, and that disease does not produce new kinds of tissue in the histological sense. Further, we know that metabolism requires a proportion of fat, sugar, proteid, water, and mineral salts. These, under many floriant shapes, resolve to factors of simplicity in the mechanism of the elementary body structures.

When we approach the theories of disease transmissibility and of germ causation, we must bring with us the additional fact of some prechange in the host or human organism. It would not be entirely true to credit one locality for the production of its flora and fauna unless we take into consideration possibilities of modifying influence. So, in the body of man, we must consider other factors than that of approximation more or less relative, in setting forth the *modus operandi* of disease.

For the same reason that I consult a diagnostician and a surgeon, I consult a physiologist. In taking up the subject of carcinoma it is essential to recognize not alone the resulting morbid physiology, but the antecedent changes in nutrition, and, in fact, in each of the elementary histological functions and in the general protoplasmic reflexes which grow out of them.

The Beard, or Edinburgh, treatment of malignant disease has opened our eyes to another form of physiological therapeutics. Because we are using serum and other products of associated animal organisms to combat disease, means a revolution greater than words can tell in the theory and prac-

tice of medicine. The Beard treatment, in so far as we may understand it, appears to be largely empiric. And yet, in its essence, it implies a reversion to the locality of elementary nutrition as concerned with the fundamental tissues of the body.

What suggestions come to mind? In a talk with Professor Tyson, of the University of Pennsylvania at Philadelphia, he remarked on the cases of malignant disease associated with the presence of sugar in the urine. And he further commented on the association of actual diabetes. I had been thinking for some time on the relation of carbohydrate metabolism in cases of cancer. So I ventured to consult the professor of physiology in the university, my friend Dr. Reichert, who seemed interested in the idea that his subject appealed to physicians in a practical manner.

Briefly, before using injections of trypsin and amylopsin, I placed the patient upon diet suitable for a case of diabetes. (I had a preliminary examination for sugar performed in a reputable laboratory, and received a negative report.)

Some of the reasons which led me to suspect a relation between sugar metabolism and conditions of malignant growth have to do with digestive changes—flatulence and amylaceous dyspepsia, and the dislike of patients for candy and other forms of carbohydrate food stuffs. We usually see a yellowing of the conjunctiva and other icteric symptoms such as pruritus, as described by Riesman, of Philadelphia. Moreover, the digestive element narrows down to faulty sugar values because they represent catabolic and contractile elements. To what extent this may be true is difficult to assert. It is evident that in the breaking up of sugar in order to nutrify protoplasm, there may be a not entirely vicious production. The end products, in other words, may not all of them conduce to the morbid condition? It is immaterial, in one sense, whether cancer is really transmissible, or infectious, so far as we study the changes in the body which result in furnishing a favorable locality to the evolution of malignant disease.

Therefore, it is essential to decide upon the hygiene of cases before going further with curative agents. I am willing to say at this early time that the value of trypsin is not so great unless we employ amylopsin. In this I am quoting Beard. And it is evident that the value which these substances confer should indicate the character of hygiene which we must outline.

It would be productive of unnecessary body friction to introduce more and more of the substances, which we are endeavoring to destroy or modify, out of their natural forms as they exist in the body. I suggest, at this early time, to all who employ the Beard treatment, the necessity of regulating the diet.

But, and this is a very large but, I am certain that our studies in the treatment of malignant disease are but the open sesame to the study of general treatment, applied to many morbid processes. In every disease in which we may discover some inherent body vice of sugar metabolism, not alone in the digestive tract and its associated parenchymas, but throughout the body in the very function of cell and cell, in all of these I wish to hope that we approach an understanding.

We know that the antitoxine of value in the management of cases of diphtheria is employed with some use in cerebrospinal fever and in other diseases. It may be that the value of diphtheria antitoxine is due to its relation to proteid metabolism. I have not the opportunity of performing adequate tests in this matter.

I am now engaged in using injections of amylopsin in other disease than that of carcinoma, and I am regulating the carbohydrate hygiene.

As I write, there comes to me a report from the previous World Congress of Medicine, which took place at Lisbon. In it I read of the suggestion of Thomas Logan, of Harrogate, London.

He speaks of the circulation of cerebrospinal fluid, and also of the existence of a theoretic lymph heart situated around the inferior projection of the spinal axis. This, he states, discharges a portion of lymph through passageways which communicate with the lower portion of the alimentary canal, and around the anus. In addition to our curative methods in the treatment of disease, we must employ means of relief from the symptoms. Realizing as I do so well the very preliminary nature of this paper, I shall mention an adjuvant treatment which I have used in cases of pain or stress. It was suggested to me long ago in the study of obstetrics by Professor B. C. Hirst, of the University of Pennsylvania. The application of hot, wet cloths to the perinæum of the parturient woman is what I refer to. But this has quite a value in other cases in which pain or nervousness exists. Hydrotherapy is not new; but much of its rationale is so empiric that the idea which we receive from Lisbon may be valuable, in its explanation of the relief of symptoms directly through the relief of pressure by, or modification of the nature of the central lymph current.

In cases in which we may employ other than narcotics for the relief of pain and in cancer which is curable, the question of morphine habit is to be held in mind. I suggest the use of hot stupes directly to the perinæum. I have suggested the hot sitz-baths of limited duration also.

So much for the preliminary theoretic study.

When we approach the use of animal substances as therapeutical agencies, we must be very sure of their reliability. I am told that the process of amputation requires considerable heat. It is important that the stem of the ampula should be very long, or the heat will destroy the amylopsin, trypsin, etc.

In shipping quantities of these substances, it is apparent that they may be destroyed. It is possible that careless messengers may place the parcel for a moment upon the top of steam, gas, or water heaters. Indeed, I am certain that much antitoxine has been rendered valueless by its improper care in dispensing stations, to which it is brought by unscientific and thoughtless messengers. All this crankiness is justifiable when the lives of patients in special and in general weigh in the balance. In many drug stores the sun shines beautifully upon rows and rows of therapeutical agents which the physician orders his patient afterward to place in the ice chest.

Closing what I have to say, I may refer to the detached nature of the paragraphs above. This is

a matter of clinical necessity. I may say, well within the bounds of truth, that the success we have will depend forever upon eternally taking pains. I am very eager to receive correspondence from any interested in the line of thought opened by this paper. I dare not allege the merit of originality. A few years ago, in Greece, many wiser men laid the foundations of philosophy. There is some merit, however, in recognizing the value of what they did.

Summary.—This paper is written to call attention to the probabilities:—¹

1. That a restricted diet, a limitation of sugars even so far as to diabetic absolute diet, will allow more dosage of trypsin and amylopsin, and prevent the untoward results which have been reported as due to them.

2. That care should be taken to have good products in using animal extracts. This care must verge on "crankiness."

3. That cases of other than carcinoma may be benefited by amylopsin; especially cases in which some metabolic disturbances occur.

The writer wishes to thank Professor Allen J. Smith and Professor George A. Piersol, both of the University of Pennsylvania. They, as well as the other gentlemen mentioned in the paper, have given valuable assistance in constructing this attempt to solve a great medical problem.

3353 NORTH FRONT STREET.

ARTIFICIAL HYPERÆMIA, WITH A SPECIAL REFERENCE TO BIER'S METHOD.*

BY HEINRICH F. WOLF, M. D.,
Philadelphia.

Since the beginning of time medicine has been a favored fighting ground for all philosophic speculation, a fact which is easily understood, when we take in consideration that the human organism, beside its constant needs and frailties, is the seat of all those functions commonly spoken of as psychic, and therefore has always been the principal object of the most varying thoughts and investigations. Its defense, frequently so well arranged against all sorts of invasions, and its efforts to neutralize all existing disturbances, could not fail at all times to reawaken the questions of teleology. There is hardly a problem in medicine, which for centuries has called forth so many differing opinions and so many investigations as fever and inflammation, and also hyperæmia. Are they to be fought as disturbances, or are they to be encouraged? Concerning fever there is still no actual agreement, even though its purely mechanical treatment is in the main being desisted from.

The problem of the importance of hyperæmia has been given an entirely new turn by the labors and investigations of Professor Bier, of Germany. Before discussing these at greater length, permit me to mention that Kisskalt, as late as the year 1900, attempted to prove that hyperæmia *per se* exerts a disease producing influence. He has not been able to prove this to the satisfaction of most men, but it must be admitted without much argument that influences exerting a curative action when existing to a moderate degree, will, when present to a greater extent, have injurious effects.

¹ True, so far as the writer's clinical experience indicates.

* Paper read before a meeting of the Northern Medical Association of Philadelphia, March 22, 1907.

The rationale which led Bier to perform his experiments is well known. Rokitsansky, as well as others before him, have emphasized that tuberculosis of the lungs was rarely ever found in combination with disease of the mitral valve, and particularly with stenosis, while disease of the right side of the heart favored development of tuberculosis. This statement has not been found true in every respect, but it had the effect to induce Bier to investigate the value of congestion as a remedial measure against tuberculosis of the joints. At first he had splendid successes and disheartening failures, but he continued his labors until he brought the method to its present state of perfection.

Hyperæmia, as recommended to-day by Bier, may be active or passive. The former is produced more especially by the application of dry heat. This procedure has been known for many years, but has not been extensively employed until made popular by Bier's recommendation; it was he also who first devised suitable apparatus.

Hyperæmia, the result of hot applications such as alcohol dressings, is considered mainly passive by Bier, although others speak of it as active. I consider it very difficult to decide absolutely in favor of either, but should prefer to class myself among those who consider this hyperæmia as active. Either the prevention of caloric loss or the large caloric gain produces a localized dilatation of bloodvessels, which in the presence of unchanged cardiac power and unchanged resistance in the remaining vessels must lead to an increase in the flow of blood. If the heat application is employed too long it may lead to inflammation and congestion.

Through the introduction of passive hyperæmia into medicine, Bier has given us a procedure which has been used but very little until now; it has occasionally been employed in the treatment of pseud-arthroses.

This procedure is applied as follows: An Esmarch rubber bandage is applied to the part of the body in question in such a manner as to compress the small veins; the arterial pulse must remain perfectly unchanged. The coloration of the skin should be a symmetrical blue and without the vermilion spots seen when the parts are tightly bound. The hand should not have the sensation of cold, and in the case of an acute inflammatory condition should even feel warm (hot congestion). The congestion should never give pain, but on the contrary, should alleviate pain. It occurs very rarely that the bandage augments the pain in spite of slight congestion; if it does so, the increased pain is probably caused by the pressure of the bandage on a painful nerve. Occasionally it happens that the proper amount of congestion cannot be produced; if so it will be necessary to attempt this through a number of artificial devices, such as the induction of a local dermatitis, an active hyperæmia, etc.

I shall now first point out to you the indications for the different methods, their modifications for the respective types of disease, their successes, and finally I wish to discuss quite briefly the theoretical views concerning their causation of action.

Active hyperæmia in the form of hot air treatment, and I shall not speak of any other form, has been employed for many years. As long as eight

years ago I have made extensive use of hot air in persistent gonorrhœal and other chronic joint diseases. Bier recommends it for chronic inflammations of joints, for all types of neuralgiæ, and also for chorea and epilepsy. A large number of apparatus have been devised for carrying out this method, but in as much as the Bier apparatus are the simplest, I consider them the best. The heat is furnished by gas or alcohol burners. Reitler's modification, placing chlorinated lime into the apparatus, keeps the air dry and permits the skin to stand higher degrees of heat. Apparatus employing electric heat have also been devised; they are clean but expensive; among them must be mentioned the various electric light baths of Kellogg.

The indications for the use of these apparatus are found in all chronic diseases of joints, in neuralgia, lumbago, muscular rheumatism, scoliosis; in arthritis deformans the improvement is sometimes very slight. Of late Bier employs hot air also in beginning senile gangrene and in frost bite, and he reports good results in these conditions. Through the courtesy of Dr. Riesman I was enabled to treat a case of gangrene of the foot with the hot air method in the Polyclinic Hospital. But as the patient is under this treatment for only five days we cannot as yet expect much result. The patient feels relieved, but of course I do not consider this of any importance for the final outcome of the experiment. The hot air apparatus required for the treatment was placed at my disposal by Mr. Walter, of the Pennsylvania Orthopædic Institute.¹ In acute inflammation Bier used to advise against the use of acute hyperæmia, but it is interesting to note that of late an American physician has begun to employ the live steam in the treatment of acute inflammations and injuries; but it is likely that during the most active reaction a passive hyperæmia is induced.

As you are bound to notice the use of active hyperæmia is quite widespread, but in this, its latest introduction into medicine, practitioners have not been given anything really new or important.

With passive hyperæmia it is entirely different. The technique I have already described; this differs, however, in the different diseases. In the treatment of joint tuberculosis Bier originally advised a congestion lasting from eight to ten hours; this frequently set up a chronic cedema, which in many cases produced unfavorable symptoms and reactions. At that time he very often had pronounced failures, large abscesses, etc. During the last few years, therefore, we employ in joint tuberculosis, following the advice of Tillmann, a moderately intense congestion lasting about an hour. The bandage is drawn somewhat tighter than usual, but it must not give pain of any great moment. The treatment may be given in the dispensary or in the physician's office. Small abscesses are seen quite often from its use; they are opened with aseptic precautions and evacuated with suitable apparatus (emptied by suction). The treatment must be continued over a long period of time, sometimes ten months and

¹On the 15th of June, 1906, this paper was read at the meeting of the American Association of Surgeons, held at the Hotel Marlborough in New York City. At the invitation of the American Association of Surgeons, the author was invited to give a demonstration of the Bier apparatus. It was found that the Bier apparatus was not quite satisfactory, and that the Bier apparatus was decidedly disturbed. After the removal of the Esmarch bandage the pulsation of the toes on the normal foot resumed at once, while in the affected foot it required fully one minute.

more, but the results are frequently brilliant. The joints sometimes recover with perfect function. Bier records the cases of two patients who later were found to be fit to perform military service. In cases with very bad position of the joint the passive hyperæmia treatment should not be employed; it is also contraindicated in cases with mixed infection and fistulæ. The Bier treatment is without a doubt a most excellent method of treatment, but it demands extraordinary patience from both physician and patient. During the treatment slight active and passive movements may be executed, as during the congestion the pain is markedly diminished. It is easily understood that the long duration of the treatment in cases of tuberculosis prevents the Bier method from becoming very popular. As long as a physician is not convinced of the efficacy of a measure, he is not likely to be disposed to give up months before a successful result can be noticed. It is very interesting and significant, however, that Bier reports the bone changes demonstrated by the Röntgen rays in tuberculosis. The bone outlines, which before the treatment are very indistinct, are seen to become sharper in the course of treatment, and finally as the patient recovers, a normal outline is observed.

On the contrary, however, it must be considered a distinct omission, if Bier's procedure is not employed in acute articular rheumatism, phlegmons, whitlows, mastites, etc.

In these conditions the method is to be applied radically different from that in tuberculosis. In the following lines I shall only describe the congestion hyperæmia produced by bandages, as hyperæmia induced by suction apparatus requires special appliances, which not every practicing physician possesses. The bandage is applied over gauze in such a manner as to produce a symmetrically bluish color of the skin. The bandage should not produce the slightest amount of pain, but the preexisting pain should diminish within a few minutes after its application. The bandage is, therefore, not applied as tightly as in the treatment of tuberculosis. It remains in position for from twenty to twenty-two hours daily, with an intermission of from one to two hours, during which time the limb must be elevated. The place of application of the bandage must be changed each time. The treatment must result in the production of a well marked oedema, and the skin must become intensely red and hot; the impression of heightened inflammation must be given. During the treatment the joints must be moved. Abscesses should be opened with small incisions and either cleansed with normal salt solution or emptied with suction apparatus. Small abscesses are frequently absorbed without incision. Bier reports having seen perfect recoveries in beginning pyæmic metastases. As the patient improves the duration of the treatment may be shortened, but the hyperæmia must be induced daily, until the patient is entirely well and the inflammation has disappeared.

The indications for hyperæmia production are as follows: All acute and subacute inflammatory processes, suppurations of joints, osteomyelitis, and in the case of the head, mastoiditis. Still more recently Josef has included infected wounds among the indications and has reported very favorable results with the hyperæmia treatment.

The results are most splendid; I have had till now no opportunity to treat very many cases until two weeks ago, but two very severe cases of abscess of the hand, in which the tendons were exposed, I have seen recover with perfect function. In gonorrhœal joint affections I have seen splendid results. The return of function is complete in most cases, in the case of the hands almost complete. The most important advantage of the method, however, lies in the fact that the excruciating pains of the patient disappear to such an extent as to enable us to perform passive movements in their joints. I have been treating gonorrhœal joints for years with hot air, fixation dressings, moist dressings, massage, and am therefore in a position to appreciate the difference in the treatment and the results. In addition I have seen other cases recover at Bier's clinic in Bonn, among them a very interesting case of osteomyelitis. During last week I treated three patients at the Polyclinic Hospital, who were suffering with phlegmon of the hand, and have already gained very good results.

I should especially like to relate one of these cases, that of a colored man who as a mere result of a bite had a necrosis of the bones of the small finger and the tendon.

When I first saw him, on Saturday, March 16th, he was suffering intense pain, his temperature was 102° F. A lymphangitis was present. I put the bandage on according to Bier's directions. The next morning his temperature was normal. On Monday the lymphangitis had disappeared; the pain had left him since the application of the bandage. In consequence of this treatment an amputation of the necrotic parts only was necessary, saving him from losing the whole hand. The condition of the patient is now satisfactory.

The patients were accessible to me through the kindness of Dr. Miller and Dr. Roberts. Those treated by me personally are, as you see, not very numerous. The results, however, are the same as those of the greater number of published reports to date, and because of this I believe myself justified in discussing the matter before you.

The treatment with suction apparatus is founded upon the same theory, the technique and indications, however, are absolutely different. Single treatments with the instruments must not exceed forty-five minutes, and after each five minutes' suction the patient must be given two to three minutes' rest. No pain should be produced by the method, and the strength of the suction should be regulated by this. Suction is useful in all pustular affections, mastitis, furunculosis, panaritium, etc. The instruments must be kept thoroughly aseptic, they must be boiled and kept in bichloride solution. The furuncle treatment seems to me to be too complicated, and I can hardly believe that it will ever become very popular, except in isolated instances. After the boil, however, has opened or has broken down, the removal of the pus by suction is very advantageous.

Thus far I have spoken only about the technique and indications, and I now wish to mention a few words on the theory of the subject. I am firmly of the opinion that theory gains its greatest incentive from practice, and also that practical medicine will succeed much easier and quicker, if it is based upon theory.

Hyperæmia is supposed to possess a number of

different properties: It influences nutrition and absorption; it helps to destroy necrotic tissues and bacteria. The improvement in nutrition has been known to us for a long time and because of it, stasis has been made use of in the treatment of fractures with insufficient callus formation. The nutritive influence is also recognized in the restoration of the normal bone structure in joint tuberculosis as demonstrated by the Röntgen rays. Tissues already dead cannot be revived by the stasis, but everything preservable is saved. Dead tissue under the influence of stasis breaks down rapidly, and if the abscesses are small, the dead structure may be absorbed. In the case of active hyperæmia there is an increased amount of blood flowing through the tissues and, as the more recent investigations have shown that the chief path for absorption of all soluble substances is the bloodvessel system, the more blood passes into the affected portion of the body the more and the quicker are dead structures absorbed. It is because of this that where absorption is to be increased in chronic diseases, active hyperæmia is chiefly employed.

In other instances it becomes in a manner necessary to actually dissolve tissues. Bier points to the manifest analogy between passive hyperæmia and pregnancy. During the latter rigid scars of the vagina, which would ordinarily offer an almost certain impediment to the passage of the foetus, are softened to such an extent that birth may pass off without assistance. The œdema induced by the passive hyperæmia of pregnancy loosens the tissue. The actual factors inducing the dissolving are not known to us.

A particularly important discovery was made by Nötzel when he observed the influence of passive hyperæmia on bacteria injected into the hyperæmic extremity. He found that even fatal doses were followed by absolutely no symptoms whatsoever, while all the control animals died. This of course is of the greatest importance, as it explains the favorable reaction of the treatment in inflammatory diseases. The real cause of this, however, is not yet well recognized. Hamburger assumes that the increased quantity of carbonic acid acts as bactericidal agent, others that the toxines are retained and that the bacteria are destroyed by their own poisonous products, still others emphasize the influence exerted by the treatment on the leucocytes. It is also of interest to note that poisons injected into a congested limb do not produce symptoms of the same degree of intensity as when injected into a normal limb. This may probably explain why the fever in suppurative processes disappears as soon as the hyperæmia treatment is instituted.

The brief period of time at my disposal prevents the possibility of discussing the subject at greater detail, but what I have said will demonstrate to you that Bier's hyperæmia treatment is one of the most important acquisitions of recent therapeutics, and will make clear to you what Colley meant when he closed a longer dissertation dealing with his experience on this same subject with the sentence: "Without the passive hyperæmia treatment I would not wish to be a surgeon."

REPORT OF A CASE OF CEREBELLAR ABSCESS.

By JOHN D. RICHARDS, M. D.

New York.

The patient, a male, age twenty-five, had had several years a chronic suppurative otitis involving the left ear, accompanied with but slight discharge, never with warning symptoms.

On July 3, 1906, for the relief of the suppurative otitis a Schwartz-Schaeffer operation was performed, revealing a necrotic tegmen tympani and posterior auricle wall with the adjacent dura thickened and inflamed. The patient's progress was satisfactory until three weeks later when a tooth became ulcerated and the face swollen. General headache developed. The mastoid wound now discharged freely a foul stinking pus; it was thought that the wound had become infected from the aforementioned source.

On August 1, 1906, he was readmitted to the hospital complaining of severe headache and dizziness. He had vomited several times during the few preceding days. This vomiting was not cerebral in character. He showed a tendency to stagger and to fall opposite to the side involved; he required support. The history noted at this time no aphasia, no optic neuritis, no nystagmus; cerebation was clear; respiration, 36; pulse, 50; temperature, 97.5° F.; bowels were constipated and headache was present.

He was reoperated upon with the result that a large, walled in, epidural abscess immediately above the sinus knee was evacuated. The base of the abscess was formed by necrotic granulations, which invested the dura. Its pus was foul and stinking. The temporo-sphenoidal lobe was explored at the time with negative results.

August 2nd. The general appearance was better. Headache had nearly disappeared; the pulse had increased in rapidity; temperature was slightly above normal; cerebation was clear, but questionable haziness of both optic papillæ was noted.

August 4th. Undoubted papillitis was present in both eyes.

August 5th. The general symptoms became rather suddenly aggravated, and it was at this time that the patient first came under my observation.

An examination revealed the following conditions: Slight drowsiness; a tendency when interrogated to become irritable and restless. His answers, though delayed, were accurate. The patient complained of feeling sick and nauseated, and of intense headache over the entire left half of the head. He supported the head with the hand. The face was dusky and moist with perspiration. During the past two days he had lost a noticeable amount of flesh. The temperature had risen to 102.6° F.; pulse ranged from 72 to 140 per minute. He was sensitive to light. His appearance was that of an extremely sick man.

Both pupils were well dilated, the left, corresponding to the involved side, being the larger. Both reacted quickly to accommodation and light. The consensual reactions were good. Double optic neuritis was present, the elevation of each papilla being $\frac{1}{2}$ mm. There was marked horizontal nystagmus. The movements were coarse and jerky; these were made more pronounced by directing the eyes to either the extreme right or left lateral position. The oscillations were most marked when the eyes were turned from the involved side. There was no abducens movement. I mention this because when removing certain portions of the labyrinth for suppurative disease, the same phenomenon is present. When following the moving finger from left to right the oscillations were from left

* Reported at the meeting of the Eastern Section of the American Laryngological, Rhinological, and Otological Society, at Providence, R. I., January 5, 1907.

to right, and vice versa. The sense of smell was not impaired.

The uvula was deviated to the right side and occupied a position at right angles to the vertical direction. There was a difference in the innervation of the two sides of the palate in favor of the right. There was complete left facial paralysis, which I was informed developed about one week subsequent to the original operation. The sensation of taste in the anterior two thirds of the left half of the tongue was gone. Tactile and pain sense were preserved on both sides.

Reflexes: Both patellar reflexes were diminished; the left, corresponding to the diseased side, was practically absent. Both the biceps and radial jerk on the left side were absent; on the right side both were present. In response to tickling the soles of the great toe, there was a dorsiflexion on the left side; plantar flexion on the right. There was no clonus on either side.

The tactile recognition of objects was preserved. There was no aphasia, sensory or motor, no area of anaesthesia; the position sense was good.

There was marked incoordination. On asking the patient to touch the tip of the nose with the index finger of left hand, he touched the forehead or the shoulder, and the finger pursued a devious and hesitating course. He was more accurate with the right, although incoordination here was also very noticeable. The grip of either hand was good and about equal.

There was no pain upon percussing the skull, and auscultatory percussion revealed nothing.

The diagnosis of cerebellar abscess was made.

Operation (New York Eye and Ear Infirmary).—Upon exposing the cerebellar dura the tension was found high. There was no bulging of dura. One inch behind the upper third of the sinus there was an area of cerebellum which, as seen through the dura, appeared darker than normal, with the veins engorged. Upon palpation this area seemed resistant. A small exploratory incision in the dura was made at this point. A clean knife was now passed horizontally inward for an inch and a half with negative result. It missed the abscess by going a little too high. A second puncture was made near by with similar result. An exploratory incision was next made at a point internal to the sinus, corresponding to the posterior antral wall. Upon introducing a grooved director directly backward to the depth of about one half inch, there was evacuated thin foetid pus in considerable quantity. This incision was now enlarged outward to the anterior border of the sigmoid sinus, which was very far forward, leaving little room for manipulation. A second route was made into the abscess cavity by merging the posterior exploratory incisions backward. Upon passing an encephaloscope into the cavity through the posterior incision a large quantity of thick foul pus, of the consistence of condensed cream, welled up into its lumen.

Slate colored necrotic sloughs were evacuated. The walls of the abscess cavity were thin and protruding as folds into the mouth of the encephaloscope prevented an accurate view of its interior. Rubber drainage tubes, which were later replaced by perforated bone tubes, were introduced into both openings, the tubes meeting in the central abscess cavity.

Upon the evacuation of the abscess the pulse became accelerated. No change in respiration was noticed.

The following day there was marked general improvement. The headache had disappeared; the pupils, though still dilated, were smaller than previously; incoordination was decidedly less. The total aspect of the patient had changed.

On August 9th, four days subsequent to the operation, the following was noted: The mouths of both drainage tube were filled with thin slate colored pus which has lost its foetid odor. In the depth of the

cavity necrotic disintegrating masses of brain tissue were still present. Along the tract of the drainage tubes were small pink points of granulations appearing; measured from the cerebellar dura to the inner wall of the abscess cavity, the depth was two inches. The pupils were nearly equal. The incoordination had disappeared. The left patellar reflex had returned. Nystagmus was present only when the eyes were directed either to the extreme right or left lateral position.

August 20th. The surface of the dura was red and healthy. The dressings were not foul and there was little pus with no odor. In the depth of the tube there was a small amount of pus; one or two cotton applications sufficed to remove it. On extracting the tube the drainage tract retained its patency; no pus welled up into its lumen, and its sides were covered with thin whitish slate colored pus, which when wiped away revealed a finely granular and red appearance of the wall. Drainage was taking place altogether through the posterior fistula.

The pupils were nearly normal in size, the left being slightly the larger. They responded to both accommodation and light. Horizontal nystagmus, though decreased, was still present in the extreme lateral positions; a faint vertical nystagmus was noticed. Coordination was excellent. With both index fingers he touched the nose accurately with the eyes closed. The right patellar reflex was about normal, the left a little diminished. A small slough was still to be seen in the depth of the abscess cavity. This slough was attached.

The further history of the case was uneventful. The anterior tube was extracted at the end of the second week, and the anterior opening closed. The posterior closed about the end of the third week.

In handling the case the following points were strictly adhered to:

Upon incising the dura a fresh knife was used at each time for exploratory puncture.

No attempt was made to introduce the finger into the brain or to indulge in unnecessary manipulation.

Time was not sacrificed in trying to thoroughly clear the cavity of pus and necrotic sloughs at the time of operation; simply thorough drainage was established through the two openings leading into the abscess cavity, and the cavity was allowed to drain itself. No gauze or foreign substance tending to block the flow was introduced into the cavity, other than the tubes, which retained their patency, securing constant drainage and requiring infrequent removal. Gauze does not drain.

No attempt at the removal of necrotic sloughs in the depth of the cavity was later made; these were allowed to disintegrate of their own accord, for attempt at removal showed these clots to be attached through small necrotic vessels to the walls of the cavity, which if thin, renders it liable to be torn, thus opening new avenues of infection into the adjacent encephalon.

The anterior drainage tract, which was the more inaccessible, was allowed to close prior to the posterior tract, and the quantity of pus discharged through the latter was noticed for an increase at this time.

The encephaloscope was not introduced into the cavity after the anterior opening had closed. Its introduction causes an equal displacement of brain tissue or fluid, pus, which if it has no avenue of exit increases the tension of the walls of the cavity.

These being thin, the introduction of the instrument may force pus into the encephalon. This was demonstrated at the time of operation. As the encephaloscope was introduced into the cavity through the posterior opening before the removal of the obturator, pus was forced out through the anterior opening by displacement. This is a serious objection to any instrument founded upon the principle of the encephaloscope, and illustrates the danger of using it when there is only one opening into the abscess cavity, or where there is a thin wall between the cavity and the ventricle. I believe a bivalve instrument or a thumb forceps to be safer.

The antral pus showed mixed infection; the pus of the brain abscess, the *Bacillus coli communis*. The abscess had destroyed about the anterior two fifths of the left lateral cerebellar lobe.

44 WEST FORTY-NINTH STREET

PROFESSIONAL CONFIDENCES.

By E. S. McKee, M. D.,
Cincinnati.

The question of professional confidences, professional secrets, or privileged communications is ever an interesting one and decisions of interest are now and then being handed down. One of remarkable rarity occurred recently in England. A chauffeur was taken ill, went to a public institution for treatment, and there came under the medical care of his employer, who was in service on the staff of the institution. The doctor found the patient suffering from aortic disease which rendered him a fit subject for sudden death at any time. The physician betrayed the professional secret to his business self and on the chauffeur's recovery told him of his condition and said he did not wish to risk his neck with a man in his condition, gave him two weeks wages and discharged him. With the aid of an unoccupied attorney, the chauffeur brought into court the question whether the employer coming into possession of information in his professional capacity, might use this information to determine his actions in a business capacity to the detriment of the employé. Was it as alleged a shameful abuse of a privileged communication? Was it the duty of the employer as a physician to continue to ride with the chauffeur, keeping inviolate his professional secret, until the aortic lesion resulted in a broken neck for the medical man, at which time it would be perfectly proper for him to discharge the chauffeur for incapacity? The court, however, took a very common sense view of the subject and rendered a decision in favor of the medical man.

An interesting decision of fundamental importance was rendered recently in the high court of justice in Leipsic, Germany. A woman had contracted syphilis from a man and after his death sued to recover damages from his heirs. The medical attendant of the deceased was summoned to testify, but declined on the ground that the law imposes silence on medical men in regard to the ailments of their patients. The plaintiff's counsel made a vigorous plea that the law of secrecy was no longer binding after the patient's death. The court ruled that only the patient himself was competent to release his medical attendant from the obligation of secrecy and since he had not done so before death

it was fair to presume that he did not wish to do so. Surely death should but render more sacred the confidence placed in the physician by his patient.

The following resolution was presented and passed at the Paris Academy of Medicine: "A radiograph is a document consisting of something taken directly from the patient, is something of the personality of the patient; and therefore the use of a radiograph comes under the law of professional secrecy in its strictest sense. Take for example a case of early phthisis, or one of syphilitic exostoses, examined by a man outside of the medical profession who is not bound to professional secrecy. It is the sense of the Academy, as indeed it must be of the whole profession, that x ray pictures should not be taken except by the medical profession." There is an effort being made to prevent the practice of radiotherapy in Paris by any but the medical profession.

The law on privileged communications is that the doctor, lawyer, or minister cannot be compelled to testify in court, or elsewhere, what professional knowledge he has obtained about his patient, client, or parishioner, unless he or she wishes him to do so.

Following are some of the many puzzling cases which have come before the writer in his experience:

CASE I.—A near neighbor, a delightful friend, a good patient died while we were together one evening quite unexpectedly. He had been suffering from a slight ailment and I was with him till he should go to sleep. When comparatively comfortable and in conversation he, without a moment's warning, dropped dead. His old mother, whose only child he was, gave way to the most uncontrollable grief. There was no one else to blame, so she blamed me and did it good and strong. Her brother, a physician, a good friend of mine, incensed at her persistent and prolonged abuse of me, told her that her darling boy had contracted syphilis thirty years ago which had caused his arteries to be friable and was the cause of the cerebral hemorrhage which had caused his death. This of course enraged her very much and she did not again visit her brother till he was on his death bed. I think the doctor did wrong. No amount of abuse of me should have led him to tell his sister that her idolized son had had the syphilis and thus pile sorrow upon sorrow.

CASE II.—A young man came into my office one day and in a few brief words gave me to understand that he had infected his wife with a specific disease and he wished me to come and treat her. I went and found his statement correct and conducted the case to recovery. Shortly afterwards they removed to St. Louis and remarkable to relate forgot to pay me. Later a still stranger thing happened. They each began to pay me in installments of five dollars each. They kept about neck and neck and I kept still. When they had both paid in full I returned the wife's money to her and kept his. In due time the anxiety of both to pay the bill was explained by the filing of a plea for divorce on the part of the wife. I was summoned to give my deposition in the case. I was asked what the young man had said to me when he called me, and I declined to answer, claiming privileged communication. I was dismissed and called five times. The fifth time a constable was called and I was placed under arrest and was told that I would have to go to jail and remain there till I was ready to testify on that point. I advised them not to send me to jail, which counsel they seemed to think good and said that if I would appear before the judge the next day I might go. I appeared

at the appointed hour I appeared. The case was argued and taken under advisement. I was asked to reappear in a week, which I did. The judge was not ready with his decision and I was called the third time, and at the end of three weeks was ordered by the judge to testify on this point. The argument was that the wife was the patient, the husband was not. The wife, as the patient, wanted the testimony given, hence I was ordered to give it. Had the wife not wanted me to tell I would not have been allowed to tell. The husband had come to me as to a physician, talked to me as a physician, asked me to treat his wife, giving me such information, in confidence, as he thought I needed to best manage her case. Had I treated him I could not have been ordered to testify. Here lieth his error. The judge knows more about the law than I do and probably interpreted it correctly, but if such is the law it should be changed. I should not have been ordered to tell what that woman's husband told me in confidence as a physician.

CASE III.—The husband of a young lady whom I had treated for various ailments when a young girl came to me for treatment of gonorrhœa. During the course of the treatment the wife became suspicious and approached me, wanting to know what was the matter with her husband. I replied that I would not betray secrets gained professionally from him any more than I would from her. She was no fool, however, and went to the public library, read up on the subject—a reprehensible privilege—and settled in her mind as positively as only a woman can that her husband had gonorrhœa. There was war for a time, then a short truce, when she came to me with the gonorrhœa. A divorce followed in due time. I was summoned in court but could not be made to tell on either because neither had been so foolish as not to employ me.

CASE IV.—At the clinic of the Medical College of Ohio during the summer there came to me a patient affected with a venereal disease. On the return of the students at the opening of the session she forbade me telling them what was the matter with her as she had a personal acquaintance with some of them. Had I really the right to tell them what was the disease affecting her or even to demonstrate it to them? The rights of the poor patient in the sight of the law are as those of the rich.

CASE V.—A case of unusual interest was that of a beautiful girl who was brought to me by a relative on the last of January. The relative said she had not been well since Christmas, when she was on a month's visit to a distant city. She was out of sorts, seemed grumpy, nervous, pains peculiarly placed, and no satisfactory symptoms. I prescribed and they left. A few weeks later she came to me without her relative and said she had not been unwell since Christmas. She consented to a vaginal examination with surprising readiness and I told her I feared she was pregnant. She acknowledged the opportunity and said she would get rid of it. She kept her word and about the time of one of George Washington's numerous birthdays she sent for me to attend her in a flooding spell. She disappeared from view for the present. In June she came to me a perfect wreck. Vaginal examination revealed the macroscopic symptoms of a badly neglected gonorrhœa which was confirmed by microscopic examination. Seduced, impregnated, aborted, diseased, who but he who had brought this on her should marry her and take care of her the rest of her days? The poor girl was lean, sick, thin, and weak. The long neglected gonorrhœa had involved the vulva, vagina, cervix, uterus, tubes and ovaries. She dragged slowly through the summer and in the fall began to regain some of her former good health and good looks, though the half of each seemed gone forever. The question ever pres-

ent in my mind was, ought I to tell her what was the matter with her and raise trouble generally? Ought I to tell her her real condition? Ought I to tell her mother her condition? Ought I to tell her lover her condition? Her lover though devoted seemed not to be matrimonially inclined. Ought I to try to hasten the wedding and would I by such action do more harm than good? To tell our own secrets is folly, to tell those intrusted to us is treachery. We should always remain faithful to our trust and a professional secret is the most sacred of trusts. We should lock up our patients' secrets in our memory, give them the key, and then forget.

The disturbing complications of the case are these: When she came to me first she had just been on a visit to a distant city where she had a lover. Her Cincinnati lover, more cupidus than avarus, had allowed the case to become chronic. The suspicion crossed my mind had she not conceived while away from Cincinnati, and was not her distant lover the father of her foetus rather than her Cincinnati lover? What confirmed this suspicion was the fact that she would not allow me to mention in any way whatever to her Cincinnati lover the fact that she had been pregnant and had had a miscarriage. That he was the originator of her gonorrhœa I do not doubt, but that he was the father of her foetus I do doubly doubt. I believe in truth that while she was away they were both untrue.

The lover lagged. Ought I to try to force the wedding or would I by so doing do more harm than good? I decided inaction to be the better part of valor, and let matters take their own course. The result was as good if not better than could have been expected. The placenta nuptialis was passed about nine months after the placenta foetalis had been passed. To state it plainly, they were legally married.

Verily truth hath driven fiction into exile.
CORNER GRAND AND NASSAU STREETS.

THE CÆSAREAN OPERATION UNDER DIFFICULTIES.

BY FRANK THOMAS WOODBURY,
Gandara, Island of Samar, P. I.,
Captain and Assistant Surgeon, U. S. Army.

In the late afternoon of December 20, 1906, a native Visayan urgently requested me to come and see his wife, who was in labor, as he feared matters were not going well. I thought that possibly a brief report of this case may not be uninteresting to the readers of the *Journal*.

Gandara is a one company post, which is fifteen miles from the west coast of the island of Samar, and is situated on a peninsula, at the junction of the east and north forks of the Gandara River, a noble stream flowing through a wild, uncultivated land of mountain and jungle. This water way, owing to the absence of woods and even trails, through the dense vegetation, is the only high way from the interior of Samar to the coast. Going on board the launch, which in our isolated position, affords our only means of communication with civilization and the outside world, I went down to Dumaloöng, which is a native barrio, or village, even more miserable in its squalor and poverty than many similar native towns in other islands. In passing I may remark that inhabitants of Samar are perhaps the most worthless, lazy, and unenterprising people in the whole archipelago. This town is merely a succession of filthy, ramshackle huts of bamboo and *nipa* (palm leaf) thatch built along the river bank in a

double row. The space between is dignified by the name of street; but it is nothing save the soil worn bare of grass by the feet of pedestrians. As it rains almost all the time in Samar, the avenue is naught but a collection of bogs and sloughs, which the people hop over, or walk around, and in which the ubiquitous native razor back pig grunts and wallows. The inhabitants live upon rice, a poor variety of small fish which is usually regarded as unfit for food, a few eggs, a chicken now and then, and once in a while, as a great treat, they kill one of their half starved pigs. Their clothing consists of two or three garments, and also a pair of slippers, if they are well to do.

Having landed at this metropolis in the dusk of the evening, by a bamboo staging so rickety and broken that I nearly fell through, I proceeded to the house. This resembled a large barn in shape and appointments, being used as a store house or *abaca* (the famous manila hemp fibre) and *palay*, or unhusked rice.

Having fought our way through the usual crowd of cur dogs, and passed through the doorway, we encountered about fifty natives squatting in the house, smoking cigarettes and talking like a flock of parrots.

One corner of the floorspace, about eight feet square, had been screened off with matting; thus making a square room, lined inside with sheets and covered with mosquito bar. This small apartment was imperfectly lighted by an oil lamp and two cocoanut oil lamps. Here I found the patient dressed in her usual clothing, consisting of a chemise and a print skirt, lying upon mats on the floor and with two native cotton pillows under her head. One woman was holding her hands, another her feet, and a man was pressing down with his fists in the pit of her stomach; while around her waist, a rope of twisted sheet had been tightly wound. This is the usual course of procedure among the Visayans of Samar when any one is sick.

Two other native men came in with the husband and myself, and all squatted sociably upon the floor around the patient. The husband, who fortunately understood Spanish, interpreted for me. I first had the windows (which were nothing but palm leaf shutters) opened, as the air was almost stifling, it was so hot. I then ordered every one out but the husband and two women, and removed the noose from the waist.

After much difficulty I learned that the woman was thirty-three years of age, and that this was her first confinement. (This is rather an advanced age for a native primipara.) The period of gestation could not be fixed, owing to ignorance of the last menstrual date, guesses were made averaging from six to twelve months. They then informed me that she had been in labor only since eight o'clock in the morning, but I learned several days later that she had been in labor thirty-six hours when I arrived.

Examination showed the anæmic, fragile frame usual to native women. Lungs and heart normal, pulse a little rapid, respirations normal, breasts firm, nipples prominent with dark areolæ. The uterus extended to two finger breadths above umbilicus; foetal heart sounds were faintly audible, child in left occipitoanterior position. Vaginal examination by speculum showed a widely dilated os. The liquor

amnii had escaped and the head was firmly wedged between pubis and promontory of the sacrum. The anteroposterior diameter of the pelvis seemed smaller than normal.

As I was told that she had been in labor only about ten hours then and seemed to be in fair condition, I decided to wait and observe the pains and determine more surely if the narrowing of the superior strait was sufficient to prevent birth. My observations were cut short by the sudden onset of a convulsion. Here was a dilemma. The uterus had not once contracted forcibly during my presence, and the surroundings of the patient combined with the lack of skilled assistants, clearly showed the impossibility of obtaining asepsis; while the contracted pelvis forbade attempts at podalic version.

There was no forceps nearer than eight hours by launch, and even had this instrument been available the pelvic narrowing would have no doubt prevented its successful application. Attempts at manual traction on the head with external kneading of the uterus failed utterly. Chloroform was promptly administered at the onset of the convulsive attack, which soon produced its abatement.

A quick decision was made as a last resort to perform a Cæsarean section. By this time an American teacher in the agricultural school arrived, and explained the crisis in fluent Visayan to the husband and relatives, who consented to seize the offered hope of success. Accordingly, after the priest had been summoned, the woman still partly under chloroform was wrapped in blankets, placed on a cot, and carried down to the launch by six natives. The procession created quite an excitement among the pigs, dogs, and populace.

The boat took twenty minutes to arrive at the post from whence I had been called, and the patient was immediately transferred to the small military hospital, the procession of patient, doctor, priest, and anxious relatives making a memorable picture in the tropical moonlight.

The hospital building is a long, low structure, of materials and workmanship similar to all native houses, but with an Oregon pine board floor. The rafters are bare, and the individual rooms are merely divided off from the large room by rough boards. The room used for operating was 10 feet long by 12 feet wide, and lit by an oil lamp. My only available assistants were a sergeant first class, and two privates of the Hospital Corps. I immediately put my instruments and suture materials to boil on the kitchen stove; and also sterilized a large boiler full of water. The patient was given a hypodermic injection of atropine $\frac{1}{200}$, strychnine $\frac{1}{30}$ grain, which was subsequently repeated during the operation. Private Spofford, of the Hospital Corps, administered the chloroform under my direction.

The field of operation was thoroughly scrubbed with tincture of green soap, hot water, and a hand scrub brush for five minutes, then washed with alcohol and a gauze sponge, followed by hot sterile water, and finally rinsed with alcohol again. The intended line of incision was thoroughly painted with tincture of iodine from three inches above the umbilicus down to the pubis in the median line. Sterile towels were placed over the abdomen, and my chief assistant, Sergeant Doran, and I sterilized our hands by scrubbing for five minutes with tinc-

ture of green soap, hot water, followed by alcohol, potassium permanganate, oxalic acid, and finally with sterile water. The instruments now being ready, the suture material was transferred from the sterilizer to a tincture of iodine.

A median incision was made over the iodine line from two inches above the navel, to two inches above the pubis. The fundus of the uterus was delivered through the wound, the intestines being kept back by gauze pads wet with hot, normal salt solution. The uterus was then rapidly opened in a line corresponding to the muscle incision, with scissors. The placenta was found on the anterior wall. A living male child was extracted. The sergeant then firmly grasped the neck of the uterus controlling the uterine vessels. The cord was clamped, and the baby turned over to Private Betononay, Hospital Corps, who wrapped it up in a warm blanket as soon as respiration was established. The uterus was immediately emptied of placental membranes and clots, and the wound closed with continuous sutures of iodized raw silk, passing down to, but not through, the uterine mucosa. The peritonæum was closed similarly, and the abdominal parietes with interrupted iodized silkworm gut sutures by means of a Riverdin needle. A gauze dressing and abdominal binder were applied; a partial enema of normal salt solution was given, and the patient put to bed with hot blankets and hot water bottles. The entire time consumed in preparation and operation was forty-five minutes.

The patient rallied well and speedily from the anæsthetic. One hour after operation the temperature was 100° F., pulse 136, respiration 36. Hot water in teaspoonful doses was allowed to quench thirst. The pulse, temperatures, and respirations reached their highest the day following, being 102° F., 137, and 34, at 3 p. m. After this, they fluctuated, coming down to normal on the eighth day and remaining so until the patient was discharged from the hospital on January 8th, the nineteenth day after operation. Atropine $\frac{1}{200}$, strychnine $\frac{1}{30}$ grain were given, at first every four hours, and morphine at night when needed, hypodermically. Later they were given by mouth with acetphenetidin 3 grains.

Urine was passed by catheter every four hours until the third day, and showed no albumin at any time (specific gravity 1.020 to 1.027). The bowels were kept open by enemata of magnesium sulphate ounce 1, glycerin drachm 4, oil of turpentine drops 5, in a pint of hot water, and, later, by compound aloin pills, administered on two occasions. The uterus and vagina were douched daily with Lugol's solution ounce 2, in hot normal salt solution two quarts, and the vagina packed with iodoform gauze. The day following the operation, the patient vomited a quantity of bilious fluid mixed with rice. On the second day she was allowed her first nourishment in the shape of 8 c.c. of sherry wine with 30 c.c. of beef tea, given at three hour intervals with a little sodium bicarbonate. The wound healed by first intention, and the stitches were removed in two sittings, on the twelfth and fourteenth days.

An abdominal binder made to fit and button on was applied and directed to be worn for the next eighteen months. The patient made a steady improvement from the third day. The breasts, owing

to the atropine and gentle massage, gave very little discomfort; the secretion being very scanty on the day of discharge. The baby was turned over to a native woman, who volunteered to act as wet nurse. With usual native indifference, she failed to obey orders, and I did not see the infant again. Its death was reported later.

Considering the lack of facilities, the unfavorable surroundings, the gravity of the operation, the unskilled assistants, and the kind of nursing, which although most willing and painstaking, was inexperienced in this class of cases, and especially the woman's natural state of nitrogen starvation and secondary anæmia (which is seen in most women in the archipelago, owing to their exclusive diet of rice and fish), the happy termination of this case seems nothing less than a triumph of modern surgery.

Correspondence.

LETTER FROM LONDON.

Lord Lister's Eightieth Birthday.—The Lancet's Manifesto on Alcohol.—The Lancet's Great Loss.

LONDON, April 13, 1907.

When the sovereign graciously made Joseph Lister a peer of the realm some years ago, the fashionable world asked in supercilious surprise who he was! To them it seemed strange that any one but a politician, whose presence in the House of Commons was inconvenient to his party, or a rich brewer who provided the sinews of war for electioneering campaigns, should be placed among the dignified mummies in the House of Lords. Lister has never taken much part in the political life of the Gilded Chamber, though he once delivered an excellent speech on vaccination. But, though living mostly in retirement in the country, he has continued to take the keenest interest in the progress of science. The form in which it is proposed to commemorate his eightieth birthday—by the publication of all his writings in an *édition de luxe*—is understood to be peculiarly gratifying to him, and it will doubtless be highly satisfactory to students of surgical literature, who have hitherto had to search the journals for the last forty years for the words of the master. The collection will be published by Maclehose, of Glasgow, and, I believe, Lister would be glad to see it issued in large quarto volumes, like Sir Astley Cooper's beautifully printed books on diseases of the breast, etc. The cost of production on so monumental a scale would, however, be very heavy. It was to be expected that the members of his own profession would unite to do him honor, but it is remarkable that the newspapers, which have generally little space to spare for medical matters, have been full of his praise. It is still more noteworthy that they have, on the whole, praised him with intelligence. It would seem, therefore, that even the public has some dim notion that Lister stands on a different plane from the "eminent physicians" and "leading specialists" who are always ready to deliver oracles through the medium of the press. Lister has had the incalculable advantage that he has never experienced the bitter truth of Samuel Johnson's line:

Slow rises worth by poverty depress'd.

He has always had a pule means. His father was a well known man of science and a fellow of the Royal Society, who was able to give him a favorable start in life. Beginning under the wing of James Syme, whose daughter he married, he went from one professorial chair to another—from Glasgow to Edinburgh and from Edinburgh to King's College, London—everywhere borne triumphantly on the shoulders of enthusiastic disciples. It is curious that the only place where he failed to secure a chair was his own *alma mater*, University College, London. That institution preferred the late Mr. John Marshall—an other proof that a prophet is not without honor save in his own country. Of course the older men opposed his doctrine, and, especially when he came to London, he had to encounter a good deal of personal jealousy. It is a disgrace to the Royal College of Surgeons of England that its most distinguished fellow was never elected to the presidential chair. He doubtless found compensations in the greater positions of president of the Royal Society and of the British Association for the Advancement of Science. Lord Lister is of Oaker stock, and, I believe, actually a member of the Society of Friends, and has the characteristic gentleness and simplicity of manner which made Voltaire say he would have liked to spend his life among the spiritual progeny of George Fox. The late W. E. Hill, who was a patient in the Royal Infirmary, Edinburgh (where his acquaintance with Robert Louis Stevenson began), devoted a sonnet to Lister in his series entitled *in Hospital*. It gives so faithful a presentment of the man that a veritable impostor, curiously enough, it seems to have escaped the notice of the newspaper scribes on this side:

III. C. P. D.

His brow spreads large and peaceful, and on here
Is deep and bright with steady looks that still
Soft lines of tranquil thought his face fulfil.
His face at once benign and proud, and stern
If only seen, if seen, one's glory
His faultless patience, his unyielding will,
Beautiful gentleness and splendid skill,
Innumerable gratuities reply.
His wisdom, calm and sweet, with all its charms,
And seeming mild, has power to quell
Such love and faith as failure cannot quell.
We hold him for another Herakles,
Battling with custom, prejudice, disease,
As once the son of Zeus with Death and Hell.

A few weeks ago that eminently staid and respectable journal, the *Lancet*, exploded a bomb-shell in the ranks of the teetotalers, who have been having things very much their own way lately, as far as that very variable quantity, "scientific authority," goes. At Toronto last summer, Sir Victor Horsley, whose intellectual foible is not a lack of confidence in his own beliefs, declared that the therapeutic value of alcohol was nil. This ex cathedra pronouncement, though it scandalized some of his most fervent disciples privately, was reechoed in public, and of course was quoted by temperance "whole hoppers" as the last word of medical science on the subject. The truth is, the profession in this country has for some time been drifting into a false position in regard to alcohol. Instead of being content to preach against the abuse of alcohol, doctors have allowed various self appointed prophets to testify in their name against its use. The worst of it is that the opinions so expressed are not

always strictly honest. Not very long ago a surgical star of the first magnitude spoke wild and whirling words before an assembly of parsons; the utterance was highly edifying to all but those of his friends who knew that he did not himself abstain from the unclean thing. The *Lancet* bomb-shell was in the form of a manifesto on the use of alcoholic beverages, signed by, among other well known men, Sir William Gowers, Mr. Jonathan Hutchinson, Sir Dyce Duckworth, Sir Thomas Fraser (professor of therapeutics in the University of Edinburgh), Sir James Crichton-Browne, Dr. Frederick Roberts, Professor W. D. Halliburton, and Mr. Edmund Owen. The substance of the document has already been set forth in your columns. There is, of course, nothing strikingly novel in these views; but it is not altogether easy to conjecture what it was that suddenly moved these distinguished persons to deliver their testimony on the subject at this particular time. If intended as a counterblast to Horsley, it was rather out of date. Evil minded persons are saying that it is a political move of some kind; others hint that it coincides somewhat significantly with a lavish distribution to doctors of free samples of a special brandy. Whatever may be the true meaning of the manifesto, its signatories already seem to be afraid of the noise they have made. It turns out that the document did not originate within the profession, but was drafted by a barrister interested in social and economic questions. On this ground some of the signatories are trying to shuffle out of their responsibility. Sir William Gowers assures the public that the declaration means nothing but that alcohol may be useful in acute diseases. Mr. Jonathan Hutchinson, on the other hand, explains that he signed because it had been signed by Sir William Gowers, Dr. Pye Smith, and Sir Dyce Duckworth, and he agreed with these eminent physicians that people were beginning to consider alcohol a poison, "which," he added, "it certainly is not." With the profession at large in this country the *clarum et venerabile nomen* of Mr. Hutchinson carries great weight, probably more than that of all the other signatories, and his innumerable admirers must note with dismay the light hearted manner in which he signs what ostensibly is an important expression of professional opinion. It would be funny, if it were not wondrous pitiful, to see men whose names are household words in the world of medicine running away from their own words.

Who but must laugh, if such a man there be?
Who would not weep, if Atticus were he?

It is satisfactory to see that at least two of the signatories, Sir James Crichton-Browne and Professor Halliburton, are made of sterner stuff. Halliburton, who is one of our foremost physiologists, says bluntly that the views set forth in the manifesto are "straightforward common sense." Whatever may be thought of the opportuneness of the publication, it is well that the public should know that the profession is not, as might be gathered from the amazing deliverances of orators intoxicated with the exuberance of their own verbosity, given over to fanaticism on the subject of alcohol.

The *Lancet* has just lost its senior editor by the death of Mr. Thomas Henry Wakley, at the age of

eighty six. He was a son of Thomas Wakley, who founded the *Lancet* and played a great part as a medical reformer in the last century. On his death he was succeeded by his son, James Wakley, generally known as "Jim"; then came his brother, Wakley the Third, who has just passed away. The dynasty is continued by his son, Wakley the Fourth, who was associated with his father in the editorship for twenty years.

Therapeutical Notes.

Treatment of Burns.—Dr. Starling Loving has found the following decidedly useful in the treatment of burns of the first and second class:

R Corn starch, 2 ounces.
Oil of cotton seed, 5 fluidounces.
Spread thick on sterilized surgeons' gauze or cotton batting and apply as a dressing.

Abortive Treatment for Furuncles.—Vikentiev commences by energetically rubbing the furuncle with the tincture of green soap, then washing it with alcohol (40° to 50°). He also applies a thin compress of absorbent cotton moistened with alcohol, which he keeps in place until the alcohol has all evaporated. He then makes another application of the green soap, but allows the lather to dry on the spot, which he then leaves uncovered. Sometimes it is necessary to repeat this manoeuvre after several hours. In order to be successful the treatment should be applied early (*Revue pratique d'obstétrique et de gynécologie*, March, 1907).

Comparison Between Anæsthesia by Chloroform and by Ether.—Maurice Nicloux, in a communication to the Académie des Sciences (*Bulletin général de thérapeutique*, March 30, 1907) from a number of experiments, has formulated the following conclusions: 1. The absolute quantity of ether contained in the blood when anæsthesia by this substance is established is greater than the absolute quantity of chloroform during chloroform anæsthesia. 2. Ether is eliminated more rapidly than chloroform. 3. Ether is divided nearly equally between the globules and the plasma. On the contrary, on account of the elective affinity of the globules for chloroform the globules contain, in absolute quantity, seven or eight times as much chloroform as the plasma.

Tolerance of Carbohydrates by Diabetics.—Marcel Labbe (*Société médicale des hôpitaux, Revue de thérapeutique*, April 1, 1907), from numerous experiments, has found that diabetics tolerate some forms of carbohydrates better than others. He classifies them in the following order, according to their tolerance: (1) Potatoes; (2) oatflour; (3) macaroni; (4) chestnuts; (5) rice; (6) beans; (7) lentils; (8) dried peas; (9) milk; (10) bread; (11) sugars. Diabetics can swallow a larger quantity of potatoes than of bread without causing glycosuria. The potato is therefore the carbohydrate of choice for diabetic patients. Macaroni and vermicella are good, likewise rice and dried vegetables (beans), but bread should be forbidden. The difference is attributed to variations in the chemical composition

and in the intraorganic evolution of divers starches and sugars.

Diabetes of Rheumatic Origin.—Latham distinguished two kinds of saccharin diabetes, one coming from a nervous disorder affecting the hepatic function, and one arising from a nervous disorder affecting the muscular function. The latter form has been described as rheumatic diabetes. In the latter, salicylic acid constitutes the specific treatment. The following combination has been recommended:

R Salicylic acid, 8.0 grammes;
Sodium bicarbonate, 4.0 grammes;
Ammonium carbonate, 4.0 grammes;
Water, 30.0 grammes.
When effervescence ceases add enough water to make 300 grammes.

M. S. Take three tablespoonfuls daily, in orangeade.

Bulletin général de thérapeutique, March 30, 1907.

Quassia in Atonic Dyspepsia.—In the treatment of gastric hyposthenia, the simple bitters, as pointed out by Reichman, stimulate not only the gastric secretions, but also the pancreatic secretion. G. Bardet (*Bulletin général de thérapeutique*, March 30, 1907) places *quassia amara* at the head of the list. The medicinal virtues exist in the wood, which is supplied in the form of shavings or raspings. These are subjected to maceration with water, and the cold infusion is to be taken a quarter of an hour before each meal (10 grammes of quassia to a quart of cold water, of which half a glassful is taken at a dose). Its extreme bitterness is due to a glucoside, *quassine* ($C_{32}H_{42}O_{10}$), which has been isolated by Adrian and Moreau. Quassine is found in commerce in the form of crystalline granules of which the dose in tablets, or pills, is 2 milligrammes (gr. 1-3). Amorphous quassine is also supplied in pills; it is less active and is given in doses of 25 milligrammes (gr. iv), three or four times a day. Administered in granules or in capsules, it has no action upon taste; and on this account it is preferred to the very bitter infusion, but it acts directly as an excitant upon the gastric mucosa. It very notably stimulates the smooth fibres of the stomach and intestine, exercising upon the latter a slight laxative effect. The use of quassia is very old, and it is an excellent remedy in hyposthenic conditions. Where it has failed, it is because it has been thoughtlessly given to subjects of hypersthenia of the stomach, in which it may produce disastrous effects. As a bitter tonic, gentian is inferior to quassia. With regard to alcoholic bitters, which are popular as "aperitifs," they should all be rigorously excluded from the pharmacopœia, because the frequent contact of alcohol with the empty stomach is deplorable in its consequences, especially in persons suffering with gastric insufficiency. If occasionally certain alcoholic preparations are permitted at the table, it should be at the end of the meal, and under the form of cordials. The latter, however, are less esteemed than recent decoctions or infusions (tisanes), made with flowers of wormwood, artemisia; or chamomile, or leaves of mint, balm, or orange, bark of cascarrilla, or bitter orange, such infusions well sweetened and taken hot some hours after a meal exercise a very appreciable stimulating action upon the digestive organs. They render the best service

if administered at the time when the patient commences to feel oppression in the stomach.

Toothache Relieved by Cocaine Introduced Into the Nasal Chambers.—Escat, of Toulouse (*Bulletin de laryngologie et d'odontologie*, January, 1907, through *Le Chirurgical*), having observed that in all the cases in which he applied tampons of cotton, moistened with cocaine solution, to the lower portion of the nasal chambers, there was produced anæsthesia of the incisors and canine teeth on the side of the anesthetized nasal fossa, he subsequently employed this method of relieving pain and of producing anæsthesia of these teeth in more than five hundred cases with notable success. The anæsthesia commences a quarter of an hour after the introduction of the tampon, attains its maximum in about half an hour, and if the tampon be removed at this time, it persists for another quarter of an hour. This dental anæsthesia arising within the nose is obtained by the simple application of a tampon of absorbent cotton, the size of an almond, moistened with a ten per cent. solution of cocaine hydrochloride. This, however, is not to be simply introduced within the nasal chamber, but placed carefully in the anterior portion of the nasal fossa, between the septum and the anterior extremity of the lower turbinate. The patient should bend his head forward during the introduction of the tampon, so as to avoid swallowing a few drops of the solution which may run along the floor of the nasal chamber. He should keep this position for twenty minutes or half an hour. The manner in which this application may act is inferred from the anatomical investigations of M. Ledouble, who found that the anterior dental nerve does not always have a fixed position in a bony canal, but that it is most frequently superficial and immediately subjacent to the pituitary membrane, just at this place where the nerve turns in its course to avoid the nasal fossa, and where it emits the branches destined to supply the incisors and canines. In fifty-five crania examined by Clermont, the bony canal was well formed in twenty-nine instances, but with a thin wall, which was transparent and easily broken down; twenty-seven times the canal was found to be only a groove. Furthermore, the nerve filaments of the mucosa of the hard palate in this region are supplied by the nasopalatine, an ultimate branch of the sphenopalatine nerve, which in order to enter the anterior palatine canal are obliged to spread along the floor of the nasal chamber, and are therefore brought directly in contact with the cocaine. This observation is of interest both to rhinologists and dentists, as it affords a practical means of relieving the pains of pulpitis and gingivitis in this region. It also affords a method of producing local anæsthesia, which may be utilized for extracting the incisors and canines, or for operating for caries, removing nerve pulp, etc. It may have a limited application in facial neuralgia when reflex irritation is produced by caries of these teeth.

Treatment of Leucæmia by the Röntgen Ray.—J. Belot, in a paper entitled *Röntgen Rays and the Affections of the Hæmatopoietic Organs*, read at the Lyon Medical Congress (*La Tribune médicale*, August 11, 1906), expressed his conviction that "a physician who deprives a leucæmic patient of this method of treatment commits as grave a fault

as one who should neglect to give mercury to a syphilitic." It was in 1903 that Senn, of Chicago, published the first clinical report of a leucæmic patient, whose condition had been very greatly ameliorated by radiotherapy. Experiments made by Heineke, of Leipzig, have recently thrown light upon the action of the Röntgen rays on hæmatopoietic organs. As stated by Bectère, "the lymphocytes, profoundly hidden in the interior of the visceral organs, when confronted by the Röntgen rays, show themselves to be much more sensitive to this agent than the cellular elements of the skin; the reaction being more rapid, since the period of latency, which is so characteristic of radiodermatitis, is here suppressed." Of all the affections of the hæmatopoietic organs, declares Belot, the most favorably influenced by Röntgen rays is chronic leucæmia. Without being absolutely identical, the results obtained in myeloid and in lymphatic leucæmia are of the same order. The modifications produced occur simultaneously in the blood, the spleen, in adenopathies when they exist, and their influence is shown upon the general condition. The action upon the blood is very striking: Under the influence of a well directed treatment the white globules progressively are reduced to the normal. The number of polynuclears gradually surpasses that of the pathological forms. In myelogenic leucæmia the effect is most intense on the myelocytes; and in lymphoid leucæmia, on the lymphocytes. At the same time that the white globules are decreased, the red are increased, as had been observed by Senn. The increase in number is accompanied by increase in hæmoglobin, and also in their specific gravity. The greatly enlarged spleen is reduced to the normal by radiotherapy. "It is frequently seen that a spleen filling one half of the abdomen, from the diaphragm to the pubes and Poupart's ligament, and going 10 to 12 cm. beyond the umbilicus, will resume an almost normal volume in the space of three months." Lymphatic gland tumors are also promptly reduced. As regards the general condition, one of the most curious effects of radiotherapy is the suppression of fever when it exists. It is the same with night-sweats, and the state of apathy and of anorexia. Within ten to fifteen days from the commencement of treatment, the most cachectic leucæmics show a better color, their appetite improves, dyspnœa becomes less, pains disappear, sleep becomes possible, and strength returns. Albuminuria, when it exists, disappears quite rapidly. CEdema lasts longer, but finally also disappears, as the hypertrophied organs become normal. The increase of appetite is accompanied by increase in weight. It may be said that the Röntgen rays constitute a specific treatment for cases of leucæmia; the myeloid variety being more amenable to this treatment than the lymphoid. In pseudoleucæmia, the results are variable. In splenomegaly and anæmia there is little or no action. In polyadenitis the results are very diverse and incomplete. Those with lymphoma appear to be most favorably influenced. Recent cases are more amenable to treatment than older ones. In conclusion, he recommends a routine examination of the blood of all patients, just as the urine is examined, so that leucæmics can be subjected to radiotherapy at the very beginning of their affection.

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THE PUBLICATIONS OF THE BUREAU OF
ANIMAL INDUSTRY.

The Bureau of Animal Industry of the United States Department of Agriculture was established nearly twenty-five years ago. The first annual report issued by the bureau was for the year 1884, and reports for each year since that have been published. In addition, many pamphlets and circulars relating to special subjects have been circulated. We have found a large proportion of these publications interesting from the medical point of view—some of them indeed of great scientific value and having a direct bearing upon practical medicine.

The department now issues a monthly list of its publications, containing information as to how they may be obtained. This list is sent regularly without charge to anybody who applies for it. Besides that, the bureau has published a circular (No. 106, dated April 15, 1907) giving a complete list of its annual reports (with tables of contents), bulletins, and circulars up to April 1, 1907. Though this list is exclusive of reprints and certain miscellaneous publications, it is believed by the chief of the bureau that it includes the titles of all the publications "of any general interest or importance at the present time."

The bureau is liberal in distributing its publications, though small prices are put upon a few of them. It is generous, too, in the matter of postage, no postage being charged on documents sent to any

point in the United States, Guam, Hawaii, the Philippine Islands, Puerto Rico, Canada, Cuba, or Mexico. There is a uniform rate of six cents for each article sent to "residents of foreign countries," except, we suppose, Canada, Cuba, and Mexico. Some of the publications listed are out of print, but it was well to give their titles in the list, for, if they cannot now be obtained, they may at least be consulted in almost any one of the large public libraries. If a document is out of print, it is so entered on the list.

Important as the "animal industry" is to the farmer, it is none the less so to the entire community, and at many points it touches medical problems closely. The rearing of cattle, sheep, hogs, and poultry for the market involves the care of their health, and the connection between the health of our domestic animals and our own is constantly meeting with more and more general recognition and demanding increased attention on the part of sanitarians and investigators; and we are all coming to realize the vast importance of the conditions under which milk and its derivatives are furnished for human consumption. The Bureau of Animal Industry has been active in the investigation of such matters and has provided us with much of our present knowledge concerning them. Its conduct has been in the highest degree creditable, and its publications are extremely valuable.

A NOTABLE PRIZE ÉSSAY.

We have before mentioned Dr. S. A. Knopf's prize essay on tuberculous disease, but the recent appearance of a fourth edition (New York, 1907) makes it only due to the distinguished author that we should call attention anew to the extraordinary degree to which he has impressed the medical profession and the world. It may well be a matter of pride with us that this New York physician has met with such great success in enlisting general sympathy in the campaign against consumption. The prize was awarded by the International Congress to Combat Tuberculosis as a Disease of the Masses, which held its session in Berlin in May, 1899.

Dr. Knopf's masterly essay was written in German, and has been translated (by himself) into English (with an edition, by Dr. J. M. Barbour, adapted to British use), Arabic, Portuguese, Bulgarian, Dutch, Finnish, French, Hebrew, Hungarian, Icelandic, Italian (two translations), Japanese, Spanish (with an additional translation for Mexico), Polish, Russian (two translations), Servian, Swedish, and Turkish. If there are any other medical essays that have met with such widespread appreciation in re-

cent years, we have yet to hear of them. Dr. Knopf had something tangible to say, and he said it in plain and simple words. He dealt with the problems of tuberculous disease from the common sense point of view. Those, as it seems to us, are the reasons why his essay has been so universally acclaimed.

Dr. Knopf—and this is to the highest degree to his credit—has not been content to enjoy the honors brought to him by his prize essay; he has continually bestirred himself in the interest of the consumptive by addresses, journal articles, and personal work. We shall shortly publish an important article of his, and we hope that it may be our privilege to bring out many more, for he is the veritable hero of the antitubercle campaign.

THE BIOLOGY OF DIPLOCOCCUS INTRACELLULARIS.

During the epidemic of cerebrospinal meningitis which occurred in New York in 1904-'05 4,000 cases were reported, with 3,429 deaths, a mortality of about 85.72 per cent. Early in 1905, the Department of Health of New York appointed a commission, consisting of Dr. W. J. Elser, Dr. E. K. Dunham, Dr. J. M. Van Cott, Jr., and Dr. Simon Flexner, to investigate the disease. Dr. Flexner (*Journal of Experimental Medicine*, ix, 2) contributes three papers as a result of his investigations in the etiology and pathogenesis of the disease.

The difficulties of cultivating the *Diplococcus intracellularis* were greatly reduced by the use of sheep serum in the preparation of the culture media, as suggested by Dr. W. H. Park, instead of human serum. It is well known that unless *Diplococcus intracellularis* is repeatedly transplanted to fresh media it does not survive beyond two or three days. Cultures three days old show marked degeneration, and this increases rapidly with age, until at the end of five or six days no normal cocci persist. The rapidity with which the diplococcus can be made to undergo dissolution allows of the ready production of the soluble disintegration products. These products account, in a measure, for the brief vitality of the cultures, but the exhaustion of the nutrient material in the medium of growth contributes to the phenomenon.

Cold is injurious to the cocci and destroys them in a weak more quickly than in a more highly concentrated suspension. Salt solution is also inimical to the growth of the organism, but the death of the diplococcus in salt solution (0.85 per cent.) is not due to the hypertonicity of the medium alone, to starvation alone, to degree of concentration alone, or to a naturally brief period of vitality alone. The

addition of a salt of calcium to an otherwise neutral culture greatly increases the period of vitality of the diplococcus grown upon it; and these salts, as well as potassium salts, are able to neutralize, to a certain extent, the toxic effects of sodium chloride upon the organism. The agency which causes the disintegration of the dead microorganisms is probably enzymotic, and the enzyme is probably contained in the bacterial cells. Potassium cyanide, on the other hand, possesses the power of preventing or diminishing the autolysis of the dead diplococci. It may be that other chemical agents possess this power. The autolytic enzyme in the case of *Diplococcus intracellularis* is capable of causing disintegration of a variety of bacteria, such as *Staphylococcus aureus*, *Bacillus anthracis*, and *Bacillus pyocyaneus*. As these organisms are known to produce a proteolytic enzyme, the fact indicates that there is a difference in the action of the two enzymes. Heat above 158° F. reduces the power of the autolytic enzyme to disintegrate certain bacteria.

Diplococcus intracellularis is a microorganism of low and variable pathogenic action. One of the earliest visible results of inoculations in guinea pigs is a marked reduction in the temperature of the animal. The irritative effects of the inoculation upon the intestine are sometimes associated with prolapse of the rectum and death. The death of the animals is probably due to the action of a poison liberated from the bacterial bodies, perhaps through disintegration, and not to a secreted extracellular poison. Multiplication of the organism is not at all essential to the production of the peculiar symptoms and lesions.

EXPERIMENTAL CEREBROSPINAL MENINGITIS IN MONKEYS.

The use of monkeys for the purpose of attempting to reproduce cerebrospinal meningitis as seen in man was adopted by Flexner (*Journal of Experimental Medicine*, ix, 2) in the study of the *Diplococcus intracellularis*. A number of monkeys of the genera *Macacus* and *Cebus* were infected by the subarachnoid injection of pure cultures of *Diplococcus intracellularis*. The injection was followed by the development of the symptoms present in man in cases of cerebrospinal meningitis.

When introduced into a low level of the spinal canal, the organisms distribute themselves in a few hours through the meninges and set up an acute inflammatory reaction, the exudate from which accumulates chiefly in the lower portion of the subarachnoid space of the spinal cord and in the subarachnoid space at the base of the brain. This distribution of the exudate leads the author to doubt

the validity of the theory of the entrance of the *Diplococcus intracellularis* in man from the nasal mucous membrane. Both in the experimental lesions in monkeys and in the natural lesions in man encephalitis, abscesses, hæmorrhages, proliferation of large cells of the connective tissue and of the tissue spaces, acute endarteritis, inflammation of the dorsal root ganglia, internal hydrocephalus, a relatively small amount of fibrin in the exudates, fibrinous and other thrombi, and phagocytosis of diplococci and somatic cells occur.

In monkeys the inflammation of the meninges extends to the membranes covering the olfactory lobes and along the dura mater, through the cribriform plate of the ethmoid, to the nasal mucosa. The latter, in many instances, is found to be inflamed and studded with hæmorrhages. Smears from the nasal mucous membrane showed polymorphonuclear leucocytes carrying diplococci which presented the form, size, staining qualities, and degenerations of the diplococci occurring in the same cases in the cerebral and spinal meninges. *Diplococcus intracellularis* has not been cultivated, however, from the nose of the infected monkeys. On the other hand, other Gram negative diplococci have been obtained.

There is no real correspondence in the relative degree of susceptibility of man and monkeys to *Diplococcus intracellularis*. The quantity of an active culture necessary to cause marked symptoms or to produce death from meningitis in monkeys is prodigious when compared with the number of organisms which are probably sufficient to produce infection in human beings. Furthermore, the amount of multiplication of the diplococcus in monkeys, with the possible exception of the focal abscesses, is small under the most favorable conditions. Indeed, Flexner is not disinclined to believe that no multiplication whatever takes place. The experiments on monkeys are an argument for the causative action of *Diplococcus intracellularis* in epidemic meningitis.

THE BROWN TAIL MOTH.

The coddling moth and the gypsy moth are not the least of the afflictions in the insect line of our neighbors in the State of Massachusetts. Of late years, their sorrows have been added to by the sharp sting of the brown tail moth, by whose microscopic hairs widespread and unpleasant dermatitis may be set up. This pest has before been made the subject of professional comment, as in 1903 Fernald and Kirkland laid bare part of its infamies in the report of the State Board of Agriculture to the legislature. In a recent communication (*Journal of Medical Research*, March, 1907), Dr. E. E. Tyzzer, of the Pathological Department of Harvard Univer-

sity, has penetrated deeper into the mysteries of brown tail moth dermatitis, and brought out some interesting details as to the capabilities of the *Portesia chrysorrhæa* in the itch line.

As to the itch itself, two general types are recognized by laymen as well as by the trained observer. When one crushes a creepy, crawling caterpillar of this species *in situ*, be it on the back of the neck or some other exposed situation, the part being well rubbed and scratched afterward, a decided local dermatitis develops, with confluent lesions. There are local reddening and thickening of the skin, with the formation of vesicles or papules. If, however, one is exposed only in a general way, even if one's clothing is blown upon by a Back Bay zephyr coming from a convenient feeding ground of the brown tail, the wearing of such garments will give rise to a generalized urticarial rash. The lesions are in the nature of small discrete papules which, if not scratched, often show a tiny apex filled with a clear serum. Murky weather aggravates the condition, and the months of May and June are to be dreaded. The dermatitis persists for from ten days to two weeks, if no reinoculations take place.

Tyzzer has shown that Fernald and Kirkland were correct, in part at least, in attributing the dermatitis to a small variety of hairs of the caterpillar, named by these investigators the *nettling hairs*, but he believes that he has found that another element is required. The nettling hairs are microscopic reproductions of the African Indian spears. They penetrate deep into the corium, giving rise to a necrosis of the epidermis about the point of hair where the vesicle has its origin. Tyzzer observed that these hairs, when suspended in an alkaline methylene blue solution, took up the color on the inside, apparently from the pointed end, and, although the microscope was unavailing in showing an opening at this point, he drew the inference that a minute opening led into a hollow shaft.

A peculiar blood reaction was noted by him when these hairs were brought into contact with red cells: they caused a distinct and spiny form of crenation, and he further noted that heating the hairs to a temperature of 239° F. caused the disappearance of the reaction. He infers that there is therefore some offending chemical substance resident either on the inside or on the outside of the hair near the point. This is a soluble substance, destroyed by the heat and by some chemicals, but its composition, although studied by C. H. Alsberg, of the Biochemical Laboratory, is as yet unknown. The coming of the caterpillar of the brown tail moth, soon due, will be welcomed by a few at least, as with more material the author promises us further light on the nature of this chemical irritant.

Obituary.

ALBERT RITTER VON MOSETIG-MOORHOF,
M. D.

Professor Mosetig died in Vienna on April 22d. Born at Trieste, January 26, 1838, he studied medicine at the University of Vienna, and was graduated in 1861. Five years later he was admitted as Privat Dozent of surgery to the medical faculty of his alma mater, and became assistant professor in 1875. In 1880 he introduced iodoform (discovered in 1822 by Serullas) into surgery, and wrote among other essays: *Der Jodoformverband in Volkmann's Sammlung klinischer Vorträge*, No. 224, also *Handbuch der chirurgischen Technik*, Vienna, 1886, and *Vorlesungen über Kriegschirurgie*, Vienna, 1887.

ALFRED J. YOST, M. D.

OF ALLENTOWN, PA.

Dr. Yost died at his home, in Allentown, on April 16th, of pulmonary tuberculosis, in the thirty-seventh year of his age. He was graduated from Muhlenberg College and from the Medical Department of the University of Pennsylvania; from the latter institution in the class of 1893. Almost from the time of his graduation he had been active in politics. He was elected coroner of Lehigh County in 1895, and was reelected in 1898. In 1905 he was elected mayor of Allentown, and held the office at the time of his death.

News Items.

Personal.—The honorary degree of LL. D. has been conferred upon Dr. Joseph Decatur Bryant, by the corporation of New York University.

The Centennial of the Birth of Agassiz.—On May 28, 1907, Professor Burt G. Wilder, of Cornell University, will give a memorial address in commemoration of the one hundredth anniversary of the birth of Louis Agassiz.

Pennsylvania Antivivisection Bill Dropped from the Calendar.—The House of Representatives of the State of Pennsylvania dropped the bill to prohibit vivisection from its calendar on April 25th, after an address by Dr. S. Weir Mitchell, of Philadelphia.

A Consolidated Medical Examining Board is created for the State of New York by the Senate Public Health Commission Bill, which consolidates into one board the present three examining boards representing the regular, the homeopathic, and the eclectic professions.

Philadelphia Municipal Hospital Census:

	Remaining last report	Received	Dis- charged	Re- maining
Diphtheria	191	131	141	79
Scarlet fever	121	76	67	122
Other diseases	2	23	4	13

Laboratory for Food and Drug Analysis.—The trustees of the Philadelphia College of Pharmacy have decided to erect and equip a laboratory for the analysis of food and drug products. It is hoped to have the laboratory ready for occupancy by October.

The German Society for Combating Venereal Diseases.—The third congress of this society will be held at Mannheim on Friday and Saturday, May 24 and 25, 1907. The committee of arrangements consists of Bassermann, M. P., chairman; Dr. H. Loeb, secretary; and Friedrich Hoffstatter, treasurer.

The Medical Association of Georgia.—At the annual meeting of this association, held at Savannah, on April 17-20, 1907, the election of officers resulted as follows: President, Dr. M. A. Clark, of Macon; vice-presidents, Dr. Ralph M. Thomson, of Savannah, and Dr. E. E. Murphey,

The Berkshire District, Massachusetts, Medical Society.

The Elmira, N. Y., Academy of Medicine.—The following were held on Wednesday evening, May 1st: Congenital Hernia of the Cord, by Dr. Ross G. Loop; Some Surgical Incidents, by Dr. Charles L. Squires; Placenta Previa, by Dr. Anna M. Stuart; Treatment in Diseases of the Heart, by Dr. Floyd E. Woodhouse, all of Elmira.

The Medical Association of the State of Alabama.—At the annual meeting of this association, held at Mobile on April 16, 1907, the election of officers resulted as follows: President, Dr. Samuel W. Weleh, of Talladega; vice-presidents, Dr. Andrew J. Coley, of Alexander City, and Dr. Henderson, of Troy; orator, Dr. W. P. McAdory, of Birmingham; secretary, Dr. J. Norment Baker, of Montgomery; treasurer, Dr. H. G. Perry, of Greensboro; State health officer, Dr. W. H. Sanders, of Alabama.

The West Virginia State Medical Association will hold its annual meeting at Huntington, on May 15th-17th. The programme prepared for the occasion includes a public address by Dr. J. N. McCormack, of Bowling Green, Ky., and an address on The Physician and the People, by Dr. Fleming Howell, of Clarksburg. The officers of the association for this year are: President, Dr. William W. Golden, of Elkins; vice-president, Dr. T. E. Churchman, of Charleston; secretary, Dr. T. W. Moore, of Huntington; treasurer, Dr. J. H. Patton, of Charleston.

The Clinical Society of the New York Throat, Nose, and Lung Hospital is the name by which a newly organized society is to be known. Members and ex-members of the hospital staff are eligible for membership. The officers for the current year are: President, Dr. C. A. Miller; vice-president, Dr. S. Goldstein; secretary, Dr. Charles F. Walter; treasurer, Dr. M. C. Tracy. At a meeting of the society, held at the hospital, on Wednesday, May 1st, the programme embraced the presentation of patients, specimens, and instruments, and the reading of a paper on Tinnitus Aurium, by Dr. C. F. Walter.

The Mortality of Boston.—The number of deaths reported to the Board of Health for the week ending April 27th was 257, as against 225 the corresponding week last year, showing an increase of 32 deaths, and making the death rate for the week 22.26. The number of cases and deaths from infectious diseases was as follows: Diphtheria, 50 cases, 9 deaths; scarlatina, 36 cases, no deaths; typhoid fever, 6 cases, 1 death; measles, 22 cases, no deaths; tuberculosis, 46 cases, 27 deaths; smallpox, no cases, no deaths. The deaths from pneumonia were 33; whooping cough, none; heart disease, 27; bronchitis, 9; and marasmus, 1. There were 12 deaths from violent causes. The number of children who died under one year of age was 42; under five years of age, 63; the number of persons over sixty years of age, 57; deaths in public institutions, 78.

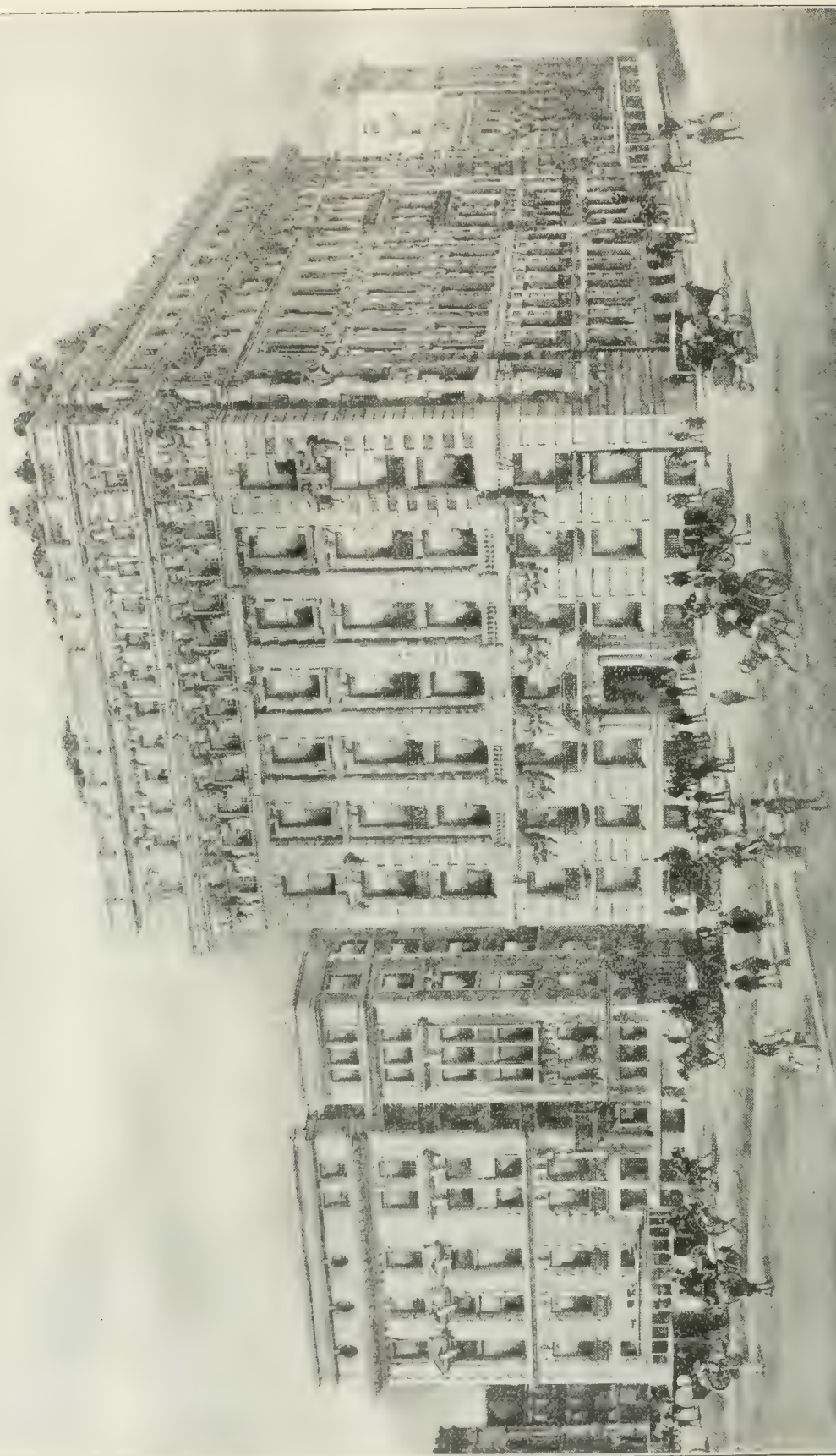
Philadelphia Personals.—Dr. John H. Gibbon has been elected professor of surgery and of clinical surgery in the Jefferson Medical College. This is the chair of surgery formerly occupied by the late Professor John H. Brinton.

Dr. John B. Deaver has been appointed consulting surgeon to the Philadelphia Hospital. The position was made vacant by the death of Dr. John H. Brinton.

Dr. Theodore H. Weisenberg has been appointed Consultant Neurologist to the Philadelphia General Hospital, vice Dr. William Pickett, deceased. Dr. Weisenberg has also been elected Clinical Professor of Nervous and Mental Diseases in the Medicochirurgical College of Philadelphia.

Dr. Dorsey W. Lewis, of Middletown, Del.; Dr. George L. McKee, of Burgettstown, Pa.; and Dr. H. M. Patton, of Montreal, Can., are registered at the Philadelphia Polyclinic and College of Graduates in Medicine.

Scientific Society Meetings in Philadelphia for the Week Ending May 11, 1907.—Monday, May 6th, Philadelphia Academy of Surgery; Biological and Microscopical Section, Academy of Natural Sciences; West Philadelphia Medical Association; Northwestern Medical Society. Tuesday, May 7th, Academy of Natural Sciences. Wednesday,



THE OLD JEFFERSON COLLEGE HOSPITAL

THE NEW JEFFERSON MEDICAL COLLEGE HOSPITAL

THE JEFFERSON COLLEGE LABORATORIES

THE NEW JEFFERSON MEDICAL COLLEGE

day, May 8th, Philadelphia County Medical Society. *Monday, May 7th*, Exhibition Meeting, Philadelphia Pathological Society; Section Meeting, Franklin Institute. *Friday, May 10th*, Scientific Sessions of the Fiftieth Anniversary of the Founding of the Pathological Society of Philadelphia, 10 a. m. and 4 p. m.; Exhibition Meeting of the Philadelphia Pathological Society continues; West Branch, Philadelphia County Medical Society. *Saturday, May 11th*, Continuation of the Exhibition Meeting, Philadelphia Pathological Society.

Philadelphia Neurological Society.—At the regular monthly meeting of this society, held on Tuesday evening, April 23rd, Dr. J. H. W. Rhein showed sections of the spinal cord of dogs exhibiting experimental degeneration of the nerve cells. Dr. J. P. Mulrennan reported a case of stab wound of the neck. Dr. James Hendrie Lloyd reported a case of paralysis of the lower extremities following a gynecological operation. Dr. C. E. Camp reported a case of postdiphtheritic multiple neuritis with vesical involvement. Dr. T. H. Weisenburg reported a case of herpetic inflammation of the cervical and thoracic nerves. Dr. Alfred Gordon read a paper on Abnormal Response to an Irritation of the Motor Area of the Brain. Messrs. R. H. Ivy and L. W. Johnson read a paper on Retention of the Sensation of Pressure in the Face After Destruction of the Trigeminal Nerve.

Philadelphia County Medical Society.—At the regular semi-monthly meeting of this society, held on Wednesday evening, April 24th, Dr. T. H. Evans read a paper on the Status of the Question of Sugar in Cases of Cancer. Dr. James E. Talley reported a case of Intermittent Claudication. Dr. Walter S. Cornell read a paper on Eyestrain in School Children, Based Upon a Routine Study of One Thousand Cases. Dr. E. J. G. Beardsley reported three cases of splenomedullary leucemia, with blood findings. At the regular quarterly business meeting, held on Wednesday evening, April 17th, a proposition to amend the by-laws so as to make active members "graduates of a medical school of at least one year's standing and not practicing sectarian medicine," instead of "graduates of a regular medical school," was postponed until the business meeting in October. In the meantime a canvass of the members of the society will be taken in order to determine their attitude toward the proposed change.

The Harlem and the Fordham Hospitals.—On Tuesday, April 30th, these institutions moved into their new quarters. The new Harlem Hospital occupies nearly a half city block on Lenox Avenue, between 136th and 137th streets. Beside the main building, which is a five-story brick and stone structure, there are separate buildings for the ambulance station and power house. The main building is T shaped and fronts on 136th Street. Space has been left so that in future years wings may be added. The new Fordham Hospital's main building, which also is only part of a system of contemplated structures, is five stories in height and built of stone and brick. To the rear of the main building are the ambulance stables, laundries and servants' quarters. Beside it to the west is a large four-story stone and brick building to be devoted to nurses. The buildings are at the Southern Boulevard and Crotona Avenue. The present Fordham and Harlem hospitals have 50 beds each, while the new institutions will be able to care for 150 patients each.

The New Jefferson Medical College Hospital.—In connection with the meeting of the American Medical Association in Atlantic City, on June 4th to 7th, the medical profession in Philadelphia purposes providing a number of entertainments for the members of the association who will necessarily have to pass through that city on their way to the shore. Among these entertainments will be those connected with the opening of the new Jefferson Medical College Hospital, which has just been completed, at a cost of \$1,500,000. On Saturday, June 1st, the alumni dinner of the Jefferson College will be held, and to this all Jefferson graduates are cordially invited. On Monday, June 3rd, the commencement exercises of the Jefferson College will take place at the American Academy of Music, and, in addition to the degrees in course, which will be conferred upon members of the graduating class, a number of honorary degrees will be conferred upon distinguished members of the medical profession. To these exercises, which are held at noon, all members of the American Medical Association are also cordially invited. On Friday, June 7th, at 3 o'clock, the exercises in connection with the opening of

the new hospital will take place, this date being chosen in order that members of the association may have an opportunity on their way back from Atlantic City to inspect the new building. At these exercises addresses will be delivered by the Honorable William Potter, ex-minister to Italy, representing the board of trustees; by Dr. William H. Welch, of Johns Hopkins University, Baltimore, representing the science of medicine; and by Dr. J. Chalmers Da Costa, representing the faculty and the alumni. After the addresses the building will be thrown open for inspection and a collation will be served. Members of the association are cordially invited to attend all these functions. A formal invitation will be forwarded if a note of acceptance is sent to the chairman of the committee of arrangements, Dr. H. A. Hare, 1801 Spruce Street, Philadelphia. The new hospital not only is equipped with all the modern appliances for taking care of the sick in every department of medicine and surgery, but has also been constructed with the dominant idea that it is a teaching hospital, and every facility is therefore provided for the adequate instruction of students. A picture of the new institution is printed on the opposite page.

Meetings of State Medical Societies for the Month of May, 1907:

The State Medical Association of Texas, annual meeting at Mineral Wells, May 7th.

Utah State Medical Society, annual meeting at Salt Lake City, May 7th and 8th.

The Nebraska State Medical Association, annual meeting at Omaha, May 7th to 9th.

New Mexico Medical Society, annual meeting at Las Cruces, May 8th and 9th.

The Kansas Medical Society, annual meeting at Kansas City, May 8th to 10th.

Louisiana State Medical Society, annual meeting at New Orleans, May 14th to 16th.

North Dakota State Medical Association, annual meeting at Minot, May 14th and 15th.

Oklahoma State Medical Association, annual meeting at Shawnee, May 14th and 15th.

Missouri State Medical Association, annual meeting at Jefferson City, May 14th to 16th.

Arkansas Medical Society, annual meeting at Little Rock, May 15th to 17th.

Iowa State Medical Society, annual meeting at Cedar Rapids, May 15th to 17th.

West Virginia State Medical Association, annual meeting at Huntington, May 15th to 17th.

Michigan State Medical Association, annual meeting at Saginaw, May 15th and 16th.

Montana State Medical Association, annual meeting at Billings, May 15th and 16th.

New Hampshire Medical Society, annual meeting at Concord, May 16th and 17th.

Illinois State Medical Society, annual meeting at Rockford, May 21st to 23rd.

Connecticut Medical Society, annual meeting at Hartford, May 22nd and 23rd.

Medical Society of the State of North Carolina, annual meeting at Morehead City, May 28th to 30th.

Indiana State Medical Association, annual meeting at Indianapolis, May 28th to 30th.

South Dakota Medical Association, annual meeting at Sioux Falls, May 28th to 30th.

Ontario Medical Association, annual meeting at Toronto May 28th to 30th.

The New York Academy of Medicine.—The following programme was prepared for a meeting of this academy, held on Thursday evening, May 2nd: Report of the Work of the Surgical Research Laboratory of Columbia University, 1906-1907; Presentation of specimens, by Dr. R. M. Brown; demonstration of instruments, by Dr. N. B. Leggett. Papers: (a) Artificial Cæca, a Study of Experimental Work and a Report of a Case, by Dr. Joseph A. Blake and Dr. R. M. Brown; discussion by Dr. Lilienthal; (b) Tetany Parathyreopriva, by Dr. E. H. Pool; discussion by Dr. Beebe, Dr. S. E. Jelliffe, Dr. J. A. Booth, Dr. C. H. Peck; (c) Experimental Studies in Rectal Anæsthesia, with Report of Cases, by Dr. N. B. Leggett; discussion by Dr. J. A. Wyeth; (d) Experimental Studies Upon the Functions of the Pylorus After Gastroenterostomy Has Been Performed, by Dr. N. B. Leggett and Dr. J. W. Draper Maury; discussion by Dr. John Rogers, Dr. Brewer, Dr. Adrian Lambert, Dr. Hotchkiss, and Dr. Flint; (e) Ex-

perimental Studies in Antiperistalsis, by Dr. Edwin Beer; (d) Experimental Studies in the Pathology of the Biliary and Pancreatic and Duodenal Secretions to Death Caused by Intestinal Obstruction, by Dr. J. W. Draper Maury; discussion by Dr. J. W. Draper Maury; (e) Experimental Studies in Intra-abdominal Infection, by Dr. N. W. Green and Dr. J. W. Draper Maury; discussion by Dr. Walton Martin; (f) Experimental Studies on the Relation of the Biliary and Pancreatic and Duodenal Secretions to Death Caused by Intestinal Obstruction, by Dr. J. W. Draper Maury; discussion by Dr. Opie, Dr. Herter, Dr. Blake, Dr. Horst, Dr. Oertel.

The Section in Pediatrics will hold a meeting on Tuesday evening, May 7th, with the order as follows: Presentation of cases previously shown; presentation of new cases; discussion. There will be no meeting of the section in June, July, August, or September.

The Section in Pediatrics will present the following programme at a meeting to be held on Thursday evening, May 9th: Presentation of patients; reports of cases; Paper: The Indications for and Against Removing Adenoids and Method of Operating, by Dr. S. W. Thurber; discussion: (a) The Standpoint of the Paediatricist, by Dr. Charles Gilmore Kerley, Dr. George M. Swift, and Dr. B. van D. Hedges, Plainfield, N. J.; (b) Certain Ocular Symptoms Relative to Adenoids, by Dr. Charles H. May; (c) Relation of Adenoids to Diseases of the Lungs, by Dr. David Bovaird, Jr.; (d) The Question of Adenectomy During Middle Ear Disease, by Dr. Philip D. Kerison and Dr. Walter E. Spicer; (e) Dangers of the Operation, by Dr. John J. McCoy; (f) Adenoids in Epilepsy, by Dr. E. Livingston Hunt; (g) Improvement in Intellectual Capacity of the Feeble Minded Following Adenectomy, by Dr. William Sohler Bryant; (h) Adenectomy From the Standpoint of the Neurologist, by Dr. Edwin G. Zabriskie; (j) Moral and Intellectual Improvement in Public School Children of New York City as a Result of Adenectomy, by Dr. John J. Cronin.

The Section in Neurology and Psychiatry will hold a meeting on Monday evening, May 13th, with the following order: Presentation of patients: Case of Spasmodic Torticollis, by Dr. William R. Broughton; Papers: Mental Symptoms of Hysteria, by Dr. Allen Ross Diefendorf; The Early Manifestations of Paranoia, by Dr. Albert Warren Ferris; executive session.

Society Meetings for the Coming Week:

MONDAY, May 6th.—German Medical Society, New York; Utica, N. Y., Medical Library Association; Practitioners' Club, Newark, N. J.; Niagara Falls, N. Y., Academy of Medicine.

TUESDAY, May 7th.—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Buffalo Academy of Medicine (Section in Surgery); Medical Association of Troy and Vicinity; Long Island, N. Y., Medical Society; Hornellsville, N. Y., Medical and Surgical Association; Hudson, N. J., County Medical Society (Jersey City); Syracuse, N. Y., Academy of Medicine; Ogdensburg, N. Y., Medical Association.

WEDNESDAY, May 8th.—Medical Society of the Borough of the Bronx, New York; Alumni Association of City (Charity) Hospital, New York; Brooklyn Medical and Pharmaceutical Association; Medical Society of the County of Richmond, N. Y.; New York Pathological Society; New York Surgical Society.

THURSDAY, May 9th.—New York Academy of Medicine (Sections in Pediatrics and Otolaryngology); Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; Jenkins Medical Association, Yonkers, N. Y.; Blackwell Medical Society of Rochester, N. Y.

FRIDAY, May 10th.—New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York; Saratoga Springs, N. Y., Medical

The Mortality of Baltimore.—The report of the Health Department for the week ending April 27, 1907, showed a total of 219 deaths, as compared with 190 the corresponding week of last year, 212 in 1905, and 202 in 1904. The annual death rate in a thousand of population was: Whole, 19.24; white, 16.75; colored, 32.36. The principal causes of death were:

1. Tuberculosis	15
2. Pneumonia	14
3. Enteric fever	13
4. Typhoid fever	12
5. Measles	11
6. Whooping cough	10
7. Diphtheria	9
8. Scarlet fever	8
9. Cholera	7
10. Typhus	6
11. Smallpox	5
12. Mumps	4
13. Syphilis	3
14. Gonorrhea	2
15. Erysipelas	1
16. Tetanus	1
17. Rabies	1
18. Unnatural causes	1
19. Unknown causes	1
20. All causes	219

1. Tuberculosis	2
2. Pneumonia	31
3. Enteric fever	16
4. Typhoid fever	6
5. Measles	21
6. Whooping cough	9
7. Diphtheria	1
8. Scarlet fever	1
9. Cholera	1
10. Typhus	1
11. Smallpox	1
12. Mumps	1
13. Syphilis	1
14. Gonorrhea	1
15. Erysipelas	1
16. Tetanus	1
17. Rabies	1
18. Unnatural causes	1
19. Unknown causes	1
20. All causes	11

The following number of cases of infectious diseases were reported, as compared with the corresponding week of last year:

	1906.	1907.		1906.	1907.
Smallpox	3	0	Mumps	3	47
Diphtheria	23	18	Whooping cough	8	1
Scarlet fever	13	1	Chickenpox	7	6
Typhoid fever	20	5	Consumption	11	17
Measles	12	100			

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending April 27, 1907:

	—April 27—		—April 20—	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	100	18	100	13
Scarlet fever	1	1	2	1
Smallpox	96	64	64	1
Measles	477	17	413	8
Whooping cough	534	26	478	27
Diphtheria	60	11	66	11
Cholera	339	30	334	40
Tuberculosis pulmonaryis	407	227	401	210
Cerebrospinal meningitis	20	17	15	20
Totals	2,034	356	1,866	329

The Health of Philadelphia.—During the week ending April 20, 1907, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Typhoid fever	113	21
Scarlet fever	47	1
Chickenpox	31	1
Diphtheria	89	14
Cerebrospinal meningitis	36	8
Measles	63	4
Whooping cough	29	6
Tuberculosis of the lungs	61	87
Pharyngitis	55	13
Syphilis	12	3
Cholera	9	20
Mumps	3	1
Scarletina	1	1
Anthrax	1	1
Tetanus	2	1
German measles	1	1

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 11; diarrhoea and enteritis, under two years of age, 24. The total deaths numbered 605, in an estimated population of 1,500,505, corresponding to an annual death rate of 20.81 in a thousand population. The total infant mortality was 134; under one year of age, 104; between one and two years of age, 30. There were 32 still births, 23 males and 9 females. The temperatures were seasonable. The total precipitation was 0.23 inch.

Statement of Mortality of Chicago for the Week Ending April 20, 1907, compared with the preceding week, and with the corresponding week of 1906. Death rates computed on United States Census Bureau's figures of midyear populations—2,107,620 for 1907, 2,049,185 for 1906:

	April 20, 1907.	April 13, 1907.	April 21, 1906.
Total deaths, all causes	617	717	645
Annual death rate in 1,000	15.26	17.74	16.40
Males	329	405	363
Females	288	312	282
By age			
Under 1 year of age	106	137	119
Between 1 and 5 years of age	86	77	55
Between 5 and 20 years of age	40	48	55
Between 20 and 60 years of age	261	301	283
Over 60 years of age	124	154	133
By principal causes of death			
Apoplexy	10	11	13
Heart disease	47	51	35
Bronchitis	19	24	31
Consumption	81	73	75
Cholera	27	36	28
Cholera infantum	10	11	7
Cholera morbus	12	8	11
Diarrhoea	50	60	40
Enteric diseases, other	3	3	9
Erysipelas	12	41	32
Fever	7	8	2
Nervous diseases	15	26	29
Pneumonia	103	132	123
Syphilis	11	9	13
Suicide	8	12	15
Tetanus	4	5	10
Unnatural causes	20	39	37
Whooping cough	11	6	1
Measles	128	162	144

List of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

(May 7, 1907.)

1. The Digestion of the Proteids of Cow's Milk in Infancy. By EDWARD N. WALLS.
2. Gleanings from Four Years' Experience in the Correlation of Clinical and Radiodiagnostic Findings. By J. C. COOPER.
3. Multiple Neuritis (Nondiphtheritic) in Children. By H. M. JORDAN and H. S. GILCHRIST.
4. A New Method of Treatment for the Inoperable Cancer of the Uterus by X-ray. By ALFRED GORDON.
5. Myxoedema. By HOWARD.
6. Some Personal Experience in the Use of Phosphorus in Ophthalmic Practice. By W. FRANKLIN COLEMAN.
7. Influence of Pregnancy. By W. M. JORDAN.
8. Influence of the Mother's Health in Pregnancy on Her Unborn Child. By J. W. BALLANTYNE.
9. Surgical Anesthesia with Spinal Anesthesia. By J. W. BALLANTYNE.
10. The Function of the Prefrontal Lobes. Apropos of the Pathological Findings in a Case. By ALFRED GORDON.
11. Acute Overstraining of the Heart. By THEODORE SCHOTT.

1. The Digestion of the Proteids of Cow's Milk in Infancy. Walls observes that there is no evidence that the proteid of cow's milk causes any digestive disturbance in the infant. All experiments prove that cow's proteid is easy to digest and resists putrefaction. The methods used as aids in the digestion of the proteids are without reason. In sterile, fat free milk we possess an unequaled therapeutical agent in the treatment of the nutritive disorders of infancy.

2. Gleanings from Four Years' Experience in the Correlation of Clinical and Radiodiagnostic Findings.

Cooper concludes that: 1. Bilateral local functional spasm of the diaphragm can occur. 2. An appreciation of percussion resistance is of more assistance in diagnosis than is the percussion note. 3. An interlobar pleural effusion is sometimes serous, and hence the term interlobar empyema is a misnomer. 4. So called functional dilatations of bloodvessels are really temporary aneurysms, and the vessels may change at or after death. 5. As Tallant has shown, many persons present the Broadbent retraction of the left lower posterior chest wall. In those cases in which there are no adhesions the author has found that the position of the maximum retraction varies with the respiratory phases, being higher during expiration, lower during inspiration, while in cases with adhesions this change does not happen. 6. In patients presenting a pouch of the œsophagus a change of pulse rhythm may occur, according as the pouch is empty or full, this variation being better marked during full respiration. 7. Pericardial effusions are often unrecognized and probably some cases of dilated hearts which have undergone extreme reduction in size from the Nauheim treatment have been instances of pericardial effusion. Of the correlation of clinical and Röntgen diagnostic work, he observes that it will much increase the average physician's percentage of successful diagnoses, and it will enable even the expert clinician to assert that certain lesions are present, the existence of which he could otherwise only suspect, as, e. g., peribronchial tuberculosis, central patches of pneumonia where the feeding bronchus is blocked, certain cases of biloculated or triloculated stomach, and it will assist him to maintain a uniform standard, since it will tend to save him from errors made when he is brain weary and hurried. Besides, it will sometimes render unnecessary dangerous inquisitive diagnostic methods, as, e. g., in œsophageal pouches or dilatations. It will also aid considerably in teaching, especially where it is necessary to correct rather than to instruct.

3. Multiple Neuritis (Nondiphtheritic) in Children.

Jordan and Gilchrist say that it appears that the clinical picture of multiple neuritis in children does not differ in any material manner from that presented by the disease in adults. The prognosis is good. The authors note complete recovery in fifty-eight of the cases in literature, in forty-six partial recovery at the time of the report. In one case recovery failed to take place, and in thirty-three cases no mention is made as to the course of the disease. Fourteen cases were fatal; two arsenic, two alcohol, one lead, one unknown, six ascending paralysis, one angina follicularis, one syphilis. In treatment, the cause, if possible, should be removed. A nourishing diet should be given, the bowels kept open. Rest in bed in the early stages, quinine in the malarial cases, massage, electricity, passive exercise, mild gymnastics, and hydrotherapy are helpful. A tonic may be given. The pains usually disappear spontaneously; if they do not, hot baths or bromides will relieve them.

5. Myxoedema.—Howard follows the general rule in dividing myxoedema into three groups: 1. Cretinism, a chronic affection, either congenital or appearing at any time before puberty. 2. Myxoedema proper, including those cases in which the symptoms develop in an adult at any time after puberty. 3. Operative myxoedema. This is the variety in which the symptoms of myxoedema develop after a total thyroidectomy for goitre or other disease of the thyroid gland. Of this variety there are two different types, the cretinous and the adult myxoedematous, according to the age of the patient at which he gland was removed. By far the great majority of cases occur in the white race; it is to be found most frequently in cold climates, and is probably more frequent in Europe than in any other continent, Great Britain producing the majority of the cases. Females are more prone to the disease than males. The disease may be transmitted directly from either patient, but more commonly from the mother. The usual antecedents of chronic maladies, viz., alcohol and syphilis, play little or no part. An important element in the treatment is the maintenance of body warmth, which is best secured by moving to a warm climate and by the wearing of warm clothes. The bowels must be regulated and a good, nutritious diet provided. Until 1893 a great many different drugs were advised, and, as is always true when such is the case, none of them were of especial value. Various tonics, as iron, quinine, hypophosphates, were tried. Diuretics and diaphoretics were also used. Jaborandi and pilocarpine given over a long period of time have in some cases proved of benefit, depending, according to Davies, not on their action on the skin, but on their tending to increase the secretion of the thyroid gland. Nitroglycerin and a host of other remedies had their day. At present the thyroid therapy is the foremost treatment. The first thing in the administration of thyroid preparation is to determine the most suitable constant daily dose of the drug; this can only be done by trial and must be determined for each case. It is best to begin with a small dose (one five grain table, or two grains of the extract) once a day, and gradually increase in frequency and in amount until the symptoms begin to subside. This stage of the treatment has to be carried out with great care in all cases in which the disease has lasted for some years, in the aged and in those who show any indication of arterial or cardiac degeneration. The first effect noticed is the rising of the body temperature to normal. Next there is a gradual or even sudden diminution in the subcutaneous œdema with a consequent loss in the body weight. There is also a restoration of the secretion of the skin, which becomes moist and soft and loses its harsh, dry, roughened character. Very frequently the old skin is desquamated in the form of large flakes until an entirely

new epidermis is exposed. The hair begins to grow in the form of a fine, thick crop over the scalp, pubes, and axillæ. The menses return to their normal regularity and quantity. The urine is sometimes considerably increased in amount, and the albuminuria and cylindruria disappear. The anæmia, however, may not clear up, may be increased and be accompanied by the appearance of a true œdema of the feet. Both these, however, usually disappear in a few weeks when the patient gains his normal strength. With the physical improvement there is a corresponding improvement, *pari passu*, in the mental and nervous symptoms.

8. Influence of the Mother's Health in Pregnancy on the Unborn Child.—Ballantyne believes that all diseased conditions of the mother in pregnancy, whether due to microbes, toxins, toxic agencies, or diatheses, are dangers to the fœtus. The fact that the fœtus sometimes, perhaps often, escapes must be largely ascribed to the protective influence of the placenta. The morbid influence may either force its way through the placental barrier and so reach the fœtus and cause disease, etc., in it or, by destroying the integrity of the placenta itself, it may cause death of the fœtus, but the laws which regulate the placental interchanges, normal as well as pathological, have not yet been discovered. The great safeguard of the fœtus, if the mother be diseased, is a healthy placenta which opposes the passage of germs and toxins, and which is not itself liable to the attacks of these morbid agencies. We do not yet know if there are any medicines which act, as it were, as placental tonics; perhaps potassium chlorate and mercury are of this nature, and possibly some of the organic extracts may be found to have this action.

10. The Function of the Prefrontal Lobes.—Gordon remarks that among all possible lesions of the prefrontal lobe, tumors are the best studied and indeed the majority of observations concern those of prefrontal neoplasms. Summing up the opinions of all observers, the following are the principal symptoms: Mental hebetude, automatism, excitement, and irritability, or else depression, disorientation, and loss of power to concentrate attention. The German writers long ago called attention to a special symptom, which they found in a large number of cases in diseases of the prefrontal lobe. Jastrowitch gave it the name *moria*; Oppenheim calls it *Witzelsucht*. The characteristic feature of this symptom is the humoristic spirit which is seen in the patient's actions and words. Although it is not present in every case, and this symptom was observed in tumors of other areas of the brain, it is nevertheless admitted by many writers to be present more frequently in affections of the prefrontal lobe than of any other region of the cerebrum. The author describes a case of his own.

MEDICAL RECORD.

July 27, 1907

1. Observations on Arteriosclerosis. By H. NEWTON HEINEMAN.
Malignant Disease and Malaria With Reference to the Spinal and Anterior Horns.
By CHARLES F. KIEFFER.
3. Notes on Six Thousand Cases of Neurasthenia.
By CHARLES D. CLEGHORN.
4. Pathology of Gonorrhœa in Women. By H. C. COE.
5. Gonorrhœa in Women. Infection of the Urethra, Vagina, and Ducts of the Glands of Bartholin.
By WILLIAM S. STONE.
6. Gonorrhœa During Pregnancy. By J. CLIFTON EDGAR.
7. The Eye and Ear Complications of Influenza.
By CHARLES GRAEF.

2. Malignant Disease and Malaria.—Kieffer concludes that there is no real antagonism between malaria and malignant disease. Malarial infection supervening on malignant disease does not modify the latter. Natives of tropical countries enjoy a relative immunity to malignant disease, which, however, varies within

wide limits. The progress of civilization with the adoption of the ways of life of the white man materially diminish this immunity.

3. Notes on Six Thousand Cases of Neurasthenia.—Cleghorn observes that neurasthenia is the *bête noire* of the dispensary neurologist. He reviews the classification advocated by different physicians as follows: Beard divided cases into (1) cerebral, (2) spinal, (3) digestive, (4) sexual, (5) traumatic, (6) hysterical, (7) hæmineurasthenic. Starr says we can recognize cases as due to (1) anxiety and worry, (2) overexertion, mental or physical, (3) beginning degeneration of neurones, (4) toxic cases. Again, Starr divides the cases anatomically into (1) general neurasthenia, affecting all parts of the nervous system, and (2) local, involving brain or cord, or vasomotor system chiefly. Dana gives the following forms: (1) Primary, (2) hysterical, (3) acquired, (4) climacteric, (5) traumatic, (6) spinal, (7) with fixed ideas, (8) angio-pathic, and (9) grave. Finally, Proust and Ballet state as forms of neurasthenia (1) cerebrospinal, (2) neurasthenia of women, (3) genital, and (4) traumatic. Out of 37,564 patients who had applied for treatment in the neurological department of Vanderbilt Clinic during the eighteen years from October, 1888, to November, 1906, there were found 6,000 cases of neurasthenia. From this list were excluded cases which had any definite symptoms recorded of hysteria or insanity. No cases in children under thirteen years of age were found which could not be attributed to the ordinary nervousness brought on by fright or poor environment, though some of them might have been found to be neurasthenic had they been followed up for a sufficient time. Of the 6,000 cases thus remaining, 3,516, or 58.6 per cent., were male and 2,484, or 41.4 per cent. females. From his series the author shows that neurasthenia is much more frequent in men than in women. It occurs between the ages of twenty and forty in two thirds of the cases, few comparatively starting after forty. The indoor occupations furnish a large majority of all cases. Among causative factors, the disturbances of the gastrointestinal tract and the intoxications stand out as principals, and the most constantly present symptoms seem to be headache, insomnia, and constipation.

4 and 5. Gonorrhœa in Women.—Coe, in speaking of the pathology of gonorrhœa in women, states that the old views as to the site of primary infection have been considerably modified. It was formerly held that the vagina was first infected, but we know now that the intact mucosa of this canal is quite resistant to the action of the gonococcus, and that germ may enter the cervix at the time of the impure coitus, with or without accompanying infection of the urethra, Bartholinian glands, or vulva. Moreover, it is a fact often noted that the most virulent specific vaginitis may not extend beyond the cervical canal. It has never been satisfactorily explained why such extensive changes in the tubes should result from an infection apparently so mild that its inception was not noticed by the patient, or why a severe type should remain localized below the os internum. Doubtless the different powers of resistance in the tissues of different individuals account for this irregularity. It has been demonstrated beyond a doubt that the mere presence of Neisser's cocci in the secretion does not account for all the tissue changes that occur. They possess toxic properties which are active after the microorganisms themselves have perished. Bacteriologists are familiar with the frequent occurrence of mixed infection, and it is probable that the *Staphylococcus aureus* and colon bacillus remain active after the gonococci have disappeared.—Stone observes that the common idea that the urethra rarely escapes being involved early in the course of the disease seems to be true, although functional dis-

turbances of the bladder from other cause, are so frequent in women that the physician is often not consulted until the urethritis is better or well. On account of the shortness of the female urethra, its entire length is usually involved, but the course of the disease is usually milder and of shorter duration than in the male. It is the experience of the writer that, with appropriate treatment, the disease lasts only from four to six weeks, but that without treatment the involvement of Skene's ducts occurs in a large number of cases, thus persisting as a local complication for an indefinite period of time. Based upon his observation of the natural course of the disease, the writer's treatment has consisted (1) in proper instructions relative to diet and the contagiousness of the disease; (2) in copious draughts of plain water and such internal medication as will render the urine bland, of which the tincture of hyoscyamus and potassium bicarbonate have been as efficient as any; (3) in the applications of heat to the external genitals, preferably by means of hot sitz baths; and (4) the most important of all, in frequent cleansing of the external genitals with plain or mildly antiseptic solutions, in order to prevent infection of Skene's ducts and the ducts of the Bartholinian glands. Injections in the acute form of the disease, the writer believes, are unnecessary and perhaps harmful. The writer's general conclusion in regard to the disease in the female urethra, then, is that it is usually less important than in the male, the chief thing being the frequent involvement of Skene's ducts whereby reinfection of other parts is always liable to occur, and the constant danger of the transmission of the disease to others. The absence of glands and the character of the vaginal epithelium render this part of the genital tract comparatively invulnerable to the invasion of the gonococcus, except in young girls before puberty, in adult women during pregnancy and the puerperium, and in elderly women at the time of the menopause. A redness and irritation from the stagnation of gonorrhœal discharges from the uterus often occurs, but a few douches with a mildly antiseptic solution quickly clears it up. The infection of these ducts, Bartholinian glands, is considerably less frequent than that of the urethra, and usually occurs later in the disease. It is the result, probably, in most instances of the stagnation of gonorrhœal discharges about the genitals, and thus is largely preventable. The swelling of the duct from the retention of pus in the closed duct is well known. Not infrequently, however, if seen early, the opening is still patent, and pus may be pressed out, and by daily milking its closure may be prevented until the inflammation has disappeared. The author states that there is no way of treating the inflammation in the duct itself except by incision and drainage.

BRITISH MEDICAL JOURNAL.

April 13, 1907.

1. The Surgical Forms of Ileocæcal Tuberculosis.
By H. HARTMANN.
2. Clinical Remarks on the Treatment of Surgical Tuberculosis.
By F. J. STEWARD.
3. The Vaccine Treatment of Tuberculosis in Children.
By O. RIVIERE.
4. The Influence of Antituberculous Serum on the Opsonic Index.
By W. C. BOSAUQUET and R. E. FRENCH.
5. The Relative Opsonic Power of the Mother's Blood Serum and Milk.
By E. LITTON and R. APPLETON.

1. **Ileocæcal Tuberculosis.**—Hartmann states that from the pathological as well as the clinical point of view there are two forms of ileocæcal tuberculosis: 1. Ulcerative caseous tuberculosis, accompanied by pericæcal inflammation, sometimes described as the enteroperitoneal form. 2. Hyperplastic tuberculosis, resembling in its aspect and evolution certain strictures of the rectum, formerly known as inflammatory or syphilitic, and now shown to be tuberculous. Ætiologically

ileocæcal tuberculosis is equally observed in both cases. The disease tends to prevent its occurrence between the ages of twenty and forty years. Before twenty and after forty it becomes rare. The patient may be afflicted with lung tuberculosis, but generally to a slight degree, or even not at all. There is, between localized cæcal tuberculosis and ordinary tuberculous enteritis a great difference, the tuberculous enteritis appearing in the late stages of lung tuberculosis. Infection is probably brought about by ingesta, and localizes itself in the cæcum because of the stagnation of intestinal contents which favors inoculation. Clinically the surgical forms of ileocæcal tuberculosis manifest themselves chiefly by two kinds of symptoms. Some of the cases exhibit the reaction of the peritoneum and its surroundings, simulating appendicitis. Others are the result of intestinal stricture, and are suggestive of neoplasms, all the more because direct examination almost always reveals the existence of a tumor. In the enteroperitoneal form the symptoms are those of suppuration, complicated with the evolution of a pulmonary tuberculosis. Exceptionally the abscess bursts into the peritoneal cavity, and death occurs within two or three days. The hyperplastic form has an insidious onset, with loss of appetite, slow digestion, and vague disagreeable sensations in the right iliac fossa. A tumor can usually be felt; it is smooth and preserves the normal shape of the colon. The disease never retrocedes, and unless operated for invariably proves fatal. Its average duration is two and a half to three years. In diagnosis it is often mistaken for neoplasm, but the progress of the latter is usually more rapid, and the tumor is nodular and irregular in outline. The enteroperitoneal form can readily be mistaken for appendicitis. Actinomycosis can only be suspected when the abdominal walls are rigid and board-like. The treatment of ileocæcal tuberculosis is surgical; the abdomen must always be opened. The writer has collected from the literature 229 operative cases, with 46 deaths. Cases of glandular tuberculosis with subserous nodules, signs of slight localized peritonitis, and without symptoms of lesions in the intestinal mucous membrane, may be cured by simple exploratory cœliotomy. But more often a more extensive operation is necessary. It is never necessary to remove the disease in two sittings, as the obstruction is never extensive. It is important to remove with the cæcum the glands occupying the ileocæcal angle, which are always enlarged and often caseous.

2. **Surgical Tuberculosis.**—Steward describes the surgical treatment of tuberculosis of the various joints, notably the hip and the knee. Aspiration he condemns as inefficient and risky; the needle track is very liable to become the seat of disease. The writer has used tuberculin extensively in the treatment of surgical tuberculosis, and his impression is that in the majority of cases the effect has been beneficial. It is quite certain that in the treatment of tuberculosis of the urinary tract, however, tuberculin is of the greatest service.

3. **Use of Tuberculin in Children.**—Riviere has treated a series of cases of tuberculosis in children with tuberculin, controlling the results by means of the opsonic index. His cases included tuberculous dactylitis and superficial abscesses, tuberculous glands, psoas abscess, tuberculous joint disease, abdominal tuberculosis, and phthisis. His conclusions are as follows: 1. That in tuberculin we have a most valuable remedy in localized tuberculosis. With proper dosage a steady uphill progress occurs both in the local conditions and in the general health. That this improvement corresponds with an increase in the opsonic power is shown by the alternate improvement and relapse in superficial lesions with the rise and fall of the opsonic index of the blood. 2. That tuberculin, especially suitable for localized tuberculosis, is also of value in many

cases of less localized infection, especially if nutrition be not greatly impaired. Many of the cases appeared hopeless from the onset. With marked wasting and general illness no good results should be expected; yet even under such conditions tuberculin is occasionally the turning point in a downhill course. So that unless the lesions are known to be widespread, it is still worthy of trial. 3. That tuberculin cannot take the place of surgical procedures, but should be used in conjunction with these. Especially must caseous material, unless small in quantity, be removed, and this should be done at a time when the opsonic index is at a high level. On the other hand, many cases would escape the necessity for surgical measures if tuberculin were given sufficiently early. 4. That the secondary infection, always present with open tuberculous lesions, generally lessens with improvement in the tuberculous process. 5. That tuberculin treatment should only be undertaken by those who have given it special study. *Dosage*: One two thousandth of a milligramme is the average adult dose and fractions of this must be given to children, according to their size. But children stand rather larger doses in proportion to their weight than adults.

4. Antituberculous Serum and the Opsonic Index.—Bosauquet and French have studied the influence of Marmorek's antituberculous serum upon the opsonic index of the blood of a number of patients suffering from advanced pulmonary tuberculosis. Early cases often improve wonderfully upon fresh air and plentiful feeding alone. From a study of their five cases they conclude that a series of daily doses of Marmorek's serum will, when administered rectally, usually produce a rise in the tuberculoopsonic index; this rise begins after the first three or four doses and soon reaches a maximum, close to which the index remains for three or four weeks, while serum is being given, and does not fall until nearly a week after injections have been omitted. This rise in the opsonic index is coincident in some cases with an improvement in the general condition of the patient and a diminution of the diurnal variations of the temperature. Subcutaneous injections of the serum do not seem to have such good effect. Antidiphtheria serum given subcutaneously caused a rise in the tuberculoopsonic index, but an initial fall was observed.

LANCET.

April 13, 1907

1. The Increase of Insanity (*Lumleian Lectures, III*).
By G. H. SAVAGE.
2. The Pathology of Melanotic Growths in Relation to Their Operative Treatment (*Hunterian Lectures, II*).
By W. S. HANDLEY.
3. Notes on One Hundred and Thirty Consecutive Extractions of Cataract Without a Failure.
By C. HIGGINS.
4. The Successful Treatment of Tuberculosis and Leprosy by Means of an Almond Metabolic Product, Chemically Altered, of a Bacillus Discovered at Boshof (Orange River Colony) in 1898.
By S. F. WERNICH.
5. Five Cases of Inguinal Bubo.
By G. H. COLT.
6. The Treatment of Prostatic Congestion by Electrical Methods.
By J. S. BOLTON.

2. Melanotic Growths.—Handley, in the second of his Hunterian lectures, discusses the nature of and the operations for malignant melanotic growths. The term "melanoma" should be used for all tumors containing melanin granules, whether simple or malignant. Just as we speak of simple and malignant adenomata, so the melanomata may be divided into simple and malignant forms. It is probable that the melanomata only occur in situations where the melanin containing cells are normally found. These tumors occur most commonly upon the skin, especially upon its deeply pigmented areas, and within the eye. More rarely they

may arise upon those mucous surfaces which are found with the skin at the orifices of the mouth, the anus, and the vagina. As rare curiosities they have been met with in ovarian dermoids. They occur in horses, most commonly gray ones, in oxen, and in dogs. Pigmented warts and moles. All these varied forms of simple melanoma are practically identical in structure. They show pigmentation either of the stratum mucosum of the epidermis, particularly in the interpapillary epithelial cell columns, or of the subepidermal layer of the corium, or pigmentation of both layers. Apart from their pigmentation the simple melanomata are characterized by the presence of lines and groups of unpigmented richly protoplasmic cells, "nævus cells," fusiform or rounded in section, lying in the superficial third of the thickness of the dermis, but deep to its pigmented layer. The warty overgrowth seen in certain moles is probably a secondary characteristic, dependent upon a local imperfection of the lymphatic circulation. Such warty overgrowth, due to the same cause, is familiar in elephantiasis. Malignant melanomata of the skin appear, as a rule, to be derived from the nævus cells of pigmented warts and moles. If these cells are shown to be of mesoblastic origin, then the malignant melanomata are sarcomata. But if they are epiblastic in origin, then the malignant melanomata are carcinomata. In a large majority of cases malignant melanoma arises in connection with a preexisting simple melanoma. The onset of malignancy is usually indicated by the enlargement of the mole, but the primary growth seldom exceeds a walnut in size. Frequently there is hæmorrhage and there may be an offensive discharge. Occasionally no apparent change occurs in the mole, and its malignancy is signalized only by the appearance of metastases. Sometimes no primary growth can be found. Another interesting group are those described as melanotic whitlows. They apparently begin as ordinary chronic septic inflammation of the paronychia skin, and their real nature is often only indicated by a narrow black line in the skin forming a border to the swelling. They occur most frequently upon the outer side of the great toe and upon the index finger. The malignant melanomata of the skin may be classified in two groups: (a) Those originating from simple melanomata, and (b) implantation melanomata arising from the traumatic implantation of chromatophores. The distribution of pigment in malignant melanomata is very irregular. Sharply defined portions and even the whole of the primary growth may be free, or nearly free, from pigment. The secondary nodules may be coal black or colorless. The glandular metastases are usually deeply pigmented. When malignant melanoma arises in the fingers or toes, amputation should be performed at once. The flaps should never include any skin within at least an inch of the tumor. They should be very thin, consisting only of skin and a very thin layer of subcutaneous fat, and not including the deep fascia. Over the whole of the exposed area the deeper subcutaneous fat and deep fascia should be dissected up to the base of the digit to be removed, until the line of disarticulation or division of the bone is reached. The glands in the groin or axilla are then to be removed. If they are already palpably enlarged, it is probable that anything short of amputation at the wrist or ankle is useless. When the growth starts high up on the limbs or on the trunk or head, amputation is replaced by excision. When a pigmented wart or mole increases in size, ulcerates, or gives rise to bleeding or discharge, it should invariably be treated as a malignant tumor. To wait for the establishment of the diagnosis by palpable enlargement of the regional lymphatic glands is to court disaster.

6. Electricity and Prostatic Congestion.—Bolton reports two cases of prostatic disease treated with great success by high frequency electrical currents. A glass

vacuum electrode, passed into the rectum, was used. Recent investigations have shown that the x rays have a remarkable effect upon the sexual apparatus, the spermatozoa being destroyed or rendered functionless by its action. Just as White advocated castration in old men suffering from enlarged prostate, Dr. Moszkowicz has treated enlargement of the prostate by means of the x rays, and finds that the size of the prostate is sensibly diminished and the patients enabled to urinate without trouble. The action of the x rays on the testicles undoubtedly plays a part.

LA PRESSE MEDICALE.

April 28, 1907.

1. The Problems of Drinkable Water. By F. A. MARTEL.
2. Regional Anesthesia of the Larynx. By M. CHOLLEY.
3. Advantages of Abduction of the Arm in the Treatment of Fractures of the Diaphysis of the Humerus. By SAVARIAUD.
4. The Myopathic Paraplegia of Old People. By R. ROMME.

1. The Problems of Drinkable Water.—Martel uses the proposed increase of the water supply of Paris as a text of a paper in which he discusses the transmission of diseases by water, the sources whence drinking water may be obtained, including subterranean waters, the microbiology, and other studies of water, its purification and sterilization, and the measures officially taken in France for the protection of the public health.

3. Advantages of Abduction of the Arm in the Treatment of Fractures of the Diaphysis of the Humerus.—Savariaud states that when the arm is abducted the lower fragment is placed in line with the upper, coaptation is rendered easier, and the dressing can be more readily applied.

April 10, 1907.

1. Nosology, General Pathology, and Diagnosis of Late Appearing Hereditary Syphilis. By L. LANDOUZY.
2. Catheterism of the Ureters Through an Opened Bladder. By F. LEGUEU.
3. The X Rays and the Genital Glands. By P. ANCEL and P. BOUIN.

2. Catheterism of the Ureters Through an Opened Bladder.—Legueu reports several cases of renal and vesical tuberculosis in which he laid the bladder open above the pubes, and by catheterizing each ureter ascertained whether the tuberculosis was confined to the bladder or had also involved the kidneys, and in the latter case whether one or both was affected. In case the disease affected only one kidney nephrectomy could be performed.

3. The X Rays and the Genital Glands.—Ancel and Bouin state that the local action of the x rays on the testicle causes a disappearance of the external, or seminal, secretion with preservation of the internal or interstitial secretion, and that on the ovary they cause a disappearance of both the external and internal secretion. The result, therefore, of the x rays on the testicle is destruction of the procreative power, with preservation of genital activity and sexual characteristics, while on the ovary the result is sterility and the appearance of all the symptoms which follow castration.

LA SEMAINE MEDICALE.

April 10, 1907.

- Antidotism and Antagonism in Therapeutics and Toxicology. By M. ROCH.

Antidotism and Antagonism.—Roch forms the distinction between these two terms that the antidote combats the poison or the drug while the antagonist combats the action of the poison, and that therefore antidotism exists between the substances themselves, antagonism between their actions.

BERLINER KLINISCHE WOHENSCHRIFT.

March 28, 1907.

1. Concerning the Separation of the Pleurae. By A. FERRATA.
2. A Case of Abscess of the Liver with Typhoid Bacilli. By L. A. VENEMA and J. GRÜNBERG.
3. The Spinal Cord, Paralysis, and Its Significance in Medicine. By A. BRUNDELLO.
4. Concerning an Epidemic of Meat Poisoning in East Berlin. By J. JACOBSON.
5. Chemotherapeutic Studies of Typhoid Fever. By P. RÜDIGER.
6. Recent Experiences Concerning Tuberculosis of the Skin (concluded). By A. ALEXANDER.

2. Abscess of the Liver with Typhoid Bacilli.—Venema and Grünberg report the case of a woman, thirty years old, who after an attack of typhoid fever, developed an abscess of the liver which was evacuated and found to contain typhoid bacilli. The literature pertaining to this class of cases is quoted, and the author concludes that probably the abscess was due to a purulent pyelephlebitis started by the intestinal affection, although a positive determination of the aetiology cannot be made without an autopsy.

4. Epidemic of Meat Poisoning.—Jacobson says that from September 9th to 11th of last year ninety persons in East Berlin were seized with severe symptoms which resembled those of ptomaine poisoning. Two died. The cause was traced to certain meat which had a normal appearance, but had, when eaten, produced these symptoms in about eight hours. Several dogs had also been sickened by the meat, and a turtle had been killed by it.

April 1, 1907.

1. Concerning Luxations of the Hip Joint. By L. R. v. RÜDIGER-RYDYGIER.
2. The Inefficiency of the Complex Hæmolysin in Solutions Free from Salt, and the Reason. By A. FERRATA.
3. Inflations of the Knee Joint with Oxygen for Therapeutical Purposes. By L. RAUENBUSCH.
4. Concerning Turgosphygmography and Its Use in the Determination of the Tension of the Pulse. By F. v. KOZIESKOWSKY.
5. Contribution to the Study of Heredity of Heart Disease in Young People (Myocardismus and Hereditary Endocardismus). By G. GALLI.
6. Hay Fever. By P. HEYMANN.
7. Concerning Congenital Strictures of the Urethra. By C. POSNER.
8. Recent Experiences Concerning Tuberculosis of the Skin (concluded). By A. ALEXANDER.

1. Luxations of the Hip Joint.—Rüdiger-Rydygier describes the various forms of dislocation of the hip joint, the clinical picture produced by each variety and methods, or manipulations, by means of which each can be reduced.

2. Inefficiency of Complex Hæmolysin in Saltless Solutions.—Ferrata says that hæmolysis is not induced by a corresponding complex hæmolysin in solutions which contain little or no salt, and have been rendered isotonic for the red blood corpuscles by grape sugar or cane sugar. This is due to the fact that in solutions which contain little or no salt the complement loses its efficacy, and is divided into two components, one of which passes over into the precipitate of the serum globulin, while the other remains in the solution, each of which is by itself inefficient. In order that efficiency of the hæmolysin may be obtained, it is necessary that these two components unite in a salt solution and reproduce the complement. The thermolability characteristic of the complement appertains to the component which remains dissolved in the saltless medium.

3. Inflations of the Knee Joint with Oxygen for Therapeutical Purposes.—Rauenbusch reports several cases of arthritis, mostly arthritis deformans of the knee joint, in which he obtained great improvement by

repeated inflations of the joint with oxygen. A considerable subjective improvement was obtained in this way in three cases of tuberculosis of the joint.

5. Heredity in Heart Diseases.—Galli reports a family in which the father had heart disease, and all four of his children exhibited symptoms which indicated a low degree of resistance on the part of the circulatory system.

6. Hay Fever.—Heymann has obtained good results in hay fever from the administration of preparations of the thyroid gland, and is inclined to ascribe the disease to a nervous diathesis, probably in the region of the sympathetic system.

7. Congenital Strictures of the Urethra.—Posner reports a case of this nature which he met with in a boy, eleven years old. The patient complained of symptoms of pyelitis, the stricture was found and dilated, and the symptoms immediately disappeared.

8. Tuberculosis of the Skin.—Alexander's conclusion, derived from his long paper, seems to be that in cases of tuberculosis of the skin the patient rather than the disease is to be treated, and that in each case the particular remedy or combination of remedies is to be sought by means of which the physician may obtain the quickest and most permanent result.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT.

April 6, 1907.

1. Endocardial Friction Sounds. By GEIGEL.
2. Concerning the Elasticity of the Aorta in Commencing Arteriosclerosis. By STRASSBURGER.
3. The Treatment of Mastitis by Means of Bier's Stasis. By ZACHARIAS.
4. The Hyperamia Treatment of Tuberculosis of the Bones and Joints. By DEUTSCHLÄNDER.
5. A Case of Primary Melanotic Sarcoma of the Spinal Meninges. By THOREL.
6. Concerning Anthrax and Its Treatment. By BARLACH.
7. Bromural, a New Nervin. By RUNCK.
8. The Demonstration of Carbohydrates in the Urine. By GRÜNEWALD.
9. Polyneuritis of Fowls and Beriberi, a Chronic Oxalic Acid Poisoning. By MAURER.
10. What Can the General Practitioner Do to Ameliorate the Sufferings of Cripples? (Concluded). By LANGE.
11. Ottomar Rosenbach. By ESCHLE.
12. Allan Macfadyen. By PRAUSNITZ.

2. Elasticity of the Aorta in Commencing Arteriosclerosis.—Strassburger asserts that the elasticity of the aorta has already become diminished when the first symptoms of arteriosclerosis appear. He has been unable to detect a stage in which the elasticity is increased.

3. Treatment of Mastitis by Bier's Stasis.—Zacharias warmly commends this form of treatment on the basis of a quite extensive experience.

5. Primary Melanotic Sarcoma of the Spinal Meninges.—Thorel reports the case of a man, forty-three years of age, who came under observation with symptoms of compression of the spinal cord, paralysis of the bladder and rectum, paresis of both lower extremities, and severe neuritic pain. The patient died, and on autopsy a melanotic sarcoma was found in the meninges near the lower end of the spinal cord, together with numerous little tumors and pigmentations in the meninges of the other parts of the cord and of the brain. Not the least trace of pigmentation could be found elsewhere in the body.

6. Anthrax and Its Treatment.—Barlach recommends that a groove be made by punctures with the thermocautery about the pustule, that the pustule itself be split with a knife, that the œdema be relieved by suitable incisions, that injections of tincture of iodine be made at greater or less distances about the pustule, and that compresses of corrosive sublimate solution be then applied over the infected area. Injections of

camphor and brandy are to be given according to circumstances. The entire procedure takes but a few minutes and appears to be painless. He alleges that the prognosis is very favorable for fresh cases treated in this manner. The characteristic symptoms make the diagnosis easy, at least for those who have seen a case before.

7. Bromural.—Runck describes bromural as a hypnotic which differs in its action from other modern hypnotics. The sleep induced by it resembles natural sleep, in that it is free from dreams, does not exceed the normal duration, and leaves the patient feeling clear and fresh on awakening.

10. Sufferings of Cripples.—Lange describes many cases of bone and joint disease, and the orthopædic treatment proper for each.

LA RIFORMA MEDICA.

March 23, 1907.

1. A Case of Aneurysm of the Abdominal Aorta Associated with the Presence of Head's Zones. By E. CEDRANGOLO.
2. On the Advisability of Combining Decapsulation and Nephrectomy When the Kidney to Be Preserved is Affected with Nephritis. By DONATO DE FRANCESCO.
3. Symmetrical Gangrene of the Upper Extremities in a Case of Angina Pectoris. By E. SALVINI.

1. Head's Zones in Abdominal Aortic Aneurysm.—Cedrangelo reports a case of abdominal aortic aneurysm in a man, aged forty-one years, in whom he observed as a part of the clinical picture the presence of hyperæsthetic cutaneous zones as described by Head. Such zones are segmental regions of the body corresponding to the various viscera, exactly at the sensory innervation of the skin, as described by Scherrington, Starr, Kocher, and Thorburn. Trophic disturbances occur in the skin in diseases of the arteries, as, for example, in zoster. The points noted in the study of the present case included the belt like distribution of the radiations of pain due to the abdominal aneurysm, these pains dating many years before the development of the symptoms. The administration of mercury and iodide is of value in such cases, whether the cause be syphilitic or traumatic, but it has its maximum value at the beginning of the disease.

2. Decapsulation and Nephrectomy When the Remaining Kidney is Nephritic.—De Francesco advocates the idea expressed by Giordano at the Madrid Congress in 1903, namely, that when a kidney is removed for calculus, tuberculosis, etc., the opposite kidney can be decapsulated if it be found affected with nephritis. Such a decapsulation, in addition to the nephrectomy on the other side, not only does not aggravate the condition of the patient, but gives better chances of recovery and of functional service in the remaining kidney. This apparently paradoxical statement is explained, according to the author, by the fact that decortication of the remaining kidney prevents the congestion which follows any operation, avoids the consequent anuria, and facilitates the performance of the double work which is thrown upon the remaining organ. A report of several cases is appended to this article.

3. Symmetrical Gangrene of the Upper Extremities in Angina Pectoris.—Salvini emphasizes the relation between symmetrical gangrene and angina pectoris. The latter is in the main an angeiospastic disease, and it may easily be understood how a spasm of the arteries may extend through the circulatory system. In the case reported, that of a man, aged seventy years, the symptoms of angeiospasm in the extremities, such as cyanosis and pain, were replaced by a true gangrene of the upper limbs. The patient had suffered from anginal attacks for two years, during which he had suffered pain and numbness in his right arm and hand. The gangrenous process appeared very rapidly and

continued for three months, after which it healed completely, not leaving any traces whatever. It was noted that during the days which followed an attack of angina the gangrenous areas looked worse, and the secretion had a more disagreeable odor and was more abundant.

MAY 30, 1907

1. The Hydatid Fremitus is of Muscular Origin. By C. BERNABEI.
2. A Case of Cyst of the Spermathe Cord of Connective Tissue Origin. By CARLO MUMM.
3. Two Cases of Compound Wounds of the Cranium Followed by Recovery. By S. BENTHO.
4. Multiple Primary Cancer. Cancer and Coexisting Organic Anomalies. By G. MONZARDO.

1. The Hydatid Fremitus is of Muscular Origin.—Bernabei has made a study of the fremitus noted in the presence of hydatid cysts which has been described as a diagnostic sign of this condition. Two years ago, in a case reported by Bernabei, a distinct fremitus was felt over the liver while palpating this organ. This fremitus had all the characteristics of the hydatid fremitus, and it was afterwards shown on operation that the fingers could have come in contact with but a segment of the cystic wall at a point which was so dense and so calcified that the fremitus could not have originated in the cyst. Bernabei then thought of the possibility of a fibrillar contraction of the muscles under the mechanical stimulation of the palpating fingers; in other words, of a muscular fremitus. During the past two years he was able to convince himself of the presence of a muscular fremitus over the liver, which cannot to his mind be distinguished from the so called hydatid fremitus. The muscular fremitus is produced when the mass of muscles is put upon the stretch, and when it is rapidly and interruptedly compressed or tapped. The muscular fremitus can be elicited in any muscular mass, both in the extremities and on the trunk. It can be obtained in any part of the abdomen, even in the lumbar region. In some persons it cannot be obtained at all, and in many others it is so slightly marked that it can scarcely be felt. It is an inconstant phenomenon, as it cannot always be reproduced at will. Thus, it can be obtained one day, and will be absent for some days or weeks. The fremitus on the abdomen can be felt most distinctly in persons in whom there is an increase of intraabdominal tension. Probably it is the expression of an abnormal muscular excitability induced by intraperitoneal lesions, by subcutaneous lesions, or by general nervous conditions. The muscular fremitus when marked can also be heard by auscultation, in which case Bernabei calls it "phonomyoklonus."

2. Connective Tissue Cysts of Spermathe Cord.—Mumm reports a case of cyst of the spermathe cord which upon removal and examination showed no signs of spermathe origin, but was entirely composed of connective tissue. The origin of these cysts is rarely studied with thoroughness, cases being reported without comment as to their pathology. The patient was a man, aged fifty-six, and the cyst was of the size of a walnut situated in the neighborhood of the left external inguinal ring, which was irreducible and gave no impulse on coughing. The cyst was shelled out and the ring closed by Bassini's method. The sac contained simply a fluid in which there were a few leucocytes and a few red cells. The cystic wall had no traces of epithelial elements.

ROUSSKY VRATCH.

MAY 31, 1907

1. On Diffuse Peritonitis Due to Nontraumatic Perforation of the Gallbladder. By B. K. FINKELSTEIN.
2. The Treatment of Acute Articular Inflammations by Bier's Method of Arterial Hyperemia (To be concluded). By A. B. ARAKOFF.

3. On the Diagnosis of Dementia Præcox. By V. N. OBRATZOFF.
4. On the Technique of Staining Smears of Bacteria. Schaudinn with Silver Preparations. By I. A. FINKELSTEIN.
5. The Latest Researches on Syphilis. The Influence of Pains and Venipunctures on Morbidity of Syphilis. By M. A. FINKELSTEIN.
6. Material for Forensic Diagnosis of the Cause of Perforation of the Heart in Lobar Pneumonia (Concluded). By A. S. SOLOVTSOVA.
7. Clinical Observations on Lungs Treated with Hydrocurous Nitrate. By G. M. MARK.
8. The Principal Contagious Disease in Childhood Shown by the Statistics of the Central Railroad Hospital for 1903-1904.

1. Peritonitis Due to Spontaneous Perforation of the Gallbladder.—Finkelstein says that peritonitis due to the perforation of the gallbladder is seen in 2 to 3 per cent. of all cases of diffuse peritonitis. The perforation may be prevented by timely incision of the tense wall of the gallbladder, and cholecystotomy is therefore indicated in all cases of acute inflammation of the sac, with symptoms of peritoneal irritation. The treatment of diffuse peritonitis due to lesions in the biliary tract consists in either drainage or the removal of the gallbladder. The operation gives a mortality of 50 per cent.

3. Diagnosis of Dementia Præcox Through the Handwriting.—Obratzoff considers in a very interesting article the characteristics of dementia præcox as shown in chirography and in composition of letters. A considerable number of cases which he observed convinced him that dementia præcox is characterized by such marked peculiarities in this respect that by examination of letters and other writings of these patients the diagnosis can be made quite definitely. In 1904 he published an article on the handwriting of the insane in which he showed the main characteristics of the writing of dementia præcox. Similar work was done in 1905 by Rogues de Fursac. Some of the patients exhibit a perfect mania for writing. They fill page upon page with disconnected phrases, repeating themselves in a stereotyped way. They copy very willingly all that may happen to come under their notice without any sense of practical value. Other patients, however, feel no desire for writing, but will write when asked to do so. Finally, a third class of patients become unable to write. From the viewpoint of chirography their handwriting is marked with great carelessness, includes a mass of corrections, and is illustrated with drawings of extremely naïve character. There is no regularity in the arrangement of lines in letters, the size of letters varies extremely, the writing being either very small or very large in different parts of the line or page, or new forms of letters are sometimes created. As to chirography, we find here the features of melancholia as well as those of mania alternating again with those of depressive conditions. From the psychological viewpoint the writing of these patients shows a correspondence with neither their age, their education, nor their social position. Any knowledge that may have been acquired before the disease set in is exhibited only in flashes, occasionally cropping out amongst commonplace or incoherent matter. Psychical automatism is also manifested in the writings of these patients. They have delusions of grandeur and of persecution, which are also manifested in their letters. Their construction is often original, with peculiar phrases and turns of speech, and sometimes their letters are interspersed with symbolic signs, etc.

THE MILITARY SURGEON

MAY 31, 1907

1. The Classification and Treatment of Burns. By CHARLES P. FINKELSTEIN.

2. The Endurance Test at Camp Tacoma. By ROBERT S. WOODSON.
3. Prolonged Artificial Respiration. By JOHN W. TRASK.
4. Clinical Report on the Use of Yeast in Genitourinary Work and Gynaecology. By THOMAS PAGE GRANT.
5. English, German, and French Conceptions of Colonial Prophylaxis in East Africa. By HENRY S. T. HARRIS.
6. The Base Hospital in Cuba. By WILLIAM H. BROOKS.
7. Report of Committee on the Public Service Medical School. By JOHN VAN RENSSLAER HOFF.
8. Description of an Electric Incubator for Use Aboard Ship. By RICHARD C. HOLCOMB.
9. Application of the High Under Hyosine Morphine Cactine Anesthesia. By HENRY G. EBERT.

3. **Prolonged Artificial Respiration.**—Trask reports two cases of individuals who had been in the water for a time considerably longer than is usually followed by recovery. It would seem that the best method of artificial respiration without apparatus is that of Silvester, where there is but one operator, and the combined Silvester and Howard methods, as suggested by A. H. Smith, where there are two or more to assist in the work. These are the methods prescribed in the regulations of the Life Saving Service. The results gotten by Schafer with his method are better than would have been expected, and are so good that they would appear to merit corroborative experimental work. It is also very possible that an apparatus such as O'Dwyer's would be found exceedingly convenient and efficient in cases of apparent drowning because of the fact that the exchange of air can be made as great or greater than in normal respiration, and this with the utmost ease and with but one operator who need not possess the amount of strength and endurance required in the other methods. The O'Dwyer apparatus consists in an intubation tube attached to an ordinary bellows. It would seem that a very little instruction, especially if conducted on the cadaver, would be sufficient to enable the average person to properly insert the tube into the larynx. The two cases here reported and the others cited from the literature would seem to urge the practice of persistence in artificial respiration for a period of at least two hours in all cases of the apparently drowned before hope is abandoned, especially where the known submersion has been for less than thirty minutes or where the time is in doubt. In the first case the man must have been more or less under water for at least twenty-three minutes, and some who witnessed the accident stated it to have been over half an hour, and it is very safe to say that his resuscitation was due entirely to the persistence and perseverance of the life saving crew, who kept up the artificial respiration for over an hour and three quarters, and thus supplied the energy for breathing until his blood and tissues had received enough oxygen to continue the process for themselves. The second case would seem to have been in the water for nearly half an hour, and yet the boy recovered after somewhat over an hour of artificial respiration.

5. **English, German, and French Conceptions of Colonial Prophylaxis in East Africa.**—Harris, in a translation from *Le Semaine médicale*, states that the English conception of colonial prophylaxis is summed up in the idea that the European should practise individual to the exclusion of general hygiene, and thus create for himself conditions of existence which render life possible for him in an environment which is and which remains eminently infectious. The Germans practise general prophylaxis and seek by every means to ameliorate the health conditions of their colonies. The French plan seems as yet to be rather vague. The French colonist practises prophylaxis either very little or badly. He does not know how to surround himself with comforts, in the manner which the Englishman, who builds for permanence and not temporarily, understands so well. Lately the govern-

ment seems to have adopted the German conception of general prophylaxis, that is to say, that which embraces the sanitation of the soil with obligatory hygiene of its inhabitants. The most seductive and the most rational of these conceptions, is undoubtedly that which the Germans are applying in their colonies. To assure the health of the European by the destruction of the germs of disease among the natives is a work which appeared gigantic, beyond human power. Since 1901, the date of its first application, this method has, in unbelievable proportions, changed the rate of mortality and morbidity in this colony of East Africa.

6. **The Base Hospital in Cuba.**—Brooks gives a very clear description of the base hospital of the army of Cuban pacification, situated some eight miles from Havana, on a grassy tableland sloping gently northward to the Gulf of Mexico. The equipment of the hospital, says the author, as a whole, is adequate and satisfactory, but there is urgent need of laundry facilities. In the tropics a much larger allowance of hospital linen is necessary than in the hospitals on the home stations, and the laundering of it has been, and is, one of the most difficult problems with which the administration has to deal. Since the hospital's inception 438 patients have been admitted and successfully treated. The mortality has been gratifyingly low, only two deaths having occurred, both being among the civilian employees of the quartermaster's department. Thanks to the efficiency of the sanitary department of the island, yellow fever has been eradicated and no cases have been admitted to the hospital.

7. **Report of Committee on the Public Service Medical School.**—Hoff, as chairman of this committee, says that the committee recommends that the government shall educate the medical officers whom it needs in its army, navy, and public health service as it educates its other officers at West Point or Annapolis, from the high school stage up. As a means to this end it suggests: First, that medical cadets be appointed in the manner and under the conditions now provided for the appointment of cadets to the other public service schools. Second, that a public service medical school be established in which these cadets shall be educated to become medical officers. As the easiest way of accomplishing this object, it is suggested that the school be organized in connection with some established medical college of high standing, and that it have two departments, medical and military, the former devoted wholly to professional teaching, the latter to the specialties of the medical officers and discipline. To give these suggestions practical form, the proposed school might be organized at Fort McHenry, Baltimore, Maryland, which post it is understood has been abandoned as a military station, in connection with the Johns Hopkins University. In this great institution the cadets should be instructed in the medical branches of their profession. The exceptional standing of this renowned school would be the best guarantee of the quality of the professional instruction given and the character of its graduates.

Letters to the Editors.

A GENERAL PRACTITIONER ON THE PHARMACOPŒIA.

YONKERS, N. Y., April 19, 1907.

To the Editors: I send you herewith a short contribution to the discussion of why the physicians do not limit themselves to official drugs in their prescriptions. I hope you can use it in your journal while the interest is still warm. I have not seen this side of the question advanced in any of the discussions so far.

Why is not the pharmacopœia more popular with

the physicians? Why do not a larger proportion of prescriptions call for pharmacopœial drugs? Is there any good reason on the part of the physician why he should use the pharmacopœia more? Is there any good reason for the lack of popularity?

When a student is graduated a full-fledged physician he has passed an examination in materia medica, and that materia medica is composed principally if not entirely of pharmacopœial drugs. The first few years in practice he is gaining experience, has time to study his cases pretty thoroughly, and is prejudiced in favor of the pharmacopœia. He gets familiar with certain drugs which in this combination or that appear to influence certain conditions for good. Certain others which he has been taught to depend upon have failed him, and a proprietary has seemed to turn the trick.

At the end of eight or ten years he has quite a pharmacopœia of his own, limited, to be sure, but composed of drugs which he feels that he can depend upon, some official and some nonofficial. One of these is perhaps tincture of digitalis or tincture of belladonna or tincture of aconite. He has got beyond the textbook in these drugs, and his dosage does not depend on a memorized strength, but on the effect which he has been accustomed to get from a certain quantity. Just now a revision of the pharmacopœia becomes authoritative, and he wonders why his prescriptions calling for these tinctures do not have the effect he has learned to expect. He now learns that the strength of these tinctures has been materially decreased. He makes a mental note of this and tries to arrange his prescriptions accordingly, but he has come to think of tincture of digitalis as an entity with certain effects, and not as containing a certain percentage of a drug which, in its crude form, has never entered into his experience, and therefore he finds himself more or less at sea when writing prescriptions for that tincture. What wonder, then, if he falls back on a proprietary which he has until now used but infrequently, but which he feels it is to the interest of the manufacturer to keep at a standard strength, and which therefore he can depend upon? But for the next changes in the pharmacopœia we are not to wait ten years. The druggists are clamoring for an annual revision to be issued in a supplement. But, you ask, what have the druggists to do with it? Is not the pharmacopœia in the hands of the physician?

For an answer, let us look at the composition of the revision committee—fifteen druggists and eleven physicians, and, of these physicians, more of them are theorists than practical men. Am I trying to block the wheels of progress? Not at all. A revision every year if you choose, but make it in the interests of the physician. Let the changes be the adding of new preparations and the cutting out of obsolete ones, but hands off the old standbys.

But why should the physician make a fetish of the pharmacopœia? We can see why the druggist should be interested, and why he should wish that prescriptions be limited to a certain list of drugs, but since when have the physicians been in leading strings to be dictated to by any body of men, whether they are called a committee on revision or a committee on new and nonofficial preparations?

The physician's business is to carry on the battle against disease and to use the means, whether official or not, which will give the victory to his patients. It is the business of the pharmacist to see that the drugs furnished on prescriptions are what the physician expected his patient to receive, and it is not his province to try to tie the physician down to a certain set of drugs. The individual physician has to shoulder the responsibility in each case, and his hands should be perfectly free.

J. LEVERETT.

Proceedings of Societies.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Meeting of February 1, 1907.

The President, Dr. WILMER KRUSEN, in the Chair.

Chorea During Pregnancy. Dr. CHARLES FOULKROD reported the case of a patient in whom chorea had occurred in the course of five successive pregnancies, possibly causing the death of three or four of the fetuses. By careful watching he had succeeded in carrying the woman to term and delivering her of a living child. Bromides in conjunction with chloral were administered. Dr. Foulkrod was in attendance only during the last pregnancy. The case illustrated throughout the entire history the possible toxæmic origin of chorea during pregnancy.

Dr. WILLIAM R. NICHOLSON thought the present theory of chorea as probably a manifestation of toxæmia had been well brought out in the paper, and regarded as of value the use of chloral to increase the excretory products. The general belief that chorea was more frequently present in illegitimate pregnancies, he thought, would not be upheld by a large statistical study. This frequency had not been shown in the maternity with which he had been associated for some years.

Dr. FOULKROD referred to one case of illegitimate pregnancy in which the choreic symptoms were brought on by delivery and worry over the condition. In the fifth pregnancy, in the woman whose case he had reported, the symptoms were much milder than during the first, but there was abortion with strong choreic symptoms, so severe that the patient could not hold a glass of water in her hands.

The Early Diagnosis of Pregnancy.—Dr. ELLICE McDONALD, in this paper, said that, with the hope of placing the diagnosis of pregnancy upon a more exact basis, a study of the conditions and pelvic signs had been undertaken. A hundred cases had been examined at various weeks of pregnancy. The duration of the pregnancy was calculated from the date of the last menstruation. The pelvic signs were the only ones closely studied. Jacquemien's sign of the violet hue of the vagina was found to be of most value in pregnancy later than the eighth week. It was first noticed at a spot just below the urethra. Blush of the cervix was noted in much the same percentage of cases as Jacquemien's sign. During the study it was noted that in the early stages of pregnancy there was a marked difference in the ease with which the body of the uterus could be moved upon the cervix. This was said to be usually best noted about the fifth week, and was generally so marked that the body and the cervix might be doubled upon themselves and brought together, the empty bladder and vaginal walls alone separating them. This sign was said to be best elicited by placing the palmar tips of the vaginal fingers posteriorly and below the end of the cervix, and the fingers of the abdominal hand on the top of the fundus. The bladder must be empty and there must be no contraction of the uterus. The sign was easily observed after slight practice. It might be elicited before there was thinning of the lower segment, but was caused by the same conditions which produced Hegar's sign.

Dr. BARTON COOKE HIRST spoke of the possibility of gross error of diagnosis early in pregnancy and of the necessity of the methodical examination of patients. The sign to which attention had been called in Dr. McDonald's paper he had always grouped with Hegar's sign, making no distinction between the softening of the lower segment and the thinning. Among the early signs of pregnancy upon which he depended, the soften-

ing of the cervix held an important place. The eccentric hypertrophy of the cervix he also regarded as an important sign. Without this he did not think pregnancy was possible, and by its absence it was often allowable to say that pregnancy could not exist in a certain case. If, on the contrary, the cervix was much broader and softer than normal, pregnancy was at least probable. The change of color in the genital tract he regarded as a valuable symptom. It was, however, lacking in a considerable percentage in the early stages, the very ones in which the diagnosis was most difficult and most desirable. He referred to the fact, seldom mentioned in textbooks, that as pregnancy advanced the blue or purple discoloration of the genital canal was sometimes absent. He had, however, never seen a case in which, if this blue discoloration was absent, there was not a transformation of the pink of the mucous membrane of the introitus and vestibule into a bright scarlet.

Dr. EDWARD P. DAVIS referred to the great importance of a systematic procedure in the early diagnosis of pregnancy. The head, face, and neck of the patient should be investigated to determine the enlargement of the thyroid, alterations in the pupils, abnormalities in the color of the face, and the presence or absence of abnormalities in the nose, throat, and mouth. In some normal pregnancies the thyroid was said to be slightly enlarged, while in pseudocystitis the thyroid was often considerably diseased.

The action of the heart was readily excited during pregnancy, and hæmic murmurs were often present in the early months. One of the most significant of the early symptoms of pregnancy in gouty and neurotic women was said to be a generally irritable condition of the mucous membrane of the nose. In one such case the condition at once disappeared after an abortion.

Dr. DAVIS had not clearly defined the sign described by Dr. McDonald. He had been accustomed to search for softening in the lower uterine segment and to consider this as strongly indicative of pregnancy. This phenomenon was usually associated with enlargement of the uterine body, and the two were taken together as practically constituting Hegar's sign. Disturbances in metabolism were mentioned as present early in pregnancy. Color signs in the genital canal he regarded as suggestive rather than decisive. When the examination of the uterus gave several signs significant of pregnancy, and the general examination of the patient coincides, Dr. Davis would admit that the patient was probably pregnant, but a positive assertion was to be withheld until actual evidence of foetal life was obtained. Ectopic gestation and the diagnosis of pregnancy complicated by the death of the ovum were mentioned as subjects offering a large field for discussion. It was often impossible to distinguish between intrauterine pregnancy with a dead ovum and blood clot and the womb retroverted and a ruptured ectopic gestation sac with pelvic hæmatocele.

Dr. RICHARD C. NORRIS believed that the early positive diagnosis of pregnancy would always be a very difficult matter in spite of the most advanced refinements in diagnostic means. One of the most practical points was to examine the patient at intervals and repeatedly before coming to any conclusion in doubtful cases. Since women differed greatly in anatomical peculiarities, such, for example, as the flexibility or eccentric enlargement of the cervix, it was necessary to reserve even a presumptive diagnosis until the patient had been seen on more than one occasion. He confessed that he had yet to make an *early positive* diagnosis by means of any of the early diagnostic signs, and had had to wait until time and other signs had made the diagnosis positive.

He had studied many cases for Hegar's and Braxton Hicks's signs, and believed that the personal equation of the examiner was an important factor, and that a

part which might feel soft one day might not at the next visit. Personally, he had not felt justified in concluding that there was thinning of the lower uterine segment without a rectovaginal examination. The sign of most practical help to him was that of the change in the shape of the uterus, presenting what was termed a jugshaped uterus. Though interested to study the signs pointed out by Dr. McDonald, particularly that in reference to flexibility, he believed it would be found that women differed in this as in other pelvic peculiarities, and that such individual peculiarities rendered such signs of varying degrees of value.

Dr. CHARLES P. NOBLE felt that at or before the tenth week the clinical signs mentioned seldom assisted in a definite diagnosis. The "jug sign" of pregnancy had been most helpful to him in the early diagnosis of pregnancy. In his experience Hegar's sign had been of little value before the twelfth week.

Dr. GEORGE M. BOYD emphasized the necessity of repeated examinations. Reference was made to two cases coming to his notice in which uterine and ectopic gestation had been confounded.

Pubiotomy.—Dr. RICHARD C. NORRIS reported a successful case of pubiotomy on a *tertiipara*, resulting in her first living child. The *conjugata vera* measured 8 cm. Through a small skin incision inside the pubic spine a Doederlein needle was passed, its tip brought under the pubic arch and out through the vulva, the labium having been firmly drawn to the median line. The bone was severed with the Gigli wire saw. A living child, weighing 7 pounds 14 ounces, was extracted with the forceps. An adhesive strip encircling the pelvis and a Bradford canvas frame bed assisted the convalescence. The patient left her bed and walked at the end of three weeks, and returned to her home a week later.

Dr. NORRIS suggested complete dilatation of the cervix and vagina with the Pomeroy bag and manual rotation of posterior positions at the brim before forceps extraction, to avoid the vaginal lacerations that had been reported as complications in the convalescence from pubiotomy. He discussed the anatomy and technique of the operation, and was inclined to believe that it would replace symphysiotomy and restrict the indications for the elective Cæsarean section. Hæmorrhage from injured veins and hæmatoma were the most important complications. The former could usually be controlled by a gauze packing, or might require the open method of operating, i. e., a free incision to the bone and ligation of cut vessels; the latter, if aseptic, had usually given no serious trouble. A hundred and thirty-two aseptic pubiotomies had had no maternal mortality.

Dr. CHARLES P. NOBLE had not done this operation, and personally saw no advantage in sawing through bone over cutting through the symphysis. Reference was made to the enthusiasm he had found in Europe concerning the operation. In Heidelberg, however, he had learned of a case of fatal hæmorrhage after the operation.

Dr. BARTON COOKE HIRST had had two pubiotomies during the last two weeks. In his first case he had had occasion for some enthusiasm, but the second had given him much trouble and anxiety. The first was that of a patient whom he had delivered five years before by the Cæsarean section. After etherization the cervix was dilated with Bossi dilators, a Pomeroy bag inserted, and the patient laid aside, and at the end of an hour and twenty minutes she was again anæsthetized and the operation done, resulting in the easy extraction of the child and the subsequent well being of both mother and child. Forty-eight hours later he had had an illustration of almost all the disadvantages of pubiotomy in a woman admitted to the maternity when she had been

in labor for thirty-six hours. The first disadvantage encountered was from the woman's obesity. There was a rachitic pelvis, the child was much over size, and the operation was attended with various other difficulties. Four days after delivery the woman showed symptoms of infection. She was now said to be recovering, but, to undertake the operation again, Dr. Hirst would demand the most ideal conditions of patient and surroundings. He believed that for the general practitioner, who must operate for insuperably obstructed labor, the Cæsarean section was the operation of choice.

Dr. NORRIS said he was not present to champion pubiotomy. He believed, however, from reports of cases all over the world, that the operation would have a field of usefulness. It avoided most of the difficulties and danger of symphysiotomy, it did not entail injuries to the urethra and bladder, and by the clear incision of bone primary union was secured and the opening of a joint avoided. Regarding hæmorrhage, he explained that, if bloodvessels happened to be behind the pubic bone and in the line of the saw, bleeding would surely occur, and he doubted whether any man could be sure that he would avoid injuring bloodvessels so placed. Such bleeding, however, was easily controlled. He was an ardent advocate of the Cæsarean section in the presence of its plain indication. In his experience at the Preston Retreat he had never found it necessary or desirable to do a Cæsarean section. He had found it desirable to do but one symphysiotomy and one pubiotomy in nearly 3,000 deliveries. With the Cæsarean section, in the hands of the general practitioner, he believed that the mortality would be much higher than with pubiotomy. He admitted that a case with the complications presented in Dr. Hirst's second case would lessen his enthusiasm, but believed that a complete dilatation of the vagina and cervix with a Pomeroy bag before a forceps operation, especially one requiring anterior rotation of the occiput from a posterior position, would aid in avoiding the vaginal laceration possible. He believed that the future would show that pubiotomy could often be done with greater satisfaction than symphysiotomy or the Cæsarean section. It seemed probable to him that it would wholly replace the former and bade fair to supplant the elective Cæsarean section.

Fibroma of the Uterus, with Low Hæmoglobin; Degenerating Fibroma of the Uterus.—Dr. GEORGE ERETY SHOEMAKER said that no arbitrary limit could be placed on the reduction of hæmoglobin beyond which hysterectomy was unjustifiable if it was demanded to save life. A uterus was shown, removed by supravaginal hysterectomy from a single woman, aged thirty-five, whose hæmorrhage had reduced her hæmoglobin to twenty-five per cent. Her mucous membranes were almost white. She had shortness of breath and tinnitus, and was subject to asthmatic attacks. The tumor, multinodular, interstitial, weighing about three pounds and a half, was hard and irregular, invading every portion of the uterus. Intravenous injections of salt solution were given during the operation, and great care in conserving the patient's temperature and attention to detail brought about a normal convalescence, the highest pulse being 98, and that immediately after the operation.

Another uterus was shown with a large intramural degenerating fibroma. The patient was only twenty-nine years old, but had been greatly debilitated, both by hæmorrhage and by the absorption of toxins from the tumor. The hæmoglobin was 62, and was therefore not the real index of the amount of systemic change. The tumor was grayish white, with area shading to dark gray. Macroscopically, it resembled sarcoma, but the microscopical report was that it was a fibroma.

Book Notices.

Diagnosis of the Nose and Throat. By A. HUGHES FERGUSON, M. D., Instructor in Diseases of the Nose and Throat in the Postgraduate Medical School and Hospital, New York. Series Edited by VICTOR COX PEDERSEN, A. M., M. D., Lecturer in Surgery at the New York Polyclinic Medical School and Hospital, etc. Philadelphia: Lea Brothers & Co., 1906. (Price, \$1.00.)

Dr. Ferguson's little book is practically a quiz compend with the questions gathered at the end of each chapter, and has all the advantages—with some of the drawbacks—inherent to presenting the entire subject of rhinology and laryngology in such a small compass. The work is well illustrated, the text clear cut and concise, and this brevity cannot fail to be of assistance to the student and graduate, for whom it is primarily intended. The paragraphs on treatment are unusually complete and instructive.

The Diagnosis and Treatment of Intussusception. By CHARLES P. B. CLUBBE, Honorary Surgeon to the Royal Prince Alfred Hospital, etc. London: Young J. Pentland, 1907. Pp. 92.

In this practical monograph the author very properly emphasizes the fact that intussusception and, indeed, all forms of intestinal obstruction are essentially surgical conditions. Attempts at reduction by inflation, irrigation, or oil injection, are at best dubious measures of relief from a modern standpoint, and if used at all should be tried only with the patient fully under an anæsthetic and with everything prepared for laparotomy if these rather discredited medical methods fail. Many useful suggestions are made as to the early diagnosis, which is the most important factor in successful surgical treatment, the operation is fully described, and in the appendix are included a large number of illustrative cases from the author's practice.

A Guide to Diseases of the Nose and Throat and Their Treatment. By CHARLES A. PARKER, F. R. C. S., Edin., Surgeon to the Throat Hospital, London. With 255 Illustrations. New York: Longmans, Green, & Co., 1906. Pp. xiv-624.

To acquire the necessary dexterity to examine a patient systematically, so as to overlook nothing, to recognize and put in its proper place the particular pathological condition found, and, finally but chiefly, to treat both the patient and the local abnormality successfully are, as the author says, the three most important objects of a course of study at a special hospital. Parker's book is founded on lectures given at the Throat Hospital, with this object in view. The main body of the work is preceded by several exceedingly practical chapters on the routine of examination, local applications, and local operative treatment. The discussion of the various diseases of the upper respiratory tract is full and succinct, and the illustrations are copious and in the main well executed. A more complete exposition of Kilian's method of removing foreign bodies from the trachea and bronchi would have been welcome.

Handbuch der Tropenkrankheiten. Unter Mitwirkung von Professor Dr. A. BÄELZ, Tokyo, et al. Herausgegeben von Dr. CARL MENDEL, Kassel. Dritter Band. Leipzig: Johann Ambrosius Barth, 1906. Pp. 818.

In this third and concluding volume of Professor Baelz's cyclopædic work on tropical medicine, there are considered in elaborate completeness amebic dysentery, trypanosomiasis, and other protozoan diseases, including those due to the recently studied varieties of spirochæta, tropical liver abscesses, black water fever,

Official List of Changes in the Stations and Duties of Certain United States Army and Navy Personnel.			
United States Army.			
India—Bombay	Mar. 19, 26	1	1
India—Calcutta	Mar. 2, 16	50	50
India—Madras	Mar. 19, 23	12	12
India—Rangoon	Mar. 9, 16	25	25
United States Navy.			
Hawaii—Honolulu	Apr. 19, 23	1	1
United States Marine Corps.			
Japan—Yokohama	Mar. 16, 23	98	77
Peru—Callao	Mar. 9, 16	1	1
Peru—Cuzco	Mar. 13, 16	1	1
Peru—Chilivaco	Mar. 1, 13	8	6
Peru—Lima	Mar. 1, 13	10	7
Peru—Mollendo	Mar. 13, 16	1	1
Peru—Punta	Mar. 1, 13	20	13
Peru—San Pedro and Pallas	Mar. 1, 13	1	1
Peru—Trujillo	Mar. 1, 13	18	11
Singapore—Singapore	Mar. 2, 9	1	1
Russia—Chernostadt	Mar. 20, 23	1	1
United States Imperial Institute.			
Brazil—Para	Mar. 16, 23	1	1
Brazil—Pernambuco	Mar. 1, 28	1	1
Brazil—Rio de Janeiro	Mar. 16, 23	9	6
China—Antofagasta	Mar. 16, 23	12	25
China—Santiago	Feb. 21, Mar. 2	24	24
China—Hongkong	Mar. 2, 9	1	1
Egypt—Assiut Province	Mar. 23, 27	1	6
Egypt—Gizeh Province	Mar. 23, 27	3	2
Egypt—Kenek Province	Mar. 20, 27	27	20
India—General	Mar. 19, 26	58,000	19,140
India—Bombay	Mar. 19, 26	653	152
India—Calcutta	Mar. 2, 16	153	153
India—Rangoon	Mar. 9, 16	72	72

Public Health and Marine Hospital Service:

Official List of Changes in the Stations and Duties of Certain United States Army and Navy Personnel. *Official List of Changes in the Stations and Duties of Certain United States Public Health and Marine Hospital Service for the seven days ending April 24, 1907.*

BAILEY, C. W., Acting Assistant Surgeon. Granted leave of absence for one day, April 23, 1907.

BOGESS, J. S., Passed Assistant Surgeon. Directed to proceed from St. John, N. B., to Quebec, Canada, for duty in connection with the examination of alien immigrants.

BULLARD, J. T., Acting Assistant Surgeon. Granted leave of absence for nine days, from March 23, 1907, on account of sickness.

CARRINGTON, P. M., Surgeon. Detailed to represent the Service at the meetings of the National Association for the Study and Prevention of Tuberculosis, and the Twenty-fourth Annual Meeting of the American Climatological Association, to be held in Washington, D. C., May 6 to 9, 1907.

FISH, ERWIN L., Pharmacist. Directed to proceed to Evansville, Ind., reporting to the medical officer in command, for duty and assignment to quarters.

FOSTER, S. B., Acting Assistant Surgeon. Granted leave of absence for six days, from April 19, 1907.

HORDY, W. C., Passed Assistant Surgeon. Directed to proceed to San Francisco, Cal., for special temporary duty, upon completion of which to rejoin station.

KEATLEY, H. W., Acting Assistant Surgeon. Granted leave of absence for three days, from April 16, 1907, under paragraph 210 of the Regulations.

LAVINDER, C. H., Passed Assistant Surgeon. Granted leave of absence for one month, from April 24, 1907.

ONUF, B., Acting Assistant Surgeon. Granted leave of absence for two days, from April 10, 1907, on account of sickness.

SCHUG, F. J., Acting Assistant Surgeon. Granted leave of absence for fifteen days, from May 3, 1907.

SCHWARTZ, LOUIS, Acting Assistant Surgeon. Granted leave of absence for four days, from April 7, 1907, on account of sickness.

Appointments.

Mr. Erwin L. Fish appointed a pharmacist of the third class.

Board Convened.

A board of medical officers was convened to meet at Galveston, Texas, on April 22, 1907, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: Passed Assistant Surgeon G. M. Corput, Chairman; Acting Assistant Surgeon William H. Gammon, Recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Certain United States Army and Navy Personnel. *Official List of Changes in the Stations and Duties of Certain United States Army and Navy Personnel.*

BARNEY, C. N., First Lieutenant and Assistant Surgeon. Ordered to proceed to Denver, Colo., for physical examination, and upon conclusion thereof to return to his station.

BYRNE, C. B., Colonel and Assistant Surgeon General. Relieved from duty in the Philippines Division, to take effect at such time as will enable him to comply with this order, and will proceed on transport to sail from Manila about July 15, 1907, to San Francisco, Cal., and upon arrival will report by telegraph to the Adjutant General of the Army for further orders.

DAVIDSON, W. T., Captain and Assistant Surgeon. Detailed as a member of the Army Retiring Board, to meet at Denver, Colo., by paragraph 12, S. O. 122, May 22, 1907, War Department, vice Captain George P. Heard, assistant surgeon, hereby relieved.

HEARD, G. P., Captain and Assistant Surgeon. Will proceed from Fort Wingate, N. M., to Fort Huachuca, Ariz., for duty as a member of a board of officers to examine candidates for admission to the U. S. Military Academy.

IVES, F. J., Major and Surgeon. Relieved from duty in the Philippines Division, and will proceed from Manila, about June 15th, to San Francisco, Cal.; thence to the Presidio of San Francisco, Cal., for duty at that station.

KENDALL, W. P., Major and Surgeon. Relieved from duty in the Philippines Division and will proceed from Manila, about June 15th, to San Francisco, Cal.; thence to Fort Myer, Va., for duty at that station.

LYSTER, W. J. L., Captain and Assistant Surgeon. Will proceed from Fort McIntosh, Texas, to Fort San Houston, Texas, for temporary duty.

MAUS, L. M., Lieutenant Colonel and Deputy Surgeon General. Relieved from duty as chief surgeon, Department of Texas, and ordered to proceed to San Francisco, Cal., and take transport to sail from that place on July 5th, 1907, for the Philippine Islands; upon arrival at Manila ordered to report to the commanding general, Philippines Division, for assignment to duty.

MOSELEY, E. B., Colonel and Assistant Surgeon General. Will report in person to Brigadier General William P. Hall, adjutant general, president of the Army Retiring Board, appointed by paragraph 8, S. O. 239, October 9, 1906, War Department, at such time as he may designate for examination by the board; upon completion of his examination will return to the place of receipt by him of this order.

NEWGARDEN, G. J., Major and Surgeon. Retired from active service on account of disability incident thereto, on April 21, 1907.

O'CONNOR, R. P., First Lieutenant and Assistant Surgeon. Ordered to proceed from Fort Leavenworth, Kas., April 29, 1907, to Fort Crook, Neb., for temporary duty.

RHOADS, T. L., Captain and Assistant Surgeon. Granted leave of absence for one month, effective about May 1, 1907.

SHAW, H. A., Major and Surgeon. Left Fort Slocum, N. Y., with recruits en route to San Francisco, Cal.

STARK, A. N., Major and Surgeon. Relieved from duty in the Philippines Division, to take effect on June 15th, and upon expiration of his leave of absence, will proceed to Vancouver Barracks, Wash., for duty at that station.

SWEAZY, V. E., Captain and Assistant Surgeon. Granted thirty days' leave of absence, effective about May 20, 1907.

WINTER, F. A., Major and Surgeon. Relieved from duty in the Philippines Division, and ordered to proceed from Manila about June 15th to San Francisco, Cal.; thence to Fort Myer, Va., for duty at that station.

The following named medical officers have been relieved from duty in the Philippines Division and will proceed on the transport to sail from Manila about July 15, 1907, to San Francisco, Cal.; upon arrival will report by telegraph to the Adjutant General of the Army for orders:

BANTA, W. P., Captain and Assistant Surgeon.

FIELD, P. C., Captain and Assistant Surgeon.

YOST, J. D., Captain and Assistant Surgeon.

The following named medical officers are relieved from duty in the Philippines Division, to take effect at such time as will enable them to comply with this order, and will proceed on the transport to sail from Manila on or about July 15th, to San Francisco, Cal.; thence to the posts designated after their respective names and report to the commanding officers thereof for duty:

FISHER, H. C., Major and Surgeon, Fort D. A. Russell, Wyo.

KULP, J. S., Major and Surgeon, Fort Meade, S. Dak.

SHILLOCK, PAUL, Major and Surgeon, Fort Robinson, Neb.

The following named medical officers are relieved from duty at the posts designated after their respective names, to take effect at such time as will enable them to comply with this order, and will proceed at the proper time to San Francisco, Cal., and take transport to sail from that place about June 5, 1907, for the Philippine Islands; upon arrival at Manila will report in person to the commanding general of the Philippines Division for assignment to duty.

EDGER, B. J., JR., Captain and Assistant Surgeon. Fort Reno, Okla., to accompany the 26th Infantry from Fort Sam Houston.

FULLER, L. A., Captain and Assistant Surgeon. U. S. Military Prison, Fort Leavenworth, Kas.

LYSTER, W. J. L., Captain and Assistant Surgeon. Fort McIntosh, Texas, to accompany the 26th Infantry from Fort Sam Houston, Texas.

RENO, W. W., Captain and Assistant Surgeon. Fort Riley, Kas., to accompany the 10th Cavalry from Fort Robinson, Neb.

RHODES, T. L., Captain and Assistant Surgeon. Fort Crook, Neb.

ROBBINS, C. P., Captain and Assistant Surgeon. Fort Ethan Allen, Vt.

SKINNER, G. A., Captain and Assistant Surgeon. Fort William Henry Harrison, Mont.

SMITH, A. M., Major and Surgeon. Fort Douglas, Utah.

SNYDER, H. D., Major and Surgeon. Fort Sam Houston, Texas.

WILSON, J. S., Captain and Assistant Surgeon. Fort Oglethorpe, Ga., to accompany the 26th Infantry from Fort Sam Houston, Texas.

WYETH, M. C., Major and Surgeon. Fort Wadsworth, N. Y.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending April 27, 1907:

ASSERSON, F. A., Passed Assistant Surgeon. Detached from the *Columbia*, when placed out of commission, and ordered to the *Kansas*.

BAKER, M. C., Acting Assistant Surgeon. Detached from the Navy Yard, Norfolk, Va., and ordered to duty at the Naval Hospital at that place.

FIELD, J. G., Surgeon. Detached from duty with the Marine Recruiting Party at Dallas, Texas, and ordered to duty with the Marine Recruiting Party at Houston, Texas.

JONES, R. L., Assistant Surgeon. Orders of March 29th modified; ordered to the *Milwaukee*.

KENNEDY, J. T., Passed Assistant Surgeon. Detached from the *Hancock* and ordered to attend a course of instruction at the Naval Medical School, Washington, D. C.

MAY, H. A., Assistant Surgeon. Ordered to the Navy Yard, Norfolk, Va.

RANDELL, R. C., Assistant Surgeon. Detached from the *Maine* and ordered to the *Connecticut*.

CLARK—HARPER.—In Washington, D. C., on Wednesday, April 17th, Dr. William Earl Clark and Miss Mary Amelia Harper.

COLLIN—FLINT.—In Philadelphia, on Wednesday, April 24th, Dr. Samuel W. Collin and Miss Beatrice Flint.

DAWSON—MUSHAT.—In Birmingham, Alabama, on Wednesday, April 3rd, Dr. Robert Dawson and Miss Theresa Mushat.

GILMORE—SLOAN.—In Scranton, Pennsylvania, on Saturday, April 20th, Dr. Thomas Joseph Gilmore, of Williamsport, and Miss Mary Lyle Sloan.

NEALON—ROAN.—In Wilkes-Barre, Pennsylvania, on Wednesday, April 17th, Dr. James M. Nealon and Miss Margaret Roan.

Died.

AUGUSTIN.—In New York, on Wednesday, April 24th, Dr. Lardy Augustin, aged forty-five years.

BLANCHARD.—In Delavan, Wisconsin, on Friday, April 19th, Dr. Charles Blanchard, aged sixty-three years.

BUTTERFIELD.—In Binghamton, N. Y., on Thursday, April 18th, Dr. Alfred J. Butterfield.

CROWELL.—In Minneapolis, Minnesota, on Tuesday, April 16th, Dr. Eton B. Crowell.

CURRIER.—In San Francisco, California, on Tuesday, April 16th, Dr. C. B. Currier.

FLETCHER.—In Orlando, Florida, on Thursday, April 25th, Dr. W. B. Fletcher, of Indianapolis.

HALE.—In Blenheim, South Carolina, on Thursday, April 18th, Dr. Richard W. Hale, aged seventy-three years.

JONES.—In Washington, D. C., on Friday, April 5th, Dr. Edward Salmon Jones.

LEAMING.—In Cape May, N. J., on Thursday, April 25th, Dr. Jonathan F. Leaming, aged eighty-five years.

MARTIN.—In Philadelphia, on Thursday, April 11th, Dr. Robert Wilkie Martin.

MATTISON.—In Minnetonka, N. Y., on Monday, April 22nd, Dr. Charles D. Mattison, aged thirty-five years.

MICHELL.—In Montgomery, Alabama, on Friday, April 19th, Dr. R. F. Michell, aged eighty years.

MILLS.—In Newark, N. J., on Sunday, April 21st, Dr. Andrew M. Mills, aged thirty-six years.

MOORHOF.—In Vienna, Austria, on Saturday, April 26th, Professor Albert von Mosetig-Moorhof, aged sixty-nine years.

PINNELL.—In Grafton, West Virginia, on Monday, April 15th, Dr. D. S. Pinnell, aged sixty-four years.

RANDOLPH.—In Charlottesville, Virginia, on Saturday, April 26th, Dr. Nelson C. N. Randolph.

SMITH.—In Hollidaysburg, Pennsylvania, on Monday, April 22nd, Dr. George W. Smith, aged seventy-three years.

SMITH.—In Brookfield, Connecticut, on Monday, April 22nd, Dr. Junius F. Smith, aged forty-two years.

STROTHER.—In Lee's Summit, Missouri, on Sunday, April 21st, Dr. William D. Strother, aged eighty years.

TAYLOR.—In Cleveland, Ohio, on Friday, April 19th, Dr. Cassie A. Taylor.

TAYLOR.—In Glasgow, Kentucky, on Monday, April 22nd, Dr. J. F. Taylor.

THOMPSON.—In Ada, Grant Parish, Louisiana, on Tuesday, April 16th, Dr. C. C. Thompson, aged eighty years.

TINSLEY.—In Augusta, Georgia, on Tuesday, April 16th, Dr. Austin S. Tinsley.

WARE.—In Greenville, South Carolina, on Wednesday, April 24th, Dr. James H. Ware, aged ninety-two years.

WARE.—In Salem, N. J., on Saturday, April 20th, Dr. John Ware.

WARREN.—In Quincy, Illinois, on Tuesday, April 16th, Dr. A. H. Warren, aged seventy years.

WEBSTER.—In Norfolk, Virginia, on Thursday, April 25th, Dr. Frank P. Webster, aged fifty-four years.

WILSON.—In Cheraw, South Carolina, on Wednesday, April 17th, Dr. J. J. Wilson, aged eighty-eight years.

YOUNG.—In Bordentown, N. J., on Friday, April 26th, Dr. I. D. Young, aged eighty-two years.

Births, Marriages, and Deaths.

Married.

CHAMBERS—WOLFER.—In Stillwater, Minnesota, on Thursday, April 18th, Dr. Winslow C. Chambers and Miss Gertrude M. Wolfer.

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Original Communications.

ON CHRONIC MUSCULAR DISEASES OF THE HEART AND THEIR TREATMENT.*

BY THEODOR SCHOTT, M. D.,
Bad-Nauheim, Germany.

In consequence of the clinical experiments of Weber, Ludwig, Goltz, etc., too much attention was paid to the action of the nerves upon the heart, during the middle of the last century, it being then believed that the whole action of the heart was dependent upon the influence of the nerves. Moreover new investigations like those of Kronecker, who found a coordination centre in the upper part of the septum, and the experiments of Cyon seemed also to tend toward this conclusion.

Then came the observations of His, Romberg, and Krehl showing that the embryonal heart exhibits movements at a period when, with our present resources, neither ganglion cells nor nerve tissue can be discovered. In other words the heart possesses a much greater degree of autonomy than had been previously accorded to it. And this doctrine has found support in recent years by anatomical investigations and physiological experiments.

W. His was the first to discover the fasciculus of muscular fibres, which bears his name, and which constitutes the connection between auricle and ventricle. Stanley Kent found that at certain places in the mammalian heart there were connecting fibres between the muscular fibres of the auricle and ventricle. These connecting fibres consist of a peculiar variety of muscle cells. Besides, he discovered muscular connections in the auriculoventricular suture by means of granulated cells of cylindric or irregular forms radiating from the fibrous tissue to the muscular fibres which lead to the auricle as well as to the ventricle. Recently the investigations of Tawara have further developed those of Stanley Kent, as he shows that muscular fibres from the auricle pass deeply into the muscular wall of the ventricle.

And also the physiological experiments of Gaskell, Bowditch, and principally those of Engelmann prove with absolute certainty that the cardiac muscle itself is of a much greater importance than it has previously been considered. Although the fact remains that the nerve fibre and ganglion cells have the greatest influence upon the action of the heart these experiments and investigations have resulted

in drawing greater attention to the muscular diseases of the heart.

In previous time one took more notice of the diseases of the cardiac valves and the development of valvular lesions, while now from the pathologico-anatomical as well as from the clinical standpoint the muscular diseases of the heart have come more into prominence.

At first we have to draw attention to the publication of Weigert, who proved that sclerosis of the coronary vessels leads to myocarditis. This important fact, which is universally accepted, is for that reason of primary importance, as the greater portion of the fibrous changes of the cardiac wall are dependent upon it. In addition to this there come still those cases of chronic myocardial degeneration caused by syphilis and other infectious diseases. Under the latter it seems to me that influenza is also capable of causing myocardial changes. I have seen cases which could be considered from a clinical point of view only as myocarditis, which had developed directly after influenza and for which there was no other ætiology for the development of the cardiac disease. A large contingent of cases are those, caused by fatty metamorphoses in which we distinguish three forms, viz.: (1) The fat is deposited around the heart; (2) the fat grows interstitially through the heart; and (3) fatty degeneration proper.

Of special importance, however, as has been shown by Krehl, Romberg, and others, are those cases in which, as the result of disturbances of compensation in valvular disease, fatty degeneration of the muscle of the heart ensues. They are probably of more frequent occurrence than has been so far believed. If such is the case the intimate connection between valvular and muscular diseases receives striking confirmation. Besides the progressive degeneration, especially noticeable in typhoid, some other changes of the muscle of the heart have been noted, viz.: those which follow acute infectious diseases, or are contingent to the general marasmus of aged people, in the form of fragmentation of the muscular substance, and also in morbid changes of the interfibrillary cementing of the muscular apparatus. These researches, however, still require confirmation, as some of them have proved to be simple post mortem changes of structure. Those changes of the muscle of the heart, which arise from excess in alcohol, or tobacco, through eating too much meat, in the progress of the gouty diathesis, also in cases of chronic kidney diseases, have long been the subject of discussion; and even if, from a clinical point

* Read before the Medical Department of the University of Pennsylvania, in Philadelphia.

of view, their connection has been proved, the question is still undecided whether the changes of the valvular tissues be primary and the changes in the muscles secondary. Another not less vexed question is, as was first pointed out by Peacock, whether heart disease can arise from over exertion. I believe that by experimental researches which I made years ago on perfectly healthy subjects (e. g., when wrestling up to the induction of dyspnoea) I proved that great exertion was capable of causing dilatation of the heart. These observations were afterward confirmed by Zuntz on animals. From the effect of such sustained stretching, or rather overstretching of the muscle of the heart, but one step more is required to produce an example of the effect of chronic over exertion with all its consequent symptoms. In confirmation of that proposition it would be possible to quote quite a number of cases.

Old age of itself, as we know, involves increasing liability to change of tissue in general, as well as of the muscles of the heart; but even in youth, for instance, through too rapid growth, or errors of habit of life, and very especially as the result of masturbation, grave conditions may arise; in middle life, also, muscular disease of the heart often follows excesses, and it is well known how often the "change of life" in women is liable to be a special cause of fatty heart. And lastly we must not forget how often heredity plays a predominant part in the causation of cardiac muscular disease. I must not enter into too great detail on the subject of chronic muscular disease, but I need hardly point out that it is impossible to speak of a general prognosis, as cases differ so completely in regard to their severity, their progress, and the extent to which they are amenable to curative proceedings. We are obliged, in fact, to base our opinion on a careful consideration of each individual case.

Whatever the differences in ætiology, in special processes of change in the substance of the muscle of the heart, and the collateral symptoms in the several cases alluded to, one fact is common to all, the final incapacity of the heart to perform its work, which is commonly defined as "muscular insufficiency." This latter condition generally follows chronic myocarditis, be it with or without symptoms of angina pectoris, whether consequent to fatty changes of the heart, with or without valvular lesions, or whether it follow over exertion or to the changes due to chronic poisoning through such substances as alcohol or nicotine.

To deal effectually with such conditions is the paramount object of our medical treatment, from whatever cause they may have arisen. All other points of collateral therapy are subsidiary.

In former years apart from a few dietetic prescriptions one confined oneself to two remedies, namely, rest and digitalis. The amount of pharmacological knowledge has, however, latterly grown considerably. *Strophanthus* (Fraser), *sparteine* (Germain Sée), *adonis vernalis* (Altmann), *convallaria majalis* (Rolkin), *cactus grandiflorus*, and a whole list of other medicaments have been used for the removal of compensational disturbances, without our having succeeded in finding a reliable substitute for digitalis. And since we have learned in cases in which the stomach cannot retain that remedy, to give it or its alkaloid, digitalin, by sub-

cutaneous injection or per rectum, its dominant position among medical remedies has grown more and more. However sovereign a remedy digitalis may be among medicaments, one still has to take into consideration, that apart from those cases in which it has no, or only a partial effect or in which an angina pectoris predominates, digitalis might be a dangerous, and above all a cumulative remedy. In the treatment of fatty degeneration of the heart, salts of iodine play a great rôle. In my lecture delivered at the International Congress in Rome, 1894, concerning the treatment of fatty heart, I pointed out the danger of halogen salts. Latterly, they have been replaced by a preparation of thyreoidin. One can, however, not be sufficiently warned against its doubtful effect. I have, in the last years, seen a not unconsiderable number of patients, most of them female patients, who in the course of their cure with thyreoidin, have suffered, quite apart from their having lost weight, from a more or less detrimental influence upon nerves and circulation, and were thus exposed to dangerous symptoms which lasted long after the use of the remedy had ceased. Attacks of mania I myself have not seen in the course of the cure with thyreoidin, but they have been observed on very trustworthy authority, so that their occurrence in connection with the use of thyreoidin cannot be doubted.

Much more favorable results attend the use of the salts of iodine in cases of muscular changes of the heart occurring in the course of morbus Basedowii, and especially in angina pectoris; and I prescribe without exception the somewhat weaker, yet more harmless, sodium iodide. Stenocardia is also very favorably influenced by sodium iodide. It would, however, be a great mistake to think, as many do, that therefore stenocardia arise from a syphilitic lesion, for even where a specific taint has been excluded with almost absolute certainty, we see that iodine retains its antispasmodic effect. In other cases a quick and sure cessation of pain is brought about by amyl nitrite, and above all by nitroglycerin, which latter, as I have already shown, can be given in much larger doses than hitherto has been the case. At the present time, especially where these last mentioned remedies have failed, erythrol tetranitrite has been exhibited, but it has yet to be proved whether its use is more or less valuable than the afore mentioned remedies in stenocardiac attacks.

The value of narcotics, especially of morphia, and the care with which they ought to be employed have been so clearly indicated by myself and others that it is not necessary to make further allusion to them. From time to time, though on the whole much less frequently than in former years, anti-pyrine, acetphenetidin, acetanilide, and similar preparations have been used, and undoubtedly with the effect of affording some relief in paroxysms of pain in stenocardiac attacks. But considering that their influence is more or less doubtful, that they are liable after a time to lose their effect, and that during the use of these drugs a condition of collapse has frequently occurred, it will be apparent that they should be taken only under most careful medical supervision.

The so called physical methods of treatment of chronic cardiac muscular diseases have gained

ground more especially of late, and have, so to say, become the common property of the medical world. We understand that term to apply to a therapy mainly mechanical, balneological, and dietetic.

Commencing with the latter point, and apart from the special consideration of the treatment of the fatty heart, the taking of nourishment is to be regulated in the same way as in other chronic cardiac diseases. Irritating food, and such as is likely to cause flatulence or difficulty of digestion, and all overloading of the stomach, should be avoided. The patient should take small quantities of food, at frequent intervals, for all increase of the intra-abdominal pressure, all pressing up of the diaphragm and consequent compression of the lungs, pushing the heart out of its place, that is, upward and outward, increases the difficulty with which the



FIG. 1.—Angina pectoris during an attack.

work of the heart is performed, and accelerates the weakening of its muscle. But such considerations should not lead to the insufficient nourishment of patients suffering from cardiac disease with the idea that the work of the heart is thus relieved. Such patients are sufficiently exposed to the danger of collapse. Those who have the opportunity of observing large numbers of those suffering from heart trouble who have become weak and miserable, chlorotic, anæmic, and hydræmic, and have experienced how great is the difficulty of once more building up these patients, will congratulate themselves if they succeed, not only in maintaining the existing measure of strength, but also in accumulating a stock to serve the purpose of a reserve. Indeed, even in the treatment of a fatty heart, it is to be carefully observed that neither a too rapid, nor according to the percentage of bodily weight, too great loss be allowed to occur, otherwise, with the fat, the substance also of the muscle may disappear. The muscle of the heart, although it may indeed lose a part of its surrounding and interstitial fat, will the sooner undergo the process of fatty degeneration and incur its serious consequences.

And now concerning what to drink. It is of course self-evident that the consumption of a large quantity of fluid at one time is to be avoided lest over distension of the stomach be induced. I need only to point out that it is better to avoid efferves-

cent drinks, and that stimulants in the form of small quantities of wine (old Rhine wine is in such cases to be preferred) as well as whiskey and brandy are at times necessary. Severe restrictions in the quantity of fluid must be avoided, as loss of appetite, disturbances in the stomach, or irritating symptoms of different kinds, might ensue. The presumption that restrictions in the taking of fluids are able rapidly to change the composition of the blood has been shown to be confuted. Oertel has already been contradicted by Basch, Leichtenstern, Ewald, Bamberger, Th. Schott, Germain Sée, Lichtenheim, and others. In recent time experiments by Stintzing on the amount of residual ash in the blood, as well as a detailed work by Maxon have shown that the amount of water in the blood is not increased in chronic cardiac disease. The last named author rather confirms the statement of Bamberger, that if there be no kidney complication present, the amount of water in the blood in cases of heart disease is rather below normal. An exception holds good only in those cases in which cardiac disease is connected with chlorosis and anæmia. Here the amount of albumin in the blood is deficient, while the amount of water in the whole amount of blood is in excess. In all other cases the proportion of albumin, and with it the amount of hæmoglobin are rather increased. Moreover the composition of the blood is practically a factor of considerable constancy.

The balneological treatment of patients suffering from disease of the cardiac muscle, as was first shown by my late brother, August Schott, and myself, has to begin with weak and always carefully controlled thermal saline baths, containing carbonic acid. For a lower percentage of such patients the strongest form of the so called effervescent flowing baths is very beneficial. On many occasions we have demonstrated this method of treatment and the marked success which attends it; and we have given proof that the effect of the baths is very similar to that of gymnastics, indeed, almost identical. The difference is merely that what the baths do by means of the sensory nerves the therapeutical exercises do through the motor nerves.

The mechanical treatment presents itself under three different forms: Climbing exercises according to the teaching of Oertel; the Zander treatment by machinery; and the treatment by exercises with resistance and self-resistance as taught by my brother August Schott and myself. It is certain that, although the chief impulse towards this line of treatment was due to the labors of Oertel, the *Terrainkur* which he advocated is only fit for a limited number of patients suffering from heart disease. It is most effective in the case of fatty heart in a young patient with normal muscular strength and quality of blood. In such cases it has been used with the best results. In the fatty heart of later life, however, or in connection with other complaints, cardiac or others, the greatest caution should be observed. Climbing exercise has in such cases often proved to be a most dangerous remedy, and especially in complicated forms of chronic muscular disease of the heart, whether associated or not with valvular troubles. In such cases, as I have already more minutely explained, such a therapy averts too much from the muscle of the heart, and

should only be applied where the muscle of the heart, through the agency of other means, has already gained so much strength as to be able to undertake without risk such additional work as climbing exercise involves.

The mechanical treatment best known as that of Zander (all others are practically of little account) employs machinery, very cleverly constructed for the practice of both active and passive exercises. Apart from the fact that the general availability of these machines must on account of their great cost be confined to towns, and that their use is therefore limited to time and place, there remains the consideration that they also need constant medical control. Moreover they present the great disadvantage that their measure of resistance cannot be sufficiently individualized, because the machine is not able to replace the directing human mind.

In our system of therapeutical exercises the resistance is given either by an operator or is self-imposed by bringing antagonistic muscles into action. We have shown the application of this treatment, its influence, and its results. The steadily increasing use of our gymnastic method, with or without the assistance of balneological therapy, has commended itself during the last twenty years to a large number of medical men in most countries who have confirmed by their expressed view the esteem in which they hold this special method of treatment, and the useful results which they have seen to accrue therefrom. The pulse ravings of Case I and II show clearly the effect of the exercises with resistance and of the baths respectively. But although we may agree on these successful results, we naturally are not yet agreed as to the rapidity and manner of its influence upon the muscle of the heart, that is to say opinions are very much divided on these points. No doubt also the baths and gymnastics have been occasionally employed without due consideration, and harm has been done, notwithstanding that I have often specified classes of cases which offer a contraindication for the balneological and gymnastic treatment. They are principally those in which intracardial rise of blood pressure, such as is caused by the use of baths or gymnastics, however temporary it be, is to be strictly avoided. To this category belong all cases of aneurysm of the heart, and of the larger vessels, also those diseases of the heart in which apoplexy and embolism are to be feared, and above all those in which far advanced arteriosclerosis coexists.

In recent years by means of radiography I have endeavored to make clear the effect of baths and exercises upon the heart. I know very well, and I have mentioned it also in my publication on the treatment of chronic diseases of the heart, that the investigations by means of Röntgen rays including orthodiagraphy are not yet satisfactory. In making these experiments it was essential to have the patient in exactly the same position for the second exposure which I effected by means of supports on both sides, front and back, the head also held firmly, and the position of the feet fixed. My method of pasting round lead pieces on the nipples has since been widely used and demonstrates clearly whether the position has been changed or not. I consider the change of contour of the heart of greater im-

portance than its absolute size. This change of the contour can be detected by percussion as well as by skiagraphy. Also the results we gain by means of the fluorescent screen do not greatly differ from those gained by radiography. The differences lie in the fact that by the fluorescent screen we observe immediately these changes, whilst necessarily some time must elapse before we obtain the results of the skiagram. I shall present in outline here a few cases.

CASE I.—I consider this case of a special interest as it gave me the opportunity to observe and to study the effect of our exercises with resistance just at the time of a stenocardiac attack.

P. B., forty years of age, formerly a waiter, later for many years a publican, has taken large quantities of beer and wine (pure or mixed with a great deal of soda water); also at times smoked considerably.



FIG. 2. Angina pectoris after thirty minutes' exercises with resistance.

Serious illnesses, he says, he has never had. Seven years ago the first attack of gout appeared. They recurred from time to time in the joints of the great toes, and in the joints of the feet and knees. A few weeks ago he developed a tophus on the left elbow. The last attack of podagra occurred a fortnight ago. A year and a half ago, during a bicycle excursion he suddenly felt oppression in the region of the heart. By degrees shortness of breath and palpitation developed; the oppression in the chest increased, and he experienced pains in the left arm down to his fingers. If an attack occurred in the street, and that generally happened in cold or foggy weather, he was obliged to stop. His family doctor had found a considerable dilatation of both ventricles. The urine showed a specific gravity of 1.015, traces of albumin, but no casts. On examination I noted the following: Pulse was small and quick, a little arrhythmic, from time to time pulsus alternans. Tube of the radial artery could not be felt. Heart was much dilated on both sides; heart sounds were clear, the second sound near the apex a little accentuated.

Diagnosis: Dilatation of both ventricles, commencing degeneration of cardiac muscle, angina pectoris, uric acid diathesis. It happened that during my first examination with Röntgen rays he developed an attack of angina pectoris. The radiogram (Fig. 1) showed the actual condition of the heart during the attack. The dilatation of the left ventricle as well as the marked dilatation of the left auricle was beautifully shown. The second skiagram showed distinctly

the effect of the therapeutical exercises which I made with the patient—of course with very mild resistance—for twenty minutes. The dotted line gives you the difference shown by the fluorescent screen.

This case I observed and examined together with his physician for the following one and one half years. During this time he underwent twice a course of bath and gymnastic treatment in Nauheim and continued during the winter the resistance movements. After a

to 12 glasses of beer daily, several liqueurs, a great deal hot rum and water, and ten to twelve cigars). Two years ago some oppression was felt from time to time in the region of the heart, which increased slowly but steadily. The attacks became more frequent and also caused pain in the region about the middle of the sternum. At the same time dyspnoea appeared when he walked quickly. Besides he complained of various nervous sensations, above all of a kind of agoraphobia

(could not walk across a bridge). In the autumn of 1895, after a long march across stubble, and getting wet through to the skin, the pressure on the chest became more severe and since then did not leave him.

Examination showed a marked extension of the cardiac dulness toward the right, also a little on the left; the apex beat could just be felt in the nipple line, but a loud systolic murmur was audible at the apex. Second sound of the pulmonary artery was a little accentuated, pulse 82, pulse wave not always equal; radial artery was more perceptible than normal, but not exactly hard. The sphygmograph showed distinctly the rigidity of the arteria radialis, pressure of the pulse 180 millimetres (according to Basch). The diagnosis was the following: Insufficiency of the mitral valve with dilatation of both ventricles, principally the right, commencing arteriosclerosis, angina pectoris, neurasthenia.

Treatment was begun with gentle exercises with resistance, the force of

long bicycle tour and once after drinking a large quantity of cold beer he experienced a slight anginal attack, otherwise he walked for hours on level ground and could also climb moderately without any disagreeable sensation.

CASE II.—Military officer, single, forty-four years old. Suffered in his twenty-first year for the first time with acute muscular rheumatism. In his thirty-third and thirty-ninth year it again appeared. During the last attack it was stated that he suffered from heart disease. Syphilis he denied ever having had, but he confessed to have taken formerly a large quantity of alcohol, and also to have been a very great smoker (10

which was increased by small degrees. After two weeks there was an improvement in his whole state of health; above all there was a cessation of the oppression in the chest.

For four years I had the opportunity to watch the patient, examining him not only in the summer during his annual visit to Nauheim for treatment, but also from time to time in consultation with his family physician during the winter. In March, 1896, a very severe capillary bronchitis aggravated his condition in such a manner as to produce intense dyspnoea and intensive oedema of the legs. Nevertheless we succeeded by means of gymnastics and massage in rendering him

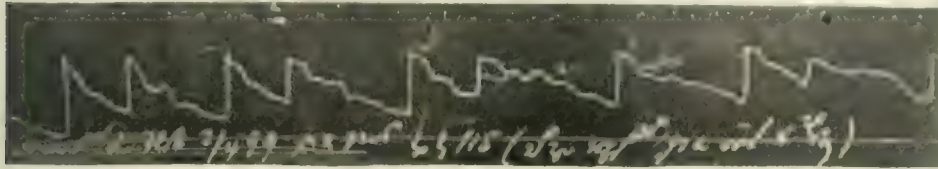


FIG. 3, CASE I.—Pulse tracing before exercises.

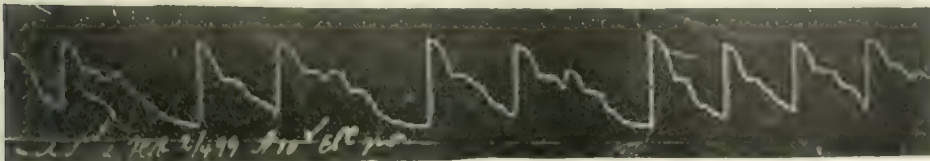


FIG. 4, CASE I.—Pulse tracing after ten minutes' exercise with resistance.

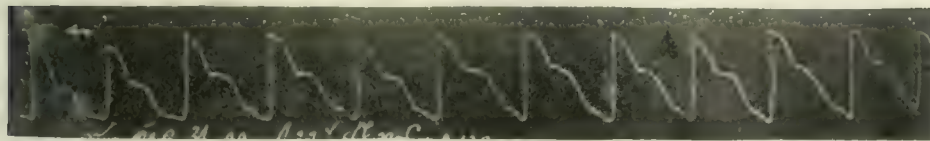


FIG. 5, CASE I.—Pulse tracing after twenty two minutes' exercise with resistance.

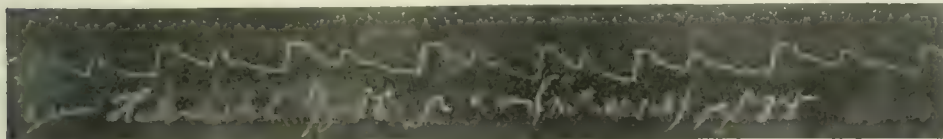


FIG. 6, CASE II.—Pulse tracing at beginning of cure.

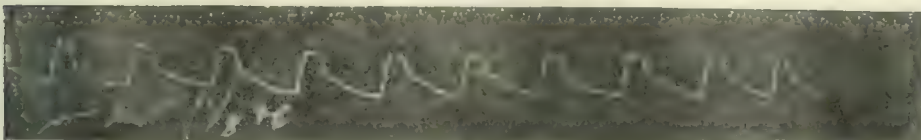


FIG. 7, CASE II.—Pulse tracing after eight thermal baths.



FIG. 8, CASE II.—Pulse tracing after the first effervescent (sprudel) bath.

capable again of performing his duties. This he was able to continue for three years, until the development of a double pleuropneumonia caused his death.

CASE III.—Officer, H., fifty years old. In 1872 polyarthritis rheumatica acuta attacked him, followed by frequent relapses, he had a life full of excitements and worry and confessed *abusus spirituosorum*. His occupation required him to travel extensively by rail and also to take exhausting walks. Patient had complained for some years from time to time of pains in the lower third of the sternum; often gasping for breath, which signs disappeared upon administration of digitalis. Typical anginal pains appeared four years previously. The pains radiated from the sternum down to the fingers of the left hand. He was obliged to stop in his walking because of the severe anginal pains. Recently the attacks returned more frequently accompanied by vertigo. For some weeks he had had constant sensation of weakness and giddiness, and complained of broken rest. Potassium iodide prescribed by a nerve specialist proved utterly ineffectual.

By inspection one readily observed a strong pulsation of both carotids. The radial wall was just per-



FIG. 9. Aneurysm aorta. The straight line represents the outline of the aorta before exercises, and the dotted line after exercises. The two black dots indicate the lower margin of the scapula.

ceptible; pulse was arrhythmical, volume irregular. Over the middle of the sternum and in the second right intercostal space a strong diastolic blowing sound and a shorter systolic murmur were heard. By percussion a distinct dilatation of the heart both to left and right were found. In the urine 1 per mille albumin (Eschbach) was found, but no casts.

Diagnosis: Insufficiency and stenosis of the aortic valve, incipient myocarditis, and angina pectoris.

The 15th of December patient made for a period of twenty-five minutes exercises with resistance. His physician, who was present, noted the favorable effect of the movements and found a reduction of the size of the heart; the frequency of the pulse which previously had varied from 86 to 92 per minute went down to 84 to 86; the blood pressure rose from 155 to 170 mm. Hg. After three days the gymnastic exercises were repeated. The patient having first rested for one hour made the exercises with medium resistance for one half hour. The outlines of the heart as shown by the fluorescent screen and the two radiograms taken before and after the exercises demonstrated clearly the difference.

Patient continued for the next months these exercises with an assistant. He avoided alcoholic beverages and lived very carefully as to diet. The attacks became rarer, but returned easily after any extraordinary bodily strain or mental exertion. From the middle of May till the end of June he took a balneological

and gymnastic treatment of six weeks duration at Nauheim. The stenocardiac attacks which were still present at the beginning of the treatment became of less and less frequent occurrence, and before the end of the six weeks they had disappeared entirely. On level ground he could walk several hours without any discomfort, but upon any climbing suffered from oppression and somewhat labored breathing. The general condition of the patient was greatly improved.

I have had no opportunity to see this patient since, as he was transferred to a great distance, although I heard from him last year. His physician reported that the patient's condition was very satisfactory. Only by violent exertion or when exposed to an extremely cold temperature he suffered from oppression around the sternum. The stenocardiac attacks never returned, and the patient who felt well and strong could perform his service without hindrance.

CASE IV.—A locksmith, F. St., fifty-eight years old, had worked very hard and had lost all strength. He used to drink seven to ten glasses of beer a day. Ten years ago he had pleurisy. Since that time he had never been quite well, but had grown weaker each year. His bodily weight has lessened from 128 German pounds to 108 pounds in the last few years. He complained of dyspnoea; even while sitting down he had sudden attacks of shortness of breath, and often suffered from a feeling of great oppression in the lower part of the sternum. Lately the pains had radiated into the right and left arm. For six months he had been unable to do any work on account of increasing weakness and dyspnoea. At the same time he had a cough and mucopurulent expectoration. Latterly frequent attacks of giddiness had supervened.

The temporal, median, and radial arteries were strongly serpentine and felt exactly like hard cords. The ends of the fingers were clubbed and presented a dark blue appearance. The nose up to the bridge was blue and appeared oedematous. Respiration, while at rest, was thirty-two to the minute. The beat of the heart could be seen to move the wall of the chest both to the right and left of the sternum, and it was quite possible to detect by the eye the arrhythmic action of the heart. The sounds of the heart were, however, clear, though there was a remarkable variety in the rate of its pulsation. There was also enlargement of the liver as well as oedema of the legs. Percussion of the lungs proved the left to be emphysematous; on the whole of the right side a more or less dull sound obtained, yet everywhere, apart from a few whistling, rattling noises, vesicular breathing was more or less audible.

The present state showed considerable disturbances of compensation, as a consequence of myocarditis. Walking about in the room caused the respiration to rise from 32 to 39. The pulse at the same time became smaller and appeared quicker. The radiogram showed the following conditions: The whole of the right side of the chest appeared dark from the thickened pleura; the heart was drawn towards the right side. To the left could be detected emphysema, and the heart was displaced in a somewhat vertical position. Further we could see that even the very slightest use of resisted movements, instead of producing a contraction, was sufficient to dilate the walls on both sides. In this case, arteriosclerosis and its attendant changes had proceeded to such a point, and the process of myocarditis had advanced so far that one was obliged to desist from every balneological and gymnastic treatment.

The patient was no more able to work because of extreme dyspnoea and he died a few weeks after I saw him of general anasarca.

CASE V.—Merchant L., fifty years old. The patient had in his twenty-third year, syphilis; he came to me

with complaints of tenderness in the breast, pains which extended from the region of the heart to the left arm, and shortness of breath. He said he had never had palpitation. During the last fortnight he had experienced a feeling as if some one was trying to choke him. At the same time he suffered from sleeplessness. A loud diastolic murmur was audible above the aorta. Percussion showed dilatation of the heart on the left side and also dulness in the second intercostal space on both sides. Percussion alone left no doubt that this was a case of aortic aneurysm, and the fluorescent screen confirmed the diagnosis by showing from behind the aneurysmal sac. The lead points were fixed at the lower angles of the scapulae. In this case also very weak resistance with movements were practised, and at once caused increased dilatation of both the aneurysm and the left ventricle, as became apparent on the fluorescent screen, a sure proof that this kind of cardiac disease as well as an advanced arteriosclerosis and myocarditis belong to the class for which the considered physical method of treatment is contraindicated.

The use of different iodine preparations and of mercury having proved ineffectual, the pains and pressure in the chest combined with breathlessness steadily increased. A sojourn during the summer in an altitude of about 450 metres seemed at the time to benefit him, but his ability to walk was steadily decreasing. It was reported to me by his physician that he died suddenly the following winter after going upstairs.

After showing you by the description of these few cases that we can obtain with or without combination of medicaments satisfactory and lasting effects by means of baths and gymnastic exercises in cases of incipient or not too far advanced myocardial disease, I want also to add a word regarding the contraindication for such physical treatment. I have always laid stress upon the fact that in cases of advanced degeneration such physical treatment is inadvisable and may do harm. Cases IV and V are an example of this. The absolute height of the blood pressure is no positive indicator as to the application of a balneological or a gymnastic treatment. We can observe, and I have published it in another treatise, that just in cases of chronic myocarditis the abnormally high blood pressure went down markedly under such a treatment, i. e., in cases of Cheyne-Stokes phenomena or when the cardiac disease was complicated by renal congestion. In other cases of course when we have to strengthen the muscle of the heart and by that method to improve and remove the condition of incomensation, the blood pressure which was too low increases by this treatment. Therefore we must take into consideration the whole condition of the patient and especially the pathological state of the heart.

According to my experience we have a reliable criterion as to the advisability of the treatment in the following effects. After a mild brine bath (1 to 1½ per cent.) of 93° to 95° F., five to eight minutes duration, or after gymnastic exercises with slight resistance the heart, even if there is a passing acceleration, will beat more quietly and with stronger impulse, hence the pulse must be of a fuller volume and the breathing easier. If we obtain these results from the baths or the exercises and continue this treatment slowly and prudently we can look for success even in long standing cases of muscular diseases of the heart.

THE EXPANSION OF THE BONE ELEMENT OF THE THORAX AND SPINE IN SCOLIOSIS BY PLASTER JACKETS, UTILIZING THE EXPANSION OF THE LUNGS AS A CORRECTIVE FORCE.

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Atlanta, Ga.

In November, 1903,¹ I (Dr. Hoke) reported the case of a young lady, upon whose ribs I had operated in order to correct a very bad deformity of the chest—the result of scoliosis. Previous to the operations she had had gymnastic treatment for a year and a half. This treatment had made her more flexible, but the deformity of the bones was as pronounced at the end of the treatment as it was when the treatment was begun. A number of attempts were made to conceal the deformity without success. At that time there was no known method by which the degree of bone deformity which she had could be corrected. The operations were therefore devised and performed. The details of the operations will be found in the reference.² Considering all the accompanying circumstances I may say the result is satisfactory. The patient presents no appearance of deformity with her clothes on without the use of pads, but she wears a celluloid corset. Her spine is still as crooked as it was before the operations were done, but the lines of the thorax from the armpit down are almost symmetrical. There is no prominence of either hip, the shoulders are in the same plane with the pelvis, and neither shoulder blade protrudes. Her circumstances were such that she had at no time been able to remain in the city for postoperative exercises and massage. I may assert with accuracy that at the time these operations were done upon this patient it was impossible to accomplish the result obtained by any other method of treatment than the operation performed.

It occurred to me after the operations upon this patient, when she returned for a jacket, that the expansive power of the lungs might be used in these cases as a corrective force to fill out the flat areas, while the prominences of the chest were being prevented from expanding; hence the purpose was formed to try this experiment upon some cases as badly deformed as the case operated on in order to see if a similar result might be obtained by this simpler method. Thus no other patients were operated upon. While there remains a great deal of detail work to be done the progress made so far in this method warrants this preliminary report.

Figure 1 is a photograph of two complete "thoracic elements," the fourth and fifth taken from a cadaver selected at random, the lungs of which were normal. The term "complete thoracic element" is used to represent the bone ring formed by a vertebra, the attached ribs and the coextensive part of the sternum.

Figure 1 shows how symmetrical is the normal thoracic element. It is evident that in the growth and development in life of the thorax of which the element was a part, equal forces were at work at corresponding areas symmetrically expanding the ele-

¹ *The American Journal of Orthopedic Surgery*, November, 1903.
² A Study of a Case of Lateral Curvature of the Spine. A Report on a Case treated by the Deformity.

ment. These forces were the respiratory forces of expansion. Given normal lung tissue in both lungs, man's natural posture and no pressure upon the chest wall, the corresponding areas of the chest wall are subject to the same amount of expansive lung force eighteen times per minute. The bones of each half therefore grow alike and thus the thorax is composed of two symmetrical halves.

We know that impairment of a portion of lung tissue is always followed by diminished respiratory expansion of the chest over the affected area. If

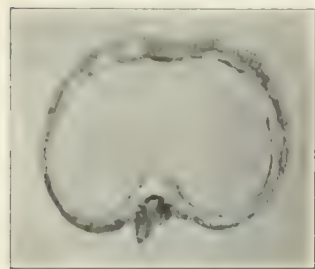


FIG. 1.

the equal expansion over corresponding areas be made unequal by disease within the lung or of the pleura it is followed always, as we know by thousands of clinical observations, by flattening of the chest wall over the impaired lung tissue. It is not the disease *per se* that flattens the chest wall;

it is the diminution of the normal respiratory expansive force mainly that causes it. Also we know by thousands of clinical observations that if through a period of time a portion of lung expands more than a similar portion of the other lung, the chest wall over the former will enlarge more than the corresponding area of chest wall over the latter—compensatory expansion.

It is not disease alone that causes corresponding portions of the lung to expand unequally. Let a normal individual with naked chest stand in front of you. Lay the hands gently on corresponding areas of the chest, and direct the individual to breathe deeply. One feels the equal expansion of the chest beneath the right and the left hands. Press

very gently upon the chest with the left hand; the chest wall beneath the right hand is felt to expand much more forcibly than when there was no pressure with the left, and the expansion is greater than normal. Try this simple experiment with the hands on any areas. If they be corresponding ones the observation is still correct. If a normal person stands, bends the head and the body to the left so as to assume a right convex scoliosis (viewed from the back) the result upon the expansion of the chest is as follows: The left anterior half (by "anterior

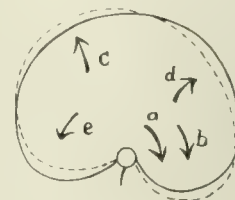


FIG. 2.

half" is meant the area from the mid line in front to the mid axillary line; by "posterior half," from the spine to the mid axillary line) of the chest expands much more than when standing erect, which we shall call the normal, the right anterior half expands much less than normal, the left posterior half expands less than normal, the right posterior half more than normal. It makes no difference whether the person, preserving the assumed right dorsal scoliotic position bends in forward flexion at the same time, or in hyperextension. There is some difference in the degree of the expansions, but this does not affect the principle involved. One of the reasons for the decreased expansion of the right anterior half in this simple experiment is that by the posture the right intercostal fascia and muscles and abdominal fascia and muscles are put upon the stretch; this makes the right anterior half more tense than normal, which is added to if the head be far to the left by the sternocleidomastoid and scaleni pulling upwards upon the clavicle and first and second ribs. The chest wall over the front of the right lung becomes somewhat tense, and this condition offers opposition to the expansion over the area in



FIG. 3. CASE I—Patient standing; right convex scoliosis; before treatment.

FIG. 4. CASE I—Patient bending forward; right convex scoliosis; before treatment.

FIG. 5. CASE I—Patient lying on his back; right convex scoliosis; before treatment.

question. So easily is the symmetrical expansion disturbed that this slight resistance is sufficient to cause the other side to expand more than the normal degree. The right posterior half expands more than normal because of the lessened expansion in

the direction of the arrow a, and a tendency for the whole bone ring, the element, to so rotate. Immediately, too, as determined before, by feeling the expansion, the element is subjected to an expansive force in the direction of the arrows b and c greater than ever before, and the expansion is not so great in

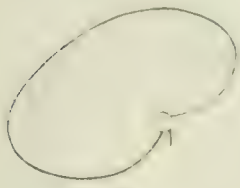


FIG. 6

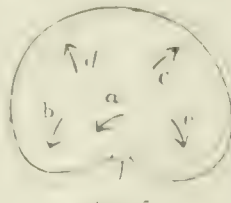


FIG. 7

the right front half; the left posterior half expands less because of the increased expansion of the left anterior half. The import of this is better understood by expressing it graphically.

In Figure 2 let the dark lines represent an element of a normal person. In this element when the per-



FIG. 3. CASE 111. Photograph of patient 172 of L. RODRIGUES, before treatment.



FIG. 4. CASE 111. Photograph of patient 172 of L. RODRIGUES, before treatment.

directions of the arrows d and e; thus each time the person breathes the shape of the element is changed slightly to the figure illustrated by the dotted lines. This happens eighteen times per minute to all elements participating, in greater degree to the most flexible.

Notice in Figure 4 the rib prominence on the right side of the spine and the depression on the left side of the spine. Notice in Figure 5 the prominence of the left anterior half and the flatness of the right anterior half of the chest. The elements in this thorax have the shape shown in Figure 6. See how Figure 6 corresponds to the dotted lines in Figure 2.

Upon examination it was found that with each inspiration the boy's chest over the left anterior half expanded more than the right anterior half, and more over the right posterior half than over the left posterior half.

During the three years the deformity was developing the posture, dependent in this case upon a short leg plus "skeletal insufficiency," caused the respiration after the manner indicated to force out the chest where the respiration was increased, and the chest to flatten where the respiration was decreased. This agrees with the observations on the shape of parts of the chest influenced by decreased respiration in one part and increased respiration in another part.

If the individual by bending to the right assumes

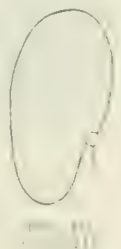


FIG. 5

son is erect the respiratory expansion is symmetrical. Let the person assume a right convex scoliosis with slight forward flexion. There is immediately a rotation, great or less as the case may be, of the vertebra



FIG. 11, CASE I.—After seven months of treatment. (Compare Fig. 3.)

FIG. 12, CASE I.—After seven months of treatment. (Compare Fig. 4.)

FIG. 13, CASE I.—After seven months of treatment. (Compare Fig. 5.)

a left convex scoliotic posture, the result upon the respiratory expansion is the opposite of that produced by the right convex scoliotic position. In this instance the right anterior half of the chest expands more than normal, the left anterior half less than normal, the right posterior half less than normal, the left posterior half more than normal. The effect

was more prominent than the right costal border. The latter fact is more apparent in the photograph, which was recently taken. No photograph of this patient in this position was taken before treatment was begun. An element in this case in the upper part of the chest had the shape shown in Figure 10.

See how this corresponds to the dotted lines in



FIG. 14, CASE I.—With jacket on; back view.

FIG. 15, CASE I.—With jacket on; front view.

FIG. 16, CASE I.—With jacket on; side view.

upon each element then is as illustrated by the dotted line in Figure 7.

Figure 8, Case III, shows the prominence of the ribs in the left posterior half and the flatness of the right posterior half, while Figure 9 shows the same patient lying on her back. At a, the right anterior half, the chest is more prominent than the left anterior half. The patient's left costal border

Figure 7. Examination of this patient's respiration showed increased expansion over the upper part of the right anterior and left posterior halves and decreased expansion over the left anterior and right posterior halves, no matter what the posture for no matter what posture she might assume the type of scoliosis was not changed.

It is plain from the foregoing illustrations and

statements of fact that the respiratory expansion forces induced by the scoliotic posture, no matter what may be the original cause of the spine bending, tend to produce the same type of chest deformity as the rotary force, are in themselves rotary forces, and add to the torsion of the spine while their predominance in one part of the chest materially assists in forming a prominence of the thoracic wall, and in another part their relative weakness permits the chest to flatten. As the shape of the ribs and therefore the shape of the thorax is dependent upon the foregoing, it is plain that these forces must be continuously opposed in the treatment of the bone deformity.

Cases I, II, and III will illustrate the result upon them thus far from acting upon these principles.

Case I has been under treatment by correction jackets since May 1, 1906.

Case II was under treatment by correction jackets for fourteen months. He was a carpenter. Nine months ago he left the city and has not returned. Circumstances prevented his receiving gymnastic treatment subsequent to the use of the jackets. I have written several letters to him, but have received no reply.

Case III has been under treatment intermittently for three years. Twice she went for six months without a jacket, several times she has gone for one and two months without a jacket. In order not to have too many illustrations, only these cases of extreme deformity are reported in this article.

Figure 3, Case I, is a photograph of the back when treatment was begun May, 1906. Figure 11 shows the same view November 26, 1906. Figure 4, taken

with patient bending forward, outlines the prominence of the right of the spine when treatment was begun. Figure 12 is a similar view taken November 26, 1906. Figure 5 is a photograph of the patient taken May, 1906, as he was lying on his back. Figure 13 is a similar view taken November 26, 1906.

Figure 14 is a view of the back of the patient in

the jacket and apparatus. This was taken August, 1906. All the steel parts of the apparatus were detachable. They were worn in the day and removed at night. The plaster jacket, of course, is non-removable. At present a different combination of plaster and apparatus is being worn by this patient. Figure 15 is another view of the patient with jacket on. Figure 16 is a side view of the patient with jacket on. The combined jacket and apparatus was worn with comfort. Note how the apparatus pushes the thorax beneath the left shoulder forward. Note the very large fenestra.

The examination of Case II showed diminished respiration over the anterior part of the right lung and posterior part of the left lung, increased respiration

over the front part of the left lung and back part of the right lung. Naturally, then, the shape of the chest elements was the same as in Figure 6, the same as in Case I, for they are the same type of scoliosis. Compare the rib prominence and flatness in the back with similar photographs of Case I. Unfortunately I did not get a photograph of the shape of his chest in front in the beginning; the contour was like that shown in Case I, prominence in the left anterior half, flattened in the right anterior half. Figure 17 is a photograph of Case II, when treat-



FIG. 17. CASE II.—Under treatment.



FIG. 18. CASE II.—After fourteen months of treatment. (Compare Fig. 17.)



FIG. 19. CASE II.—Under treatment.



FIG. 20. CASE II.—After fourteen months of treatment. (Compare Fig. 19.)

ment was begun. Figure 18 is a similar photograph taken one month ago at the end of fourteen months' treatment. Figure 19 is a photograph of Case II, bending forward, showing the rotation and prominence of the ribs on the right of the spine before treatment was begun. Figure 20 is a similar photograph taken at the end of fourteen months' treatment.

Figure 21 is a photograph of Case III, taken three years ago. Figure 22 is a photograph of Case III, similar to Figure 21, taken very recently. She has been without a jacket seven months. Figure 8 is a photograph of Case III, taken before treatment was begun, bending forward, outlining the prominence of the ribs on the left of the spine. Examine

on the back was taken in the beginning to show the prominence of the right front half and the flatness of the left front half which would be expected in convex scoliosis from what has been said in the first part of the paper. Figure 9, taken recently, shows, however, that such is still the case.

None of these cases have had any treatment for the correction of the deformity but jackets and apparatus applied on the principles laid down herein.

The interpretation of these plain facts forces upon us certain principles which must be applied in the treatment of all cases of scoliosis where there is any deformity of the chest. It is evident from the foregoing that if a plaster jacket even touches the chest it limits the expansion at that site; if it touches



FIG. 21. CASE III.

FIG. 22. CASE III.

FIG. 23. CASE III.

After treatment. (Compare these three photographs with Figs. 8 and 9.)

this photograph closely and it will be noticed how small is the transverse diameter of the half of the thorax to the right of the spine. It is noticeable, too, that the angles of the ribs on the right of the spine have been straightened and obliterated. It is not so plainly shown in the photograph as it was upon the patient.

Figure 23 is a photograph taken recently, similar to Figure 8. Examination of this photograph shows that the transverse diameter of the right lung space, of the right posterior half of the chest, has been increased and that the ribs on the right side are regaining their anatomical shape. The angles of the ribs are forming again. Not so much improvement is shown here as in the other cases. The treatment has been too intermittent, and only recently has an appropriate apparatus been devised for the application of the jackets, making the technique accurate for this case. No photograph of this patient lying

everywhere it limits the expansion of the area it is desired to fill out as well as the area it is desired to keep from expanding. Nothing must touch the area desired to be filled out; not even a gauze shirt. A careful study of the thorax by observation, palpation, and auscultation must be made to find out what parts of the lungs are expanding too little and what parts too much.

The jacket must be put on so that while it is being applied the rotary forces and the deforming respiratory forces are opposed. This cannot be done unless the jacket is applied with the patient in the position seen in Figure 24. The weight of the body must be used as a counter force, so that the corrective force, while it is being applied, be not lost in some compensating motion due to the patient's voluntary giving to the pressure. The patient's legs must be elevated, otherwise he will yield in the lumbar region to the pressure applied to the prominence

of the ribs. This elevation of the legs prevents undesirable lordosis. The jacket must not be applied with the patient in the upright position, nor lying face downwards on a stretcher. The apparatus shown in Figure 24 has been found after much experience to be simple and susceptible to use in ap-



FIG. 24.—Position of patient for application of jacket.

plying the principles. In a later article the details of its construction will be given.

Suppose Case I—right dorsal scoliosis—to be upon the apparatus, the legs are elevated, the pelvis is clamped, the apparatus applied as is shown in Figure 24. Figure 25 illustrates how the corrective force is applied to the elements while the jacket is being applied.

When the pressure is applied the chest elements assume, say, the position of the dotted lines. After the plaster has hardened the pressure pins are removed. The next day the plaster is cut away from over the areas of the chest it is desired to fill out. Thereafter, so long as the jacket is worn the respiratory expansion is concentrated upon the flat areas now free to expand, while the plaster over the prominences keeps the lung beneath the prominences from expanding but little. The shaded areas represent the plaster left over the chest prominences in order to prevent expansion of the lungs beneath. The gaps between the shaded areas correspond to the areas of flattened chest wall left uncovered by plaster, and beneath which the respiratory forces are compensatorily increased. Steel pieces are incorporated in the plaster to which are attached any steel attachments it may be found necessary to use to hold the shoulders, head or the upper exposed parts of the chest. This feature is illustrated by the photographs of Case I.

The requirements for appropriate treatment of these cases taxes one's ingenuity to an extreme degree, for no two cases are alike, therefore, one can not lay down more specifically the details of application of the principles. These details vary and must be worked out in each instance. The cases

show great improvement in the shape of the thorax, marked decrease in the rotation, and improvement in the curve of the spine. In a later paper skiagraphs of Case I will be presented.

Conclusion.—The result obtained by reversing under pressure the method of respiratory expansion in these cases of scoliotic deformity must force one to conclude that: The disturbance of the symmetrical expansion by its dynamic influence upon the ribs must be a factor in permitting the spine to bend and therefore be a constant influence in the rotation of the spine, as well as a most powerful factor in determining the shape of the deformed thorax associated with the scoliosis; that in the treatment of the condition these principles must be applied in the treatment of the bone deformity.

It is not intended in this article to minimize the other causative factors, anatomical, static, physical, etc., so long and correctly recognized as causative influences in the production of the deformity. Whatever causes may produce the scoliotic posture, increase the respiratory forces in a part of the chest, diminish them in other parts as explained in this

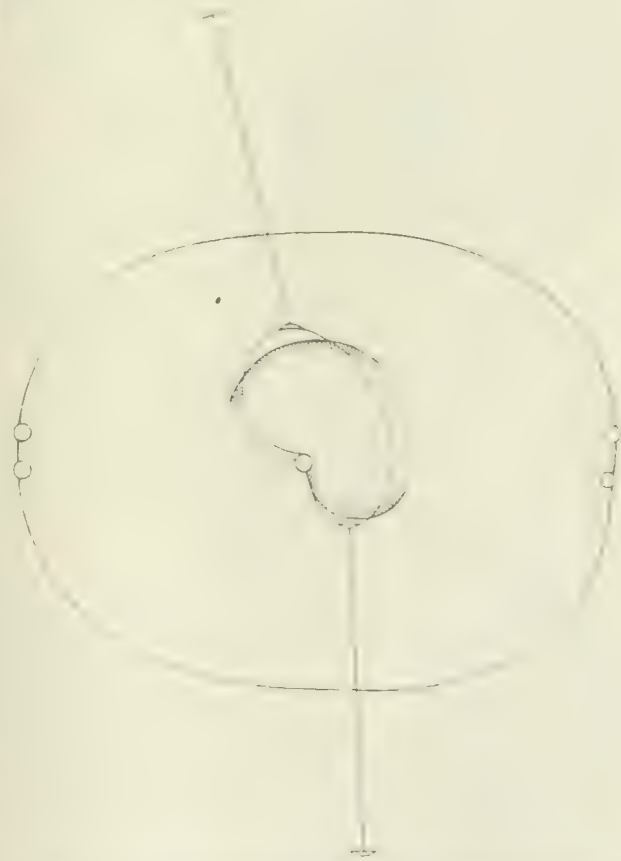


FIG. 25.—Diagram illustrating method of applying force.

article, so that this changed respiration *adds to the rotation*, forces the chest wall into a prominence where the respiration is exaggerated, and permits the chest to flatten where the respiration is diminished. The vicious circle is made complete by this alteration of the respiratory expansion.

ENGEL ST. LOUIS, MO. AND BULL.

ARTIFICIAL SUPPORTS FOR THE VISCERA.

BY J. MADISON TAYLOR, A. B., M. D.,

Philadelphia.

Judicious use of supports for the viscera materially contributes to comfort, organic readjustment, recovery of lost tone and of impaired function. It also assists in regulating abdominal, and hence general circulation. Experience has taught me an increasing appreciation for the teachings of Dr. Morris Longstreth, who has, for over a quarter of a

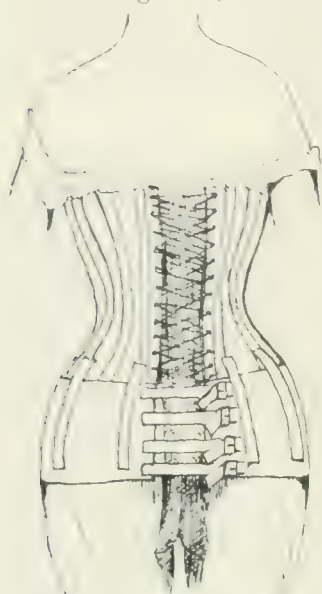


FIG. 1.—Longstreth's belt attached to corset.

century, employed devices of his own with a marked success, and in a variety of disorders not obviously related to conditions presenting. He has not published his views at length, so far as I know, though I hope he may be induced to do so. My purpose is to make a personal contribution to a most important subject, and present my conception of his belt and my experience with its use.

There are many forms of special corsets, abdominal binders, pelvic belts, etc., employed by surgeons and others, many of which I have faithfully tried. Recently, in *American Medicine* (December, 1906), Dr. Spivak gives illustrations of a "pelvic girdle" which is perhaps the best exhibited. This, however, fails to meet, as do most of the others, the essential prerequisite, viz.: to secure the proper point of support, which is the tissues of the upper thighs. It also is faulty, as are most of the others, in expending pressure mainly upon the softer structures of the loins and abdomen.

To achieve the best mechanical effects the ground support must be as solid as possible. This can only be done by encircling the pelvis, between the brim and the external trochanter (usually five inches) by a powerful belt, keeping the upper and lower edges practically parallel. From this position of advantage in a woman (whose hips flare to the thigh levels) pressure can be regulated to support the whole of the structures lying above. The belt can be worn alone in some instances of women (usually the slenderer ones) and in men, whose hips are always practically vertical. It is more satisfactory in women to have the belt attached to any well fitting, suitable corset. It should be adjusted with extreme care over the corset in place, then marked, and later sewed on. It will be seen from the description further on that, when properly adjusted, the direction of support should be from the firm basis of the most powerful tissues in the body, horizontally and uniformly upward. Thus the pelvis is held firmly in its normally horizontal position; the vertebral column is encouraged to remain at a right angle to this, practically

vertical, which is its normal position. We then have the two most important, practically the only available, groundworks for visceral support, the level pelvis and the vertical back bone, placed in the best fundamental conditions for affording aid and succor to the soft tissues which depend upon them. Let me repeat a fact, obvious to those who wear the device, that with it they feel compelled to stand erect. This erectness is real, not fancied. A woman wearing a straight-front corset thinks she is standing erect, but she is not. The unusual degree of pressure on the lower abdomen of the anterior downward projection develops a tendency in the wearer to draw the abdomen back from this point and hence to protrude the buttocks posteriorly and exhibit an exaggerated lumbar curve. Even when this shrinking away occasionally induces a relatively level position of the pelvis, there is afforded no uniform base of support horizontally, so essential to proper sustinment of relaxed viscera.

My experience with the treatment of visceral ptoses has been constant, beginning with neurasthenics, and it is my conviction that these faults are extremely prevalent. There are a few definite symptoms, chiefly of complicated and severe ptoses but by far the larger number give no characteristic sign, and yet must be reckoned with as coincident to a large variety of ailments, acute and chronic. All sorts of backaches can be helped by correcting these ptoses. Gynecological problems are thus often modified. The sewing of wandering organs to flabby structures, without giving adequate attention to restoring the vigor of those structures, is obviously uneconomic. It might be characterized as something much worse. The significance of certain relaxations and weaknesses in the sacrolumbar junctures has been emphasized by Charles T. Poore (*Am. Jour. Med. Sci.*, January 1, 1878), Joel Goldthwait, and Osgood (*Boston Med. Surg. Jour.*, May 25 to June 2, 1905) and J. Dunlop (*N. Y. Med. Jour.*, December 8, 1906).

My experience with neurasthenics in Weir Mitchell's practice, in my early professional years, showed me many who retained bad backs after exhausting endless rest measures, exercises, outings, etc. Latterly, I have realized that it is essential to mechanically reinforce these chronically damaged structures, to support them, and then pursue such educative exercises as shall radically correct the fault.

The field of usefulness for artificial supports for the hollow viscera is larger than is generally appreciated. Here, as elsewhere, a scientific consideration of the problems presenting can, and should be, re-

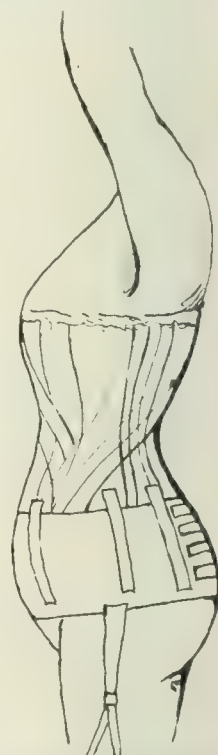


FIG. 2.—Longstreth's belt attached to corset.

duced to fundamental principles. Experience and observation alone can teach us. Corrective belts, girdles, special corsets, etc., should be studied as carefully as many points in physiochemistry. They should, however, only be relied on to supplement radical measures, which are suitable supports followed by corrective exercises, education in posture, elasticizing and strengthening measures. All this constitutes a branch of therapeutics fully on a par with any other. A vast number

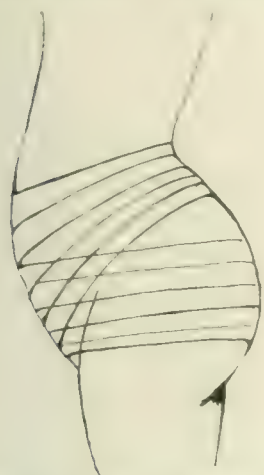


FIG. 3.—Diagram to compare lines of direction of pressure of both various forms of abdominal supports (corset) and the Longstreth belt (below).

and variety of ailments are the outcome of derangements in the viscera, exhibited chiefly in impaired tone of their structures, especially the supporting ones. These again are referable to central defects, developmental, exhaustive, retroactionary or reflex, as I have carefully pointed out elsewhere (See article by author, *Rational Treatment for the Visceral Ptoses*, *New York Medical Journal*, August 4, 1906). *Support for the viscera should involve as much as possible of cooperation with the strongest tissues in the individual.* Furthermore,

they should interfere as little as possible with the normal movements of the viscera, which constantly shift, and change in the inevitable adjustments of the body. Above all, nothing should, in any way, impair the freedom of the diaphragm, the calibre of the bloodvessels, in short, the vital hydraulics.

All artificial aids, mechanical or surgical, are only temporary and imperfect substitute devices. The real cure is to encourage repair in the damaged structures, until the organism is restored to normal by physical education along the lines of my recommendations in the articles referred to. It is altogether wrong to rely on mechanical devices and other artificialities. It is essential to restore structures. This may take time and much persistent education.

The desideratum is to secure a convenient, comfortable garment, readily adjusted, interfering as little as possible with æsthetic requirements; it must support the abdomen fully, maintaining in situ organs which have been "replaced," or exerting a continuous assistance to the process of gradual replacement, whereby the intestines may regain their normal tone and calibre and afford relief to the organs, the connecting ducts and vessels, from hurtful forms and degrees of pressure. It must simulate the natural support and pressure normally exerted on abdominal walls; it must relieve the increased weight thrown upon the diaphragm and those structures which contribute to mutual organic support. It must not impair the normal excursus of movable parts, lower ribs, etc. It must not exert heavy, continuous pressure on the vertebral tissues, whereby excessive vasodilatation, hence chronic relaxation is caused in organs or parts.

Most devices aiming to do all this direct the power to be exerted upon the soft structures of the abdomen, along with those above or near the sacro-lumbar region; and only above the hip bone. The pressure is made greatest on the lumbar region. The straight front corset is, in my opinion, objectionable for reasons stated elsewhere. It invites, it practically compels, the wearer to assume unnatural attitudes, especially a tilting downward and forward of the pelvis. The buttocks are pushed out posteriorly to get away from the pressure in front. There is no question in my mind, after years of close attention to faults of posture, that the nearer the individual achieves a level pelvis, i. e. a pelvis the plane of which stands at a practical right angle to a perpendicular vertebral line, the better. To be sure, the lines of beauty (admirably displayed in the region of the hips and thighs), involve a moderate lumbar curve. The less of this, beyond that seen in a perfectly healthy, well developed young woman the better. Not only is this the more beautiful attitude, but it more efficiently serves the purposes of Nature. The pelvis is a basin devised to contain the soft structures of the abdominal cavity. If it remains practically level these hollow, movable, viscera stay where they belong. If it tilts downward in front these structures tend to pour out over the pelvic brim. If, as is so common, the anterior walls of the abdomen are more or less weak, they demand development by suitable exercises such as I have so constantly described and advocated. These consist of forceful drawings inward and upward of the abdomen, also combining this indrawing act with complete vigorous exhalations. When rightly learned the space between the lower ribs and the brim of the pelvis is increased, and the waist is much smaller, but the tissues are far stronger.

When the normal supports regain tone no belt or corset is then needed. Suitable exercises, along with manual treatment of the tissues of the lumbar region, inducing repair in the lower governing segmental centres, are entirely effectual in replacing prolapsed, ptoses, and consequently damaged, abdominal and pelvic organs. Till this is accomplished a belt is needed which shall afford support in all essential directions.

The belt devised by Dr. Longstreth is five inches wide, of extra firm webbing, the upper and lower lines parallel. No alteration is made in the parallelism (except where attached over the corset it is "worked in" by sewing). It encircles the hips from the "hip bone" (anterior superior spine of the ilium) to the "thigh bone" (external trochanter) which are ordinarily five inches apart; is carried down in front to support the under surface of the abdomen. Thus the forces expended in sustaining the

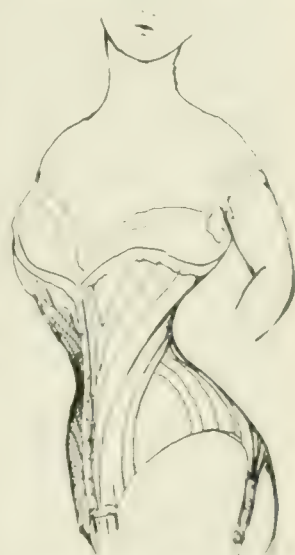


FIG. 4.—Straight front corset.

soft tissues are exerted upon the most solid structures in the body—those of the pelvic girdle, loins and upper thighs. The effects of the horizontal encircling are to compel the pelvis to remain on a normal level and for the patient to maintain the erect posture. A corset alone, even of the longest straight front pattern, encourages relaxation of the skeletal muscles of the back when in a sitting posture. The combination of belt and corset recommended encourages erectness.

The belt is open in front, fastened by three or four broad hooks. Behind it is open, about three inches apart, adjusted by four strong tapes and buckles. By these the shrinkage in girth, which is often pronounced, is also regulated. No perineal bends are required. This belt will support equally well a thin or a pendulous abdomen. Most other belts lie above the hips, exerting too heavy a pressure on the lower back and belly. They are not steady; they tend to slip or pinch. It is most important to elicit the co-operation of the heavy muscles of the upper thighs. By this means the parallelograms of force are made to radiate upward and inward, to the vertebral line, obtainable in no other way. When once the wearer becomes accustomed to this belt the comfort is complete. Its simplicity, its power, commend it. Nevertheless, much skill and judgment is required to attain adaptabilities. Careful fitting and skilful refitting are demanded, otherwise it may be unjustly condemned. At first nearly all patients condemn and reject the belt, but with tactful persistence they usually welcome it, when needed, enthusiastically. My own experience with it engenders enthusiasm for this device in ameliorating a variety of conditions not at first obvious—dyspepsia, loss of motility, ptoses, venous stasis, dilatations, obesity; especially many of those which the gynecologist finds rebellious, protracted, but not always demanding radical operation. Also the field of usefulness in so called nervous diseases is exceptionally large. Particularly in that large group pointed out by Goldthwait and Osgood, and especially by Dunlop as false diagnoses: (1) Hypertrophic or osteoarthritic spine; (2) chronic sciatica; (3) neurasthenic or functional spine; (4) lumbago; (5) muscular rheumatism; and (6) typhoid spine.

1504 PINE STREET.

APPENDICITIS IN PREGNANCY.*

By HIRAM N. VINEBERG, M. D.,
New York.

To the late Dr. Mundé belongs the credit of having been the first to draw the attention of the profession to the occurrence of appendicitis in pregnancy. In his customary forceful manner he emphasized the importance of early diagnosis and proper surgical treatment. Next to Dr. Mundé credit is due to the president of this association, Dr. R. Abrahams, for whipping up the interest of the profession in the subject by his able and strongly worded paper read before the New York County Medical Association on November 16, 1896, and published in the *American Journal of Obstetrics*, February, 1897, just ten years ago. In looking through the literature I found no paper which is so universally quoted and which

is accorded so much weight as the paper to which I have just referred, and this is deservedly so. For though considerable experiences have accumulated in appendicitis in pregnancy since the publication of that paper, many of the statements made in it hold just as good to-day as they did then.

The frequency of the complication of acute appendicitis in pregnancy, in my opinion, is not as great as is generally supposed. Boije (*Mitteilungen aus der gynäkologischen Klinik des Professor Dr. Otto Engström*, v, 1903), with that precision and industry characteristic of Swedish authors, was able to collect only seventy cases (operated and non-operated cases) up to 1901. I have gone over the literature carefully since that date and have collected ninety-three more cases. These with six cases in my own experience make a total of 169 cases. Of course no one would assume that this number represents all the cases up to the present time, but the reported cases do serve as an index, to some extent, of the frequency of the complication. It is unfortunate, in the interest of the point under consideration, that the general surgeon who reports his 1,000 (Ochsner, *Journal of Medicine and Surgery*, Chattanooga, November, 1904) and 2,000 cases (J. B. Murphy, *The American Journal of Medical Science*, August, 1904), while he states every complication, says absolutely nothing about the complication of pregnancy. Is it that he has not encountered the association of the two conditions, appendicitis and pregnancy, or does he deem the association not worthy of special consideration? Treves (*British Medical Journal*, March 4, 1905) forms an exception. In his report of 1,000 cases, 319 of which were in the female sex, it is noted that pregnancy was associated in six cases.

Through the courtesy and consideration of my friend Dr. A. V. Moschcowitz, I am able to state the number of cases occurring in the entire surgical service of Mount Sinai Hospital from 1898 to 1907, a period of eight years. There were 2,003 cases, 731 of which occurred in the female sex. The association of pregnancy occurred in only nine cases. Two of these were not operated in, and the diagnosis of appendicitis rested upon clinical symptoms alone. There were, therefore, only seven undoubted cases. In both gynecological services, since the new hospital has been opened, almost three years, there has not been a single case.

E. Fränkel (*Sammlung klinischer Vorträge; neue Folge*, No. 229) met with only four cases of acute appendicitis in pregnancy in 40,000 obstetrical and gynecological cases.

Etiology.

From the foregoing facts one must deduce that the pregnant state does not predispose to the development of acute appendicitis. This is contrary to the opinion frequently expressed, that the constipation and congestion usually attendant upon gestation are potent etiological factors in the causation of appendicitis. These opinions are generally based upon theoretical considerations, which in turn are founded upon false premises. In the first place, there is less constipation, as a rule, during the pregnant state than at other times, because the woman pays more attention to her bowels during that condition, and if she belongs to any class except the

* Read before the Medical Association of East Side Physicians, New York, February 17, 1907.

most she is more or less in a torpid condition the whole time. Secondly, there is not a congestion, in a pathological sense, of the pelvic and abdominal organs during pregnancy. There is a hyperæmia, if you will, but this must have a beneficial rather than a deleterious effect. We know, as a matter of fact, that the pregnant state has a beneficial effect upon the nonpurulent inflammatory processes of the pelvic organs by loosening up the adhesions, permitting of their distension, and favoring the absorption of exudates that are not of too old a date. Furthermore, in looking through the histories of the reported cases of appendicitis in pregnancy, in a very large percentage of the cases, there are evidences of one or more attacks prior to the onset of pregnancy. In twenty-six cases in which mention is made of this circumstance, in eleven cases it was the first attack, in fifteen cases there had been several attacks before. Further still, one meets with a considerable number of recorded cases in which there had been repeated attacks of rather a severe type of appendicitis before conception, but the pregnancy and parturition ran a smooth course, and later on an operation disclosed a chronic appendicitis.

We do not wish to be understood, however, from what we have already said, as minimizing, in the least, the importance of the subject of appendicitis as a complication in pregnancy. We have tried merely to give the complication its proper proportion, but that proportion, though small it may be, is of the utmost importance, and upon a true recognition of it often may depend the life of two, that of the mother and of the unborn infant. Fresh from a perusal of a large number of cases in the literature, one cannot set aside the impression that there has been an unnecessary sacrifice of life from the complication abroad, where frequently the disease was not suspected until there was a decided mass to be palpated, or an appendicular abscess had formed. In other cases the disease was not recognized at all and was disclosed only on the autopsy table. The danger lies in the opposite extreme in this country, where every pain in the right side of the abdomen is definitely diagnosticated by the laity as appendicitis, and by the doctor regarded, at least, with suspicion. The latter attitude, that of regarding every pain in the right side of the abdomen, during pregnancy, with suspicion may perhaps be a safe one, but it is needless to add that a definite diagnosis should not be made without sufficient data. This leads us to the differential diagnosis, to my mind the most important phase of this entire subject.

Differential Diagnosis.

(1) *Pain in the Right Side of the Abdomen.*—This is not an uncommon symptom in pregnant women.

Only the other day I was called in consultation to see a primipara between five and six months pregnant, who for the prior three weeks had suffered from frequent attacks of pain in what is considered the appendiceal region. The gentleman who met me was the second medical attendant in the case, the first having been discharged because he had advised an operation for appendicitis. The present attendant was in doubt, he thought it might be appendicitis or ectopic pregnancy. After a careful examination I could positively exclude both conditions: the pain, in my opinion, being due to a stretching of the abdominal parietes. As the

woman in this case had no history of the previous stretching was felt more on the right side.

I reached my conclusion, first, by determining positively that the pregnancy was intrauterine; secondly, by noting that there were no constitutional symptoms, no elevation of temperature, no rise in the pulse rate, no coating of the tongue, no rigidity of the rectus muscle, no definite point of tenderness. I see, in my mind's eye, thrown at me the facts that appendicitis may occur without fever, without rise in the pulse rate, without rigidity, and in fact without any of the things I used in my mental process of exclusion. That may all be quite true, but we cannot take the rare exception for our diagnostic *rationale*. Indeed, some authorities do look upon these pains in the right side of the abdomen as always caused by mild attacks of appendicitis. Others again hold that they are mild attacks of salpingo-oophritis. It appears to me unwise to assume always the presence of a certain lesion from certain subjective symptoms. It may be true that occasionally the pain may be due to a mild catarrhal appendicitis or to a mild inflammation of the right annexa, but if the woman can go through her pregnancy and labor unscathed and does not have any recurrence thereafter, the inflammatory process must have been so mild that it may safely be ignored. Of this I am certain: I have observed innumerable women who suffered considerably during pregnancy from pain in the abdomen, most often in the right side, who went to full term, had a normal puerperium, and remained well afterward as long as they were under observation, which in some instances was for several years. In my opinion most of these cases are due to a myalgia, consequent upon stretching of the muscles of the anterior abdominal parietes, and are best relieved by gentle rubbing with some emollient preparation.

II. *Rupture of an Ectopic Gestation Sac at an Early Date.*—Judging from the number of cases of ruptured tubal gestation that are sent to Mount Sinai Hospital as cases of acute appendicitis, the differential diagnosis must be difficult for many practitioners. In the differential diagnosis one must bear in mind that (1) fever, even high fever, is frequently present in ectopic gestation, and consequently that elevation of temperature does not of itself decide in favor of acute appendicitis; (2) that the pain in ectopic gestation is more paroxysmal and more severe than in appendicitis; (3) that rigidity and tenderness over McBurney's point are seldom marked in ectopic gestation; (4) that in ruptured ectopic gestation sooner or later there is a bloody flow, usually of an intermittent character, from the vagina; (5) that on bimanual examination one can usually feel a mass, or a resistance, or a point of tenderness at the side of the uterus; all of these would be absent in appendicitis; (6) ectopic gestation is not an uncommon occurrence in pregnancy, while appendicitis is, as we have seen; (7) rupture of tubal gestation occurs most frequently in the earlier months of pregnancy. In Boije's collection of cases the date of pregnancy is given in forty-two cases. Ten of these cases occurred in the second and third months of pregnancy. The remaining thirty-two cases occurred between the fourth and ninth months of pregnancy. In my series the period of pregnancy is stated in sixty-nine instances: twenty-

nine of these occurred between the second and third months of pregnancy and thirty-nine between the fourth month and the normal end of gestation.

III. *Pyelitis of Pregnancy*.—This is a complication of pregnancy which is not known as well as it ought to be and is more frequent than is generally supposed.

About eighteen months ago I was called by a physician of considerable experience to see a case that he diagnosed as appendicitis in pregnancy. The patient, a primipara in her sixth month of pregnancy, had been ill in bed for four or five days with pain in the right side of the abdomen and with a temperature ranging from 102° F. to 104° F. At the onset she had one or two chills, and she made the impression of a very sick woman. The tongue was heavily furred, the pulse was rapid. There was tenderness diffused over the lower half of the abdomen on the right side. I asked about the urine and was assured by the medical attendant that he had examined it the day before with negative results. On bimanual examination I could make out a slight thickening of the right ureter as it entered the bladder. I obtained a specimen of the urine myself, and a microscopical examination of it showed numerous pus corpuscles. I had no hesitation in making the diagnosis of pyelitis. The patient entered our service at Mount Sinai Hospital, and under appropriate treatment the pyelitis disappeared, the woman went to full term, was delivered of a female child, had a normal puerperium, and has remained well to date.

I have had four such experiences during the past two years. Most men, when they examine the urine of the pregnant woman and find it does not contain albumin or only a trace, rest content and do not push the examination of the urine any further. It was that which misled the attendants in the four instances referred to. Finding a mere trace of albumin, they felt safe in excluding acute nephritis, the disease of the kidneys so frequently met with in pregnancy, but the existence of pyelitis of pregnancy never occurred to them.

The chief features in the differential diagnosis of pyelitis in pregnancy are: (1) The onset is frequently ushered in by a chill, and the chill may be repeated during the first two or three days. (2) The temperature is usually higher than in appendicitis; a rise to 104° F. or 105° F. is not uncommon, while the pulse rate may be comparatively low. (3) In a large percentage of the cases there are bladder symptoms, such as frequent and painful micturition. (4) Deep pressure in the loin usually elicits tenderness, and in some cases an appreciable enlargement of the kidney can be detected. (5) On vaginal examination the ureter, as it courses across the anterior vaginal wall, is found thickened in a certain number of cases. (6) Pressure over the area close to the McBurney point may elicit pain, but this is due to pressure being made over the ureter as it passes over the pelvic brim. This feature, therefore, may be misleading if not properly interpreted. (7) A microscopical examination of the urine will reveal the presence of a varying quantity of pus, while the urine gives an acid reaction. The reason why pyelitis in pregnancy so often is mistaken for acute appendicitis is that, in the vast majority of cases, it is the right kidney which is affected. The causes of the greater compression of the right as compared to the left ureter, according to Olhausen and others, are, (1) the pelvic brim is

more prominent on the right than on the left side; (2) owing to the rotation of the uterus on its long axis, from left to right forward, the uterus and its contents lie more in the right oblique diameter of the pelvis than in the left. The foetal head more frequently lies in the right oblique diameter of the pelvis. It is not, however, always the right kidney which is affected in the pyelitis of pregnancy. We had recently a case in Mount Sinai Hospital in which the left kidney was the one involved. The patient was operated upon by Dr. Howard Lilienthal several weeks after the uterus had been emptied, and the left ureter was found enormously dilated and filled with pus.

IV. *Disease of the Right Annexa*.—To differentiate an acute salpingo-oophoritis on the right side from an acute catarrhal appendicitis may be difficult and at time may be impossible. As aids to the differential diagnosis may be stated (1) the pain in salpingo-oophoritis frequently radiates down the thigh, while the pain due to appendicitis usually radiates toward the epigastrium; (2) in salpingo-oophoritis there is often a history of gonorrhoeal infection shortly after marriage, this applies especially to primiparas; (3) a local examination may help materially to clear up the diagnosis.

V. *Typhoid Fever*.—

A few months ago I was called in consultation by a very capable man to see a young woman who had aborted, after the third month, about ten days before, and who was running a fairly high and irregular temperature, and had more or less pain in the right side of the abdomen. The medical attendant suspected either acute appendicitis or puerperal sepsis. She had a moderately coated tongue and a comparatively slow pulse. By a process of exclusion I suggested the possibility of typhoid fever, a Widal was made with negative results. She was later admitted into the medical ward of Mount Sinai Hospital, where the first two or three Widal tests resulted also negatively. Later, however, the test was positive and the patient went through a moderately severe attack of typhoid fever. I had a few similar experiences during the past years. While the patient referred to above had some pain and tenderness in the right side of the abdomen, they were not of the character usually witnessed in appendicitis. It was not very difficult to rule out appendicitis in this case, but it was not so easy to positively exclude sepsis. I assumed the responsibility, however, of doing so, and subsequent events justified me in my attitude.

Finally we need only mention the passage of a ureteral calculus or the presence of gallstones as possible factors in the differential diagnosis. The recognition of these two conditions differ in no way from that in the nonpregnant state. I refer to these so that in a given doubtful case one should at least bear them in mind. Another condition which may lead to an error in diagnosis is an ovarian cyst with twisted pedicle. If this occurs in the latter months of pregnancy it may be impossible to make the correct diagnosis. I saw such a case which puzzled several consultants who saw it. In ovarian cyst with twisted pedicle the pain is paroxysmal and out of all proportion to the constitutional symptoms present, at least for the first two or three days. Retention of urine is, when it occurs, very characteristic of twisted pedicle cyst.

Direct Diagnosis.

Having dwelt at some length on the differential

diagnosis, not much need be said on the direct diagnosis of acute appendicitis in pregnancy, as it does not differ materially from that at other periods.

In one case, in a woman six months pregnant, I was able to palpate the thickened appendix through a very thin abdominal wall. The operation disclosed an appendix the thickness of one's index finger, and it was buried deeply in an exudate. The patient made a smooth recovery, pregnancy continued to full term, the delivery and the puerperium were normal. In a second case, in the seventh month of pregnancy, the tenderness was marked over the classical site, and the operation disclosed mild catarrhal appendicitis. Thirty-six hours after the operation the patient had a severe chill, the temperature rose to 105.6° F., pulse 130. I did an *accouchement forcé* a few hours later. The temperature fell in the course of the next twenty-four hours, and the patient made a good recovery.

This case bore some resemblance to two other cases I had met with in my practice, and as I have never been able to find their counterpart in the literature, I will relate them briefly:

The first case occurred in 1896. A young primipara, between six and seven months pregnant, was seized one day with a slight chill and pain all over the body, attended with a slight rise of temperature. Examination was negative. I looked upon the case as a probable grippe. In a couple of days she grew much worse, and her pains were referred chiefly to the abdomen. There was considerable distention and superficial tenderness over the entire lower half of the abdomen. A prominent internist saw her in consultation with me. He diagnosticated acute appendicitis, which was a great surprise to me, as I had not even suspected that condition. During the next twenty-four hours the symptoms seemed to shape themselves in favor of that diagnosis, the pain became localized to the right side of the abdomen, and there seemed to be marked tenderness over the McBurney point. A leading general surgeon was called in and he was positive that not only was there acute appendicitis, but that we should find a large collection of pus. After due preparation I performed a lateral laparotomy and found a practically normal appendix, which I did not remove. I palpated the whole abdominal cavity on the right side and could find nothing abnormal. The abdomen was closed in the usual manner. The patient's condition steadily continued to grow worse, the abdomen became enormously distended, there were repeated chills, the temperature ranging from 103° F. to 105° F., the pulse from 120 to 150. Several prominent surgeons and gynecologists were called in, none could give a rational explanation of the condition, but all were agreed that the patient was doomed. On the fifth day after the laparotomy I decided to deliver the woman by *accouchement forcé*. The child seemed normal and lived for a few hours. After the delivery the patient began to improve promptly, and in the course of five or six days the temperature and pulse were normal. The woman went through a normal pregnancy a couple of years later. To this day I am unable to give a satisfactory explanation of the case.

The second case occurred in 1901. It was also in a primipara, who was in her fifth month of pregnancy. The onset was similar to that of the first case, but symptoms simulating acute appendicitis developed more rapidly. There was localized pain and tenderness, the abdomen became very much distended, temperature 103° F., pulse 130. Favoring the diagnosis of acute appendicitis was the history of an attack of pain in the right side of the abdomen and fever, keeping her in bed for a week, six years before. The lateral laparotomy disclosed a practically normal appendix which I removed. Exploration of the abdomen with the hand

gave negative results. There was no abatement of the symptoms after the operation. Twenty-four hours later I did an *accouchement forcé*, the fetus showed signs of having been dead for some days, the skin being considerably ecchymosed. After the delivery the patient began to improve and was practically well within a week, excepting for a phlebitis of the right leg, which was slow in disappearing. On interrogating the patient afterwards it was learned that she had received a rather severe blow in the abdomen a few days before the onset of the symptoms. This, no doubt, caused the death of the fetus, which in time gave rise to a toxæmia from absorption, the resulting symptoms simulating an attack of acute appendicitis.

PROGNOSIS.

Acute catarrhal appendicitis is no more nor no less dangerous in the pregnant state than in the non-pregnant state. As a rule the pregnancy after the operation goes undisturbed to full term. In the series I have collected there were thirty-six cases of acute and chronic catarrhal appendicitis operated in and the appendix removed. There was one death. Seven patients aborted from twenty-four hours to ten days after the operation, and twenty-eight patients went to full time, having a normal labor and puerperium. It is quite different when the appendicitis has resulted in a deep abscess formation, then the association of pregnancy forms a very serious complication. In the first case there is danger that the pregnancy will be interrupted. This is more likely to take place after the lapse of some time, say three or four weeks after the operation, during which time the uterus has had time to grow sufficiently to drag upon the adhesions which have formed. Of the thirteen cases reported in the literature since 1901, in which an abscess had formed, the treatment consisting in an incision and drainage, five patients died, six women aborted at periods varying from a few days to a week or longer, and two women went to full term, the delivery and puerperium being uneventful. The abortion or premature delivery may, in addition, bring considerable danger in its train by disturbing the relation of the abscess wall and perhaps permitting a small pus focus to empty into the general peritoneal cavity. In a case of Dr. Elsberg's (personal communication) abortion set in four weeks after operation and was attended with a sudden rise of temperature on the day following the spontaneous abortion. A fœcal fistula developed and the temperature then fell to the normal.

Füth, in an article in the *Archiv für Gynäkologie*, LXXVI, 1905, draws attention to the circumstance that the pregnant uterus pushes the cœcum upward and backward, so that if appendicitis develops it is much more dangerous in the later than in the earlier months of pregnancy. In support of this contention he draws upon the cases collected by Boije, in forty-two of which the period of pregnancy is stated. There were ten cases in the second and third months, with a mortality of 33 per cent., and thirty-two cases between the fourth and ninth months, with a mortality of 59 per cent. It is proper to add that Boije's collection comprises the earlier cases, when the surgical treatment of appendicitis, in general, was not so well understood as in recent years.

Treatment.

The treatment of appendicitis in pregnancy is too large a subject to enter into detail within the time assigned to me. The same principles in treatment must be observed as in appendicitis in the non-pregnant state. This, however, can be said that because pregnancy is present one should not become panicky and consider that an immediate operation is always imperative. If the attack be a mild one the patient can safely be treated palliatively, and one may wait for further developments. Should another attack occur within a short time and exhibit symptoms of greater severity then, it seems to me, one should not defer surgical intervention, in the hope that further attacks will probably not recur. In an attack manifesting very acute symptoms one should act just in the same way as if pregnancy were not present. It is well to administer opiates freely during the first seven or eight days after the operation, so as to avert premature termination of pregnancy. If abortion or premature delivery becomes inevitable one should follow the recognized method of treatment, of emptying the uterus completely.

In the presence of a large appendicular or post-cæcal abscess, one should not attempt to do more than make an incision and employ drainage, disturbing the relation of the abscess cavity as little as possible. The absurd procedure advocated by some to empty the uterus by forcible intervention immediately after operation met with the fate it deserved, being universally condemned. With ordinary precaution the uterus even in the abscess cases will not expel its contents until after the lapse of several days, when the local conditions will be such that no danger will ensue from the altered relations of the abscess cavity that such an event will bring about.

Dr. A. G. Gerster, in an excellent paper in the *Philadelphia Monthly Medical Journal*, March, 1889, raises the question of an interesting contingency, should a patient with an acute appendiceal abscess fall into labor before surgical intervention has been instituted. What is to be done? If the labor is to be allowed to proceed and surgical intervention deferred until the uterus has discharged its contents very grave danger would arise from an internal rupture of the abscess, with the usual consequence of an acute septic peritonitis. On the other hand, if one were to employ incision and drainage the risk of contamination during the process of delivery would be very great; there would be the absence of the aid given by the contraction of the abdominal wall to aid the uterus in expelling its contents, or if the abdominal wall did contract there would be great danger of forcing out the intestines through the incision in the abdominal parietes. To meet such a contingency he proposes to make a free incision and empty the abscess as thoroughly as possible, taking care not to enter into the general peritoneal cavity. He would then pack the abscess cavity very tightly with gauze. He would next pass through and through sutures and close the abdominal wound completely. The wound could be covered with collodion and a suitable dressing applied held in place by adhesive straps. On the completion of labor he would reopen the abdominal wound, remove the gauze, treat the abscess cavity according to the usual methods. The plan seems very plausible

and could be employed in the event of such a contingency. But in my recent search of the literature I did not find a single instance in which such a contingency had arisen.

751 MADISON AVENUE.

TWO CASES OF TRAUMATIC CATARACT, WITH OPERATION.

BY DAVID WEBSTER, M. D.,
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CASE I.—*Simple Extraction of Traumatic Cataract.* James S., æt. thirty-two, was accidentally struck in the right eye by the elbow of a friend, and the sight had gradually failed until he had only perception of light in that eye. He could read coarse print with the injured eye up to a year and a half ago. The projection was good, the pupil reacted to light and a soft, milky looking cataract occupied the pupillary space.

The operation was performed on October 4, 1889. Having cocaineized the eye and washed it with Panas's fluid, the speculum was introduced and the usual section upwards was made with a narrow von Graefe's knife. After lacerating the capsule a moderate amount of pressure failed to extrude the lens. The cystotome was introduced a second time, when the patient suddenly squeezed his eye and the lens was extruded *per saltum* with a small quantity of vitreous. The wound was carefully cleansed and both eyes were bandaged. When the dressings were removed four days later it was found to be impossible to inspect the wound as the patient resisted every attempt to raise the lid. But there had been no pain, and the anterior chamber was refilled. Prolapse of the iris was not discovered until the twelfth day after the operation. Having cocaineized the eye an attempt was made to excise the prolapsed iris, but the patient snapped his eye and vitreous came. On October 20th, sixteen days after the operation, the prolapsed iris was removed under ether. On October 30th, although both eyes had been kept bandaged, the wound was still gaping. I then cauterized it with the platinum cautery. On November 6th the wound having closed, the patient was allowed to go home. On November 18th the eye was white, the wound was well healed, and the vision was 20/200 with + 10.D. The patient was allowed to go to work.

CASE II.—*Traumatic Cataract Removed by Needling.* Edward G., æt. fifteen, was struck in the left eye by a stone when he was about five years old. About six months ago his friends noticed that his left pupil was gray. He then found that he could not see much with that eye. Examination at the clinic showed R. V. = 20/20; no lesion. L. V. = counting fingers at 10 inches. Lens was cataractous, but eye otherwise normal.

The patient was admitted to a bed in the hospital. On April 11, 1898, the eye was cocaineized, and a horizontal incision was made in the anterior capsule of the lens with a knife-needle. Atropine was dropped into the eye, and both eyes were closed with a bandage. April 14th. Soft lens matter was presented through the opening made in the capsule. April 18th. There was no inflammatory reaction; the swollen lens matter protruded into the anterior chamber. The patient was now discharged from the wards and was kept under observation as long as seemed necessary at the out-clinic. January 28, 1901. The patient reenters the hospital for discission of a pupillary membrane. Vision = 10/200 with + 10.D. Under cocaine an opening was made through the thinnest part of the membrane with a knife-needle. February 2nd. Eye white and quiet; a nice little hole remains in the membrane; atropine has been used twice a day. Vision = 20/40 with + 10. D. s. and + 2.50 D. c. ax. 180. Patient was discharged.

308 MADISON AVENUE.

THE RELATION BETWEEN DISEASE OF THE TONSILS AND ENLARGEMENT OF THE GLANDS OF THE NECK *

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Waldeyer's lymphatic ring comprises those groups of lymph follicles which are situated at the nasopharyngeal vault, between the faucial pillars and at the base of the tongue.

The two faucial tonsils develop in depressions in the second branchial clefts of the sinus tonsillaris, and lie between the pillars of the fauces. The *Tonsillaranlage* appears during the third month of foetal life. From the two recesses into which the sinus tonsillaris is divided by the intratonsillar fold, epithelial buds grow down, which open out and form crypts. In the mesenchyme around the buds, adenoid tissue develops and lymphocytes accumulate, forming the tonsillar follicles.

The tonsil is an oval, glandular mass 20 mm. long, 12 to 15 mm. broad, and 13 mm. thick, enclosed in a capsule of connective tissue which is normally 1 mm. thick. From the capsule there are bands which pass inward between the lymph follicles, in which lie the bloodvessels and lymphatics. On the internal surface of the tonsil the mucous crypts open by ducts from twelve to sixteen in number. The normal tonsil has the power of destroying microorganisms by phagocytosis. When diseased, however, this ability is either lessened or destroyed.

The crypts are the points of least resistance, especially those which empty into the supratonsillar fossa and which, from their anatomical position may be filled with cheesy concretions. Consequently the lining membrane of the crypts and the surface membrane of the tonsils become weakened, and it is through these unemptied crypts that pathogenic germs are most likely to gain entrance.

From their structure we judge that one of the functions of the tonsils is to form leucocytes; another probable function is to furnish a lubricating fluid for facilitating the passage of food through the isthmus of the fauces and the œsophagus. It is possible that the crypts serve as reservoirs for this lubricating material, and that during the act of swallowing they are emptied of their accumulated contents by pressure of the fibres of the palatal muscles and the superior constrictor of the pharynx.

In the tonsillar crypts and in the parenchyma of the tonsil, pathogenic germs are rarely found, as they are quickly attacked and overcome by the leucocytes. When bodily resistance is subnormal or the germs are sufficiently virulent to overcome the other means of defense, a positive chemotaxis having been produced, there is a lacunar tonsillitis. With a negative chemotaxis there is a general systemic infection without a tonsillitis. After tonsillitis, inflammation of the serous membranes is common, e. g., pleuritis, endocarditis, and polyarthrititis, in which the same streptococci and staphylococci are found as in the original angina.

Kletz¹ noted that in many cases of septic arthritis the tonsils were also the seat of septic infection and that the adenoid tissues of the tonsils, the appendix, and of Peyer's patches in the intestine, were the localization of what should be called "bacteriæmia." In cases of appendicitis, endocarditis, and pleuritis, particular attention was paid to the condition of the tonsils, and elicitation disclosed the fact that more than 50 per cent. of the patients had previously suffered from angina.

The ætiological connection was thus established, and it is further confirmed by the increased prevalence of these diseases after changeable seasons, when angina and throat troubles are rife.

There are constantly present in the mouth innumerable microorganisms, many of which are either pathogenic or capable of becoming so under favorable conditions. Constant shedding of the epithelial cells and the flushing caused by the saliva, carries large numbers into the stomach, where the gastric juice effects their destruction. Saliva itself possesses limited germicidal properties, attenuates the growth of most microbes, and prepares them for the action of the gastric juice.

Midway between and sharing the hazards of the upper respiratory and digestive tract, the area of the pharyngeal cavity and the fauces is exposed to great danger of infection. Without ciliated cells and being only intermittently flushed by saliva, this area has no protection against infections, such as is possessed by the nose, the mouth, or the bronchial mucous membrane.

The infection is carried by the lymphatics to the cervical glands, which serve as barriers against general systemic poisoning. Tonsils are analogous in many respects to the lymphatic glands, but differ in having crypts which communicate with the buccal cavity. Lymphatic vessels traverse the glands, but they actually arise in the tonsils in the meshes of the connective tissue between the lymph follicles. They are provided with walls of their own, anastomose, and form rich peripheral plexuses. They then decrease in number and reach the cervical glands, where they again break up into capillaries which pass through into the large collecting trunks, thence into the subclavian veins. The lymphatic capillaries terminate by absolutely closed *culs-de-sac*, and do not communicate with the connective tissue nor with the bloodvessels. They are, however, in very intimate physiological relation with these various structures, a relation which has been demonstrated by both normal and pathological physiology.

Flowing in these vessels is the lymph. The essential part of the lymph is the plasma, which should not be considered a simple product of filtration, but rather a secretion, the genuine result of cellular activity.

The formation of lymphatic glands takes place later than that of the lymphatic vessels. Delamere² has seen unequally developed glands lying side by side in the neck of the human foetus of four months. They vary in size from those which are invisible to the naked eye, to those the size of a walnut. They are usually buried in a bed of adipose connective tissue, are adherent only to a slight extent, and are

* Read at the conjoint meeting of the Chicago Medical Society and the Chicago Laryngological and Otorrhinal Society, May 10, 1907.

¹ *Archiv für Klinische und Experimentelle Medizin und Chirurgie*, 1906, 8, 1, 248.

² *The Laryngologist*, 1904, 1904.

movable under the finger. They have a firm, yet elastic, consistency, and feel like the liver or the kidney. Generally speaking, they are paravascular. In the neck they form chains, in groups from fifteen to thirty, and are of varied shapes, but almost always reniform. The oblique afferent lymphatics approach the glands' convex borders; whereas, the efferent vessels which are larger and more numerous, escape from the hilum on their concave borders.

The normal color of the glands is pink, but the bronchotracheal glands of man become black from the infiltration of small particles of carbon. The lymphatic apparatus of the pharynx is well developed on account of the richness of its mucous membrane in lymphoid tissue.

These lymphatics arise from two areas of network, one mucous and the other muscular. The mucous network spreads superficially beneath the pharyngeal epithelium and presents its maximum of development in the mucous membrane which lines the posterior surface of the larynx and the pharyngo-laryngeal pouches. In the pharyngeal tonsil the network is extremely rich and the meshes become remarkably fine, but it is singularly scanty at the junction of the pharynx and the œsophagus. The muscular network is of much less importance and has been injected only in the ox and the horse.

From these two areas of network, but more particularly from the mucous, run several collectors, which may be divided into three groups, superior, middle, and inferior.

1. The superior collecting group arises from the vault of the pharynx, from the lateral walls of the nasal pharynx and from the upper half of the posterior wall. The majority of the vessels are directed towards the posterior middle line, where they traverse the pharyngeal wall and terminate in the retro-pharyngeal glands. Some pass directly to the superior and middle glands of the internal jugular chain, running obliquely behind the sympathetic and the large vessels and nerves. The others run back between the rectus capitis anticus major and the vertebral column.

2. The middle collectors arise from the tonsillar region and from the mucous membrane of the adjacent parts. These vessels perforate the muscular coat above the great cornu of the hyoid bone and terminate in the glands placed on the internal jugular, immediately beneath the posterior belly of the digastric.

3. The inferior collectors arise from the whole of the inferior portion of the pharynx and end in four or five glands of the internal jugular chain, which lie along this vessel or behind it, between the posterior belly of the digastric and the middle part of the thyroid body.

The rich network which surrounds the circumvallate papillæ gives origin to seven or eight large collectors. They represent the principal lymphatic channel of the tongue. At first they creep underneath the mucous membrane at the base of the tongue, then pursue different courses, designated median and lateral.

The three or four median trunks pass backward in the middle line as far as the lingual insertion of the median glossoepiglottidean fold. They divide here into two groups of equal importance; one

passes to the right, the other to the left, and both join the lateral trunks. This intermixture of lymph from the two sides of the tongue is of importance from a pathological point of view. The two lateral trunks on each side unite with the median trunks at the lower end of the tonsil, and disappear as they pass deeply into the subtonsillar region, but they traverse the pharyngeal wall at different points. All terminate in a large gland placed on the internal jugular, immediately beneath the posterior belly of the digastric. This, then, is one of the most important glandular termini of the lymphatics of the tongue. On account of the very free anastomoses of the lymphatic vessels of the pharynx, infection from the tonsils can be transmitted through the cervical and bronchial gland chains directly to the upper lobe of the lung.

Lymphatic glands are probably enlarged in all acute infectious diseases, the degree of enlargement depending upon the length of the period of incubation; the longer the incubation, the greater the glandular enlargement. The glands enlarge some days before the onset of active symptoms, and this is a reliable indication that an acute infectious disease is incubating. Isolation at this time would probably prevent the spread of the suspected disease. In measles, the glands are enlarged some days before Koplik's spots appear. Vipond³ declares that from such enlargement he has diagnosed incubating measles seven days before the rash appeared, in a child who had been exposed to the contagion four or five days previously.

The glandular enlargement varies in children who suffer from the same disease, and different regions of the body are unequally affected by the particular poison. In diphtheria, where decided enlargement of the anterior and posterior cervical glands is expected, in many cases they are but slightly enlarged, while the axillary and inguinal glands may present great increase in size.

In scarlet fever, where a mixed infection through the tonsils is frequently found, suppuration in the cervical glands is not uncommon. In these infections, when a child is exposed to and contracts the disease, the bacteria or their toxins are carried at once through the tonsils into the lymphatic system, and in three or four days the glands begin to enlarge. In the exanthemata, as long as the temperature is high and the rash well out, the glands remain large and sensitive. With fall of temperature, the glandular tenderness disappears, but reduction in size is much more gradual.

Nursing infants are not prone to contract infectious diseases, and it has been thought that the mother's milk has some antitoxic quality. This is possible, but it is more probable that, being small and not very active, the tonsils of the infant do not absorb poisons readily. The same theory applies to the adult over forty years of age in whom the tonsils are atrophying. Infectious diseases are most common between the ages of two and twenty, this period of growth and development being a time when lymphoid tissues are more subject to inflammations.

Wood's laboratory experiments⁴ demonstrated

³ *British Medical Journal*, December 15, 1906, p. 1710.

⁴ *Journal of the American Medical Association* May 6, 1905, p. 1425.

that under certain conditions the apparently healthy state of the tonsils did not prevent the passage of virulent tubercle bacilli through their substance, thence into the efferent lymph vessels.

On November 28, 1904, a small white hog was inoculated with virulent tubercle bacilli, by rubbing over the surface of the faucial tonsils a cotton swab which was saturated with the culture. The animal was killed on December 2, 1904. Post mortem examination revealed no enlargement of the lymph glands, and the viscera were macroscopically normal. Under strictly aseptic precautions the tonsillar lymph glands were removed from both sides of the neck, ground in a mortar with sterilized water and injected into the peritoneal cavity of two guinea pigs. One died December 30, 1904, of general septicæmia, and the other was killed March 9, 1905. There was enlargement of the cervical and mesenteric lymph glands, enlargement and caseation of the bronchial glands. The liver was large, friable, and dotted with tubercles. The spleen was greatly enlarged and infiltrated with numerous granules in which tubercle bacilli were found.

Suggesting the possibility of two forms of tuberculous infection Goodale⁵ cites seven cases of tuberculous cervical adenitis in which he had removed the tonsils: Clinical inspection showed very little that was abnormal, but microscopical examination revealed tubercles and giant cells. With this tonsillar tissue he inoculated four guinea pigs, which died afterward of tuberculosis. Cultures from these pigs proved that they had died of bovine tuberculosis.

Experimental inoculation demonstrates that tuberculosis of the glands of the neck is of bovine origin, the result of absorption through the tonsils. Human and bovine tuberculosis are apparently antagonistic to each other, and a mild attack of one seems to confer immunity against the other. A large proportion of the patients with tuberculous glands of the neck afterward have pulmonary tuberculosis unless operated upon, but Grober's⁶ statistics show that when the operation is performed, it develops in only 14.3 per cent. of the cases. Of his series of 760 adenoid removals without regard to symptoms, tubercle bacilli were found in 6 per cent. The bacilli bore no relationship to the adenoids; they simply came in contact with the pharynx and remained there. Robertson,⁷ in 232 tonsillectomies, found 8 per cent. tuberculous.

Bandelier⁸ summarizes the principal communications previously published, and gives details of 100 cases in which the tonsils were found enlarged and tuberculous, among the 900 tuberculous inmates of the Cottbus sanitarium. Tubercles were found in some of the tonsils, when on the surface they were apparently sound. A tuberculous process in a tonsil is a frequent accompaniment of tuberculosis of the lungs, although a primary tuberculous process in the tonsil is occasionally encountered, which is the result of infection from inhaled or swallowed germs. The tonsils of the adult are seldom the entrance point of tuberculous infections, but in chil-

dren they may convey bacilli as readily as abrasions of the skin, carious teeth, etc.

Jonathan Wright⁹ is convinced from his carmin stained sections that dust, under ordinary conditions, passes readily through the intact surface epithelium of the tonsil. He acknowledges that this is a marked contrast to the way bacteria enter, yet clinical and microscopical evidence proves that pathogenic bacteria are absorbed through the tonsillar epithelium.

It would be well were the truth more generally recognized that diseased tonsils are in themselves not only perilous to the individual, but a great menace to the glands and contiguous parts, which are so very susceptible to disease. If tonsils and adenoids were more often removed, infectious diseases, including tuberculosis, would be more infrequent.

34 WASHINGTON STREET.

THE USE OF BATHS IN THE TREATMENT OF LEPROSY, ESPECIALLY THE MEDICATED BATH.*

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Balneotherapeutics is that division of therapeutics which deals with bathing in the treatment of diseased conditions. Yet I think it advisable in the beginning to say, I do not mean to use the expression "baths in the treatment of leprosy," as a water cure, or go to extremes as does Abbé Kneipp in the cure of disease.

Water, and especially water used to convey medicine to the system, by means of baths, has its value in the treatment of diseased conditions, and was recognized by the ancient physicians.

Asclepius had temples dedicated to him, near many springs in ancient Greece. Hippocrates used water as a fundamental principle of his pathology and treatment. To restrict ourselves to baths in leprosy, we note that they were recommended by Moses, who in his laws and treatment says: "And when the man hath washed his clothes, he shall shave all the hair from his body, and shall be washed with water," etc. Aretæus, in the second century, remarked, regarding the cure of leprosy: "Continued baths are appropriate for humectating the body and for dispelling depraved humors." (Dr. Adams's translation for Sydenham Society.) Michael Scott, in the sixteenth century, observed: "It ought to be known that the blood of dogs and infants two years old or under, when diffused through a bath of tepid water, dispels leprosy without a doubt." Schilling, in the eighteenth century, recommended baths. He stated: "In respect to the skin, and in order that perspiration should regularly continue, warm baths are employed." (Danielsen and Böck.)

In our own time, baths of gurjum oil were once highly praised in India, while in Japan the baths were part of the gotto treatment. In New Orleans we find the baths in conjunction with the administration of chaulmoogra oil and strychnine, and in Norway the treatment of leprosy depends almost entirely on tepid and steam baths.

* Read before the annual session of the Medical Association of the Hawaiian Islands, November 19, 1906.

⁵ *Journal of the American Medical Association*, November 24, 1906, p. 1731.

⁶ *Klinische Jahrbücher*, 1905.

⁷ *Journal of the American Medical Association*, November 24, 1906.

⁸ *Beiträge zur Klinik der Tuberculose*, vi, 1.

⁹ *New York Medical Journal*, January 6, 1906.

Cases Most Suited for the Baths.—In using baths, especially medicated baths, all lepers can take them and be benefited, but the most improvement has been noticed by me in those suffering from ulcerated tubercles and thickened lifeless skin, or where there is neuritic pains, or lymphadenitis, or the lepra itch. In fact, in all cases of leprosy you can note marked improvement, except some mild stationary cases. The plain warm, soft water bath, temperature 95° F. to 104° F., assists the work of ameliorating the condition of the lepers by carrying off the effete matter from the system and by removing all scabs and crusts. Hot bath at a water temperature of 105° F. to 110° F. is a powerful nerve stimulant, as shown by the exhilaration. After a hot bath a leprosy person invariably goes to sleep.

Medicated baths of use in the treatment of leprosy are the alkaline bath, sodium bicarbonate or borax, one pound to the bath; astringent baths, alum, one-half pound to the bath; potassium sulphate baths, one half pound to the bath. These baths are of great medicinal value in leprosy, especially the potassium sulphate bath, which acts on the leprosy tissue, and causes a more or less healthy state in all leprosy ulcerations. The bath of which I wish to speak in detail is the warm or hot medicated bath made by adding to a bath of water (30 to 40 gallons) an infusion of eucalyptus leaves (4 gallons).

Method of making eucalyptus mixture: We take leaves and young tender sprouts, cover them with water in a still, boil for two hours, and strain. Then we add carbolic acid, 1 to 4000, and sodium hyposulphite, 1 to 50. Of this infusion mixture we take, as I said before, 1 part and add to 10 parts of the bathing water.

Direction for using bath: The bath should be given twice daily; the water in the morning should be at a temperature of 95° F. to 104° F. Enough water should be used to immerse the body (30 to 40 gallons). The patient should remain in the bath at least fifteen minutes. During the immersion active friction should be kept up on all parts of the body. Immediately after bathing the patient should be thoroughly rubbed with a towel, coarse enough to cause exercise to the skin. This should be followed with an ointment composed of

R	Olei eucalyptus, .....	.5iv;
	Ung. sulphuris, .....	.5iv;
	Ung. lanolini, .....	.5ij.
M.	fiat ung.	

It should be thoroughly rubbed into the skin, while all excess should be removed.

The evening bath should be at a temperature of 105° F., and gradually raised as high as can be safely borne to about 110° F. After this hot bath, the patient should be removed and wrapped in a warm blanket and allowed to remain thus covered for ten minutes. This causes the sweat glands to act freely, thus removing waste material from an already diseased body. The rubbing with a coarse towel and the use of the ointment should then follow. This hot eucalyptus bath assures the patient of a good night's sleep, a thing most highly valued by a leper suffering from neuritic pains.

The Results of Seven Months' Continual Use of the Eucalyptus Bath.—The results obtained are of such striking character as to be appreciable to the patients themselves. Many improvements following

various treatments are so minute as to be appreciable only to the physician. The improvement has not only been appreciable to the lepers, but it is remarkable in the percentage helped. Of 300 to 400 lepers using the bath now, only three, as far as I can learn, have not been benefited, and these are old cases of nervous variety showing only a contracted hand or finger.

The results are: 1. Cleanliness. When a person is afflicted with an incurable disease in the vast majority of cases he becomes more or less careless about personal hygiene and neglects his daily bath. Therefore in the double daily bath we achieve the pinnacle of personal hygiene. Consequently there is an absence of the peculiar odor about those bad leprosy cases, and the bath also lessens danger of contagion from contact.

2. The glands of the skin are stimulated and goaded to a proper, or nearly so, functional activity. The action is so great that patients have noticed the collection of effete matter after the bath. They have said that they could feel it ooze out. In nearly all the cases it has been noticed that there is a decided change in the appearance of the skin. Those whose skin before had that peculiar muddy appearance characteristic of the disease, now present a much clearer, cleaner, brighter, healthier skin.

3. It softens the thickened, indurated skin and underlying integument. The skin becomes softer and more pliable. There has been a somewhat marked disappearance of some of the thickened ridges which cause the "leonine" facies. Lepers' skin from lack of proper nervous stimulation becomes hard and lustreless, resembling more parchment than human skin. Under the eucalyptus this appearance disappears somewhat.

4. The baths have a decided tendency to relieve the stiffness of and overcome partially contracted fingers. In one case especially there has been a very marked improvement in the use of the fingers and hands. Where before the bath movements were stiffly performed, there is now a more active movement. This is most marked in one case, where the patient was and again is an accomplished pianist.

5. There is marked improvement in the lepra neuritis. Among the many things with which the afflicted leper is troubled in the unbearable pain, leprosy neuritis. This pain is due to the involvement of the nerves in small tubercles, or more correctly, perhaps, the involvement of the tubercle in the nerve sheath. This pain is most intractable to remedial agents, but under the use of eucalyptus baths many patients have been relieved to a great extent, much more so than from any drug internally, as acetphenetidin, acetanilide, or antipyrine. Lepers also suffer from another peculiar aggravating pain, the numbness of the hands, feet, and other portions of the body. The part feels as if it was asleep. A leper will sometimes walk all around his house without one slipper before he will see he has lost it. There has been an improvement in this symptom. To repeat one leper's expression, "I have no feet or arms." The leper meant he did not have a dead weight to carry around. It has relieved the coldness, especially of the extremities, which lepers suffer from. Their hands or feet may feel as if they had been placed in ice water. Under the use of

the bath there has been a marked amelioration of this feeling.

6. Leprous itch is cured. Some lepers suffer from the agonies caused by the *sarcoptes scabiei*, yet there is among the lepers a more or less continual itch, which is not caused by any parasite other than the *lepra bacillus*. This itch is so painful that the patients will scratch themselves until they make large bleeding excoriations. Under the baths the parasitic as well as the true lepra itch, if I may so call it, are greatly improved.

7. Many excoriations, ulcerations, erosions, and abrasions of the skin and mucous membrane are healed. A most striking sight is the appearance of a patient whose entire face had been one mass of sores and scabs. To use the sisters' expression, "It is the first time I have seen her face in a year." Many sores and ulcerations are stimulated to heal, the old scabs and crusts are thrown off and healthy granulations appear, and when new skin forms it has the appearance of healthy, rosy skin. Another notable case is the following: The entire nose was a mass of ulcerations. It has now become completely healed and it has a nice, shiny appearance of new skin. In many cases where skin and mucous membrane meet, especially at the lips, are great fissures and accumulated scabs or crusts, presenting a horrible appearing orifice. Under local application of the eucalyptus solution many have healed kindly and so far permanently. Ulcerated ends of fingers heal up while taking the daily baths.

8. Leprous tubercles soften, and some have disappeared. In some cases since beginning the baths there has been noticed a softening and a gradual absorption of the product with a decrease in the size of the tubercles. There was no subsequent leper fever following this absorption of leprosy product. I have noticed in one patient the complete disappearance of very small tubercles. In other cases of general hypertrophic appearance one notices the diminution of the oedematous condition of their hands and feet. Hands and feet which before were greatly enlarged and disfigured, and greatly interfering with the patients' daily work, are now becoming reduced in size and motion is not so much interfered with.

9. Cases in which there were macular eruptions both discrete and in patches show a tendency to a complete disappearance of the patches and of the eruption. The hot eucalyptus bath assures the leper a good night's rest. Among lepers you will find many who suffer from insomnia, or some who will wake up in the night and then cannot go to sleep again. After a eucalyptus bath they will be assured of an entire night's rest.

Should the baths in the future fail to continue the good results we now expect of them, we at least show the patients that something material is being done for them. The bathing puts them in good spirits, they are occupied physically, mentally, and they know it helps them. There is nothing that cheers up a leper so much as to know you are working earnestly to ameliorate his condition.

Conclusion.

The action of the bath is due no doubt to the combined action of the medicaments used and the heat. There is certainly a certain very small pro-

portion of the eucalyptus absorbed which causes physiological actions of the drug, disinfectant and locally antiseptic. It is a general tonic, digestive, laxative, diaphoretic, diuretic, expectorant, and carminative.

It has been said wakefulness follows the use of eucalyptus baths, but I have not found such to be the case in lepers; on the contrary, a general drowsiness follows the bath.

I would recommend the use of the baths not alone, but in conjunction with some internal treatment. With medicaments internally to diffuse into the lepra ridden tissues and the baths externally, we are on the road to further advancement in the treatment of this disease. Of my patients some have taken chaulmoogra oil and strychnine in increasing doses; some oil of eucalyptus, five drops three times daily, or a distillate of equal strength. Those taking chaulmoogra oil have had the usual nausea and vomiting of this treatment with no more marked improvement, while all who have taken eucalyptus have not had an attack of lepra fever since starting the drug internally.

As has been said of surgery, so can be said of the treatment of leprosy, we are traveling in a circle; indeed, but a circle of an ever ascending spiral until we reach the pinnacle where we shall find the cure of leprosy, based probably on some measures at present misused in our ignorance.

UNRECOGNIZED DIPHTHERIA IN CHILDREN.

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Of all the types of diphtheria none is more frequently overlooked than the so called catarrhal form involving the nose. It is then for this very reason most fraught with danger, not only to the patient himself, but also to those with whom the patient comes in contact. It is a common form, far more so than one would be led to suspect.

In general the well being of the patient, the slight rise in temperature, the absence of acceleration or disturbance of the pulse rate or of respiration are extremely deceptive, and most frequently lead to the diagnosis of "slight cold in the head."

Despite the fact that changes in the gastric secretion occur during the course of diphtheria, children with nasal diphtheria frequently have unimpaired appetites, eat heartily, and apparently digest well.

There are practically no symptoms aside from those indicative of an ordinary cold. Occasionally, however, the discharge is confined to but one side of the nose, and the entrance to the nostril and upper lip are on that side red and slightly swollen. Fischer, in a recent article, states that "the glands of the neck, especially the post cervical chain, can be felt and are usually enlarged." This, however, is by no means the rule. Indeed, it is not a little to be wondered at that in spite of the fact that the mucous membrane of the nose is so abundantly supplied with lymphatic channels enlargement of the cervical glands during nasal diphtheria is frequently absent and rarely early. There is as a rule a discharge of glairy mucus which may become later yellow or even greenish yellow. Sneezing may occur, but appears to be not so common as in an ordinary coryza.

Indeed, these patients complain chiefly of the discharge and the persistent redness of nose and lip.

In the early stage of diphtheritic rhinitis examination of the nasal chamber shows merely an acutely inflamed mucosa with the usual characteristics. Later, however, as the disease progresses a more or less typical membrane develops.

The grave danger of spreading the infection by such unrecognized cases is self evident. The following cases are illustrative:

CASE I.—D. D., a boy of four years, came to my office with his nurse some two months after I had removed his adenoids. The nurse told me that, although the boy immediately after the operation had been able to breathe freely through his nose, he had had for the past two weeks a constant cold in his head, and had been unable to breathe as freely as before. The boy's temperature, pulse, and respiration were normal, his appetite excellent, he played about the house, and in short to quote the nurse, "he wasn't sick a bit." Examination showed a normal pharynx. There was no enlargement of the cervical lymph nodes. The upper lip and entrance to the left naris were red and swollen, and there was a glairy mucous discharge from the left nostril only. I found, however, a membrane in the nose extending well over the lower portion of the septum and the inferior turbinate. I immediately informed the nurse of my suspicions and took a culture. The report was not positive. In spite of my warning, however, the boy received no further medical attention. At the end of a week, I was again called to see him, this time at his home. It seemed that another child in the family had been attacked with chickenpox.

This case having been reported, an inspector from the Board of Health, in addition to examining the child ill with chickenpox, took a culture from the nose of the little boy whom I had seen a week before. This time the Health Board report was positive. Thereupon I was sent for. I learned that during the preceding two days the child had developed a croupy cough. He was pale and looked ill. Antitoxine was injected, and during the next few days large pieces of membrane were expelled from the nose.

CASE II.—G. H., a boy of seven years, came into my office, November 30, 1906. His history was as follows: Three weeks before he had had "a cold in the head," with headache, fever, loss of appetite, etc., and a thin watery discharge from only the left side of his nose. The constitutional disturbance lasted but a few days and then disappeared entirely. There had remained, however, some obstruction in the left naris, and the entrance to the nostril and the upper lip on that side were red and swollen. Some slight discharge, too, had persisted.

Upon examination I found his temperature, pulse, and respiration normal, his pharynx and nasopharynx were normal. Adenoids had been removed some two years before. There was no enlargement of the cervical glands.

In the left naris there was an extensive membrane. The culture proved positive. Antitoxine was at once injected, and the boy made an uneventful recovery.

In conclusion, I would urge that the so called "cold in the head" of children be not too lightly passed by; that carefully examining the nose be considered quite as important as examining the throat, which has now become routine; and that, especially in those cases where the discharge is unilateral or persists, the possibility of a mild type of nasal diphtheria be borne in mind and proper precautions be taken.

DANGER OF FIRE IN FORMALDEHYDE DISINFECTION.

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The increased efficiency of formaldehyde disinfection as applied at the present time by means of the formalin-permanganate method of evolving the gas has brought with it a new danger, uncertain, yet none the less real, in consequence of the fact that upon several occasions at least the mixture has been known to take fire spontaneously.

During the winter of 1906-1907, Dr. Courtland Y. White, of Philadelphia, in connection with some disinfection work which he was doing for the Department of Health of the State of Pennsylvania, observed upon three occasions that the mixture caught fire after the combination of the constituents had begun and the room had been closed. It was fortunate that the fact was discovered on one of these occasions, as the flame was so high as to endanger neighboring articles in the room. Suspecting the possibility of impure ingredients, he wrote to Health Commissioner Dixon concerning the matter, who referred it to the writer for consideration and investigation.

It is well known that there is considerable uncertainty connected with reactions in which potassium permanganate plays a part, and that even with inorganic substance, as in the Kjeldahl method for the estimation of nitrogen, there is sometimes a spark or flash of fire when the permanganate is added to the other constituents. In the formalin-permanganate method it has been customary to use two parts of formalin to one part of permanganate, adding the latter to the former and quickly leaving the room before the violent evolution of gas which shortly takes place has time to affect the operator. Working with quantities in some cases as high as one pound of permanganate, the amount of heat developed must be very great, and if there are any uncertain factors present, such as organic matter in the container which has been imperfectly cleaned, the danger of possible ignition is that much greater.

The flame which appeared upon the occasion described by Dr. White was a pale blue flame, reaching several feet into the air from the generating container. This agrees with the appearance of the flame of formaldehyde gas, which burns freely when ignited, even if mixed with a fair proportion of steam, as is usually the case.

The gas may be ignited from a 40 per cent. solution of formaldehyde by simply heating it and applying a match to the surface after ebullition has begun, and when the formalin-permanganate disinfection proportions are used in as small a quantity as one ounce of formalin and one half ounce of permanganate, using a beaker for a generator, the flame of the ignited gas has been observed to have a length of more than one foot.

In view, therefore, of the uncertainty regarding the cause of the ignition of the vapor in these observed cases and in recognition of the hitherto overlooked fact that formaldehyde vapor is very inflammable, it would be well to practise this method of disinfection with the precautionary measures of

using small quantities of the ingredients (not over one quarter or one half pound of permanganate to a charge) in several containers, surrounding these containers with larger ones containing water, being careful to extinguish all gas jets, pilot lights, fire, and other possible causes of ignition, and keep the generators away from the sides of the room where a flame might be communicated to inflammable material. It is not believed by the writer that this method of disinfection need necessarily be abandoned, but it is essential that its limitations and dangers be not overlooked in its future use.

Therapeutical Notes.

Venous Stasis in the Treatment of Acute Gout.—Alkan (*Thérapie der Gegenwart*, January, 1907) has applied Bier's method of producing artificial venous stasis to acute accessions of gout, acting upon the principle that the serum of the blood is the best solvent of uric acid. His treatment consists in placing a constricting cord around the limb for two or three hours, to produce artificial venous stasis of the foot. He then removes the ligature, and placing the limb in an elevated position, applies cold compresses for two hours, which, in turn, are followed by hot poultices. He reports that this treatment rapidly causes the cessation of the access of gout.

To Prevent Falling Out of the Hair.—Sabourand, in an article on the treatment of alopecia in women (*La Clinique*, April 19, 1907), approves of the occasional application of soap to the scalp, but not to the entire length of the hair. The soap should not be too strongly alkaline, and its use should be governed by the amount of oil in the hair. The frequent application of a stimulating lotion is recommended, something after the following formula, the proportion being varied to suit the individual case:

R Alcohol (90°),250.0 grammes;
Spirits of lavender.....25.0 grammes;
Ether,25.0 grammes;
Pilocarpine hydrochloride,0.25 gramme;
(Dissolved in a little water.)
M. Water of ammonia,.....4 grammes.

The application of this should be preceded by a brisk friction of the scalp with a rather stiff brush. Massage of the scalp is also useful. The effects of the application should be watched, and the treatment directed by the physician.

Curarine in Tetanus.—Löwen, of Leipzig, has undertaken a series of experiments upon the value of curarine in the treatment of tetanus (*Mittheilungen aus den Grenzgebieten der Medizin und der Chirurgie*). In small animals placed in an atmosphere of oxygen (with practice of artificial respiration for larger ones), he observed the entire disappearance in a few hours of all tetanic contracture (except in the gravest cases), following injections of curarine, which caused muscular paralysis. Even in the worst cases the contractures of the muscles of the vertebral column and of the spinal column, the limbs and the diaphragm were diminished. Animals affected with tetanus reacted more quickly to curarine than did normal animals. In man it was

observed that curarine could render great service in those cases of tetanus in which rapid asphyxia is threatened by contracture of the diaphragm. With the aid of artificial respiration, or tracheotomy, a cure might thus be expected from injections of curarine.

Antiseptic Wash for Nose and Throat in Influenza.—Mattiect (*La Presse médicale*, February 27, 1907) directs that, four times daily, antiseptic vapor be inhaled through the nostrils, and the throat be gargled with the following aromatic solution:

R Menthyl alcohol,40.0 grammes;
Menthol,10.0 grammes;
S. Alcohol (at 90°),100.0 grammes.

M. S. For external use.

A teaspoonful of this mixture to be placed in four ounces of very hot water. At first, the steam coming from this solution is to be inhaled, and when sufficiently cooled, it is to be used as a mouth wash. About fifteen minutes should be taken up with these manœuvres. Finally, a little mass of petrolatum, containing boric acid or menthol, is to be expressed from a tube (the end being first passed through the flame of alcohol) and deposited in the nasal chambers. Potassium chlorate tablets may be allowed to dissolve in the mouth.

The Active Principle of Koussou Flowers.—Notwithstanding the numerous researches which have been made of late years into the active principle of the flowers of koussou, authors are not yet completely in accord upon this subject. By the use of chloral hydrate solution and sodium carbonate, Reeb has isolated, or obtained, three substances: One in white crystal, which is physiologically inactive, known as protokosine; and one amorphous of a brick yellow color, melting at 65° C., and very active physiologically. He also found that the extract of koussou, after being treated with chloral hydrate and sodium carbonate, contained still another substance, which is physiologically active, it is of a brick red color, and melts at 72° C. The inactive protokosine exists in the flower, since it is obtained directly by solvents. The two active substances, however, are believed to be not present in the flowers of koussou, but require the addition of sodium carbonate. These two substances appear to be the same as the kosotoxine of Leichsenring, an amorphous body, melting at 80° C. This, when boiled with barium hydrate, yields a crystalline substance, which apparently is identical with the koussene of Merck.—*Les Nouveaux remèdes*, March 24, 1907.

A Simple Treatment for Impetigo in Infants.—Carrière has obtained excellent results from the following method of treating crusta lactea: The crusts must first be removed either with a starch poultice (boricated), or preferably by moist compresses of salolated gauze (four or five thicknesses) wet with decoction of walnut leaves. The gauze is to be covered with sheet rubber, and is to be renewed three times during the day, and also at bed hour. When the crusts have fallen off the microbes still remain to be destroyed. For this purpose Carrière employs hydrogen dioxide in ten per cent. solution. After this has been applied, the head is again covered with rubber (caoutchouc) and the dressing is left undis-

turbed for twenty-four hours. It is very important not to commence with the hydrogen dioxide until after all the crusts have been removed, or the treatment will fail. When properly used this method gives rapid results. Out of ten cases, six were cured in less than five days; two were cured in less than ten days; two in less than fifteen days. There were no recurrences. Intestinal asepsis with fractional doses of calomel is a valuable aid in the treatment (*Journal de médecine de Paris*, January 13, 1907).

Treatment of Otitis Media Acuta.—Frederick Wurtz (in *La Clinique*, August 17, 1906) recommends the following procedures for the relief of acute middle ear inflammation. In a case where perforation has not occurred, the treatment consists in instillations of phenol (five to ten per cent. solution in glycerin). All lavage, or instillation of oil, or laudanum, must be abstained from. The instillation should be made with a warm pipette, or a warm spoon, and frequently repeated. Relief is soon experienced as the rule; but if the pain persists and the membrane becomes prominent, paracentesis should be performed without delay. The incision should be free and made over the point of greatest swelling; when the swelling is uniform, the incision should be at the place of election in the posterior inferior quadrant. A mere puncture is not sufficient, but a free incision is required, since cicatrization takes place very quickly. The canal should be cleaned and douched with a solution of corrosive mercuric bichloride (1 to 1,000) previous to operating, the following local anæsthetic used, devised by Bonain:

R Phenol (in crystals), }
Menthol, }equal parts
Cocaine hydrochloride, }

M

or Gray's formula:

R Aniline oil, }
Alcohol (at 90°), }10.0 grammes;
Cocaine hydrochloride,1.0 gramme.

M.

Allow the first to remain five or ten minutes in contact with the tympanum, or the second ten minutes. The former produces a more complete anæsthesia than the latter, and is preferred. Having made the incision, a slight insufflation with the Eustachian catheter, or simply by Valvalva's method, will discharge a small quantity of pus. The canal is now to be carefully cleaned with gauze or absorbent cotton. The only dressing required is a small piece of dry gauze applied to the ear. The ear should be cleaned and a fresh dressing applied daily. If the discharge stops and the mastoid becomes tender to the touch, repeat the paracentesis, which is better than trephining the mastoid. If the perforation is large so that the pus flows freely, clean and apply dry dressing, or use hydrogen dioxide (neutralized) for instillation, which is better than syringing. If the tympanic membrane is red and there is a shining pulsating swelling, act as in the preceding case and make a free incision. This method avoids many complications. It prevents the chronic discharge of the ear and thus reduces the number of cases of eventual meningeal inflammation and endocranial abscess.

Treatment of Facial Erysipelas.—In a recent clinical lecture, Professor Albert Robin (*La Quinzaine thérapeutique*, April 10, 1907) says that, although facial erysipelas is usually regarded as a benign disease (mortality, 20 per cent.), yet it is not so in the case of elderly people, where the mortality may rise to 70 or 75 per cent. It is also very grave in cases of heart disease, and in grippe. The treatment which affords the best results is the external antiseptic treatment. Of all the applications proposed, he prefers the corrosive sublimate solution (1 to 1,000) applied by a spray from a steam atomizer. Every three hours, day and night, the operation is repeated; it is kept up for twenty minutes, or half an hour. The atomizer is held at such a distance that the patient does not feel the heat of the steam, but only a refreshing sensation (about 50 cm., or 20 inches distance). The body of the patient is protected by a rubber sheet, and pieces of oiled silk are placed over the eyes, which should be kept closed. If the scalp be invaded, the hair should be cut off. After the fourth day, the frequency of the injections may be reduced gradually to once every six hours, then every twelve hours. This treatment brings about almost an immediate reduction in the temperature. In the cases in which he had employed it, Robin has had no mortality. Intestinal treatment he regards as of secondary importance. Among the chief remedies are cinchona and alcohol, which he combines in the tincture of cinchona in full doses. If delirium supervenes, he continues the same treatment; but gives cold baths every three hours, until the body temperature falls to 39° C. (or 102° F.). If the pulse fails he gives sparteine sulphate 0.15 grammes (gr. iiss) in water, 150 grammes (5v) in tablespoonful doses, every two hours. Digitaline may be used instead in doses of 0.0002 to 0.0005 gramme (gr. $\frac{1}{300}$ to $\frac{1}{120}$) daily for five to ten days. Cyanosis or depression of the heart's action may be relieved by:

B Ergotine,2.0 grammes;
Potassium acetate,6.0 gramme;
Powdered digitalis leaves,0.15 gramme;
Syrup of sarsaparilla,100.0 grammes;
Infusion of scoparius,100.0 grammes.

M. S. Give, in tablespoonful doses, every hour.

The ergotine relieves the arterial tension, and the potassium acetate and digitalis are equally useful as diuretics. During the continuance of the erysipelas, the patient is kept strictly on a milk diet. An important part of the treatment is the avoidance of complications, such as endocarditis, otitis, etc. To secure this, antiseptics of the mucous membranes should be practiced. The following is used as a gargle, every four hours:

R Betanaphthol,0.20 gramme;
Sodium borate,15.0 grammes;
Mint water,200.0 grammes;
Distilled water q. s. ad 1 litre.

M.

The nasal chambers also should be looked after and antiseptics secured by application of mentholated vaseline, or similar preparation. With regard to the antistreptococcic serotherapy it has given no results, as the mortality, in cases in which it was tried, remained the same as by the former methods of treatment.

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OUR NEGLECT OF PSYCHIATRY.

One of the serious defects in the scheme of medical education at the present time in the United States is the almost total neglect of the subject of mental diseases. In many of our medical schools didactic lectures on mental disorders alone are given. The teaching of psychiatry by didactic lectures is a farce, because of the many intricacies of the subject. In others there are from four to six clinical lectures given in the course of the year, and the student gets a brief glimpse into a field of wide extent and one beset with more difficulties than any other branch of internal medicine. In even the best of our universities psychiatry is more inadequately taught than any other subject in the curriculum. Not only is the subject neglected in medical schools, but the peculiar conditions whereby the insane are isolated and herded together in large and mostly distant asylums makes it impossible for the practitioner to fill the gap which a defective education has made. Further, he has practically no post-graduate opportunities.

This lamentable ignorance on the part of the general practitioner has a far reaching significance. Were the subject of mental diseases better understood by physicians in general, there would be fewer crimes, fewer destitute families, fewer lost fortunes, less inebriety, and less abandonment; and a large total of misery, sickness, crime, and premature death would be prevented if the early stages of many insanities were better appreciated. The homi-

cide of Mrs. Lamb, the mother of Marjorie Lamb, is a striking illustration in point. Not many years ago a great corporation became involved, and thousands of stockholders, large and small, lost their fortunes, by reason of an undetected mental disorder in one of the responsible heads of the company. Widespread poverty, distress, a score of suicides, and many petty misdemeanors resulted from this crash, one of many due to a similar disease. Of the nearly 3,000 persons admitted into the Bellevue psychopathic pavilion in New York last year, one fourth had committed some petty misdemeanor, a felony, or a gross act in violation of the law, because of mental disease.

We are well aware that there have always been great difficulties in the way of adequate clinical teaching in psychiatry in this country, but these difficulties might be reduced almost to a parity with those that attend clinical teaching in most cases of acute bodily disease. Such instruction must be given almost exclusively in hospital wards, and can hardly be given at all in the lecture rooms and amphitheatres of the schools. It seems highly desirable, therefore, that a large hospital for the insane should be readily accessible from any school which is to teach psychiatry satisfactorily. Unfortunately, however, an extensive tract of land appears to be indispensable to a well conducted lunatic asylum.

SERUM THERAPY FOR EXPERIMENTAL INFECTIONS WITH DIPLOCOCCUS INTRACELLULARIS.

The New York Department of Health's commission turned its experiments, mentioned in our last issue, to account as the basis of an attempt to influence the progress and termination of the infection through the employment of antisera prepared from the diplococcus. The use of an homologous antidiplococcus serum resulted in the recovery of several monkeys from an experimental infection with *Diplococcus intracellularis*. The best results were obtained when the serum was injected into the subarachnoid space, either simultaneously with the organism or six hours later. An experiment in which the serum was used successfully by subcutaneous injection requires suitable repetitions.

Normal monkey serum, when injected simultaneously with a quantity of culture which would cause death in a control animal within twenty-four hours, appeared to hasten the fatal outcome. On the other hand, when normal serum was injected simultaneously with a dose of culture which was on the border line of the lethal, it appeared to have a certain definite protective value. Flexner does not attempt to apply the results of these experiments to

the treatment of cerebrospinal meningitis in man. While the experimental results do not appear very hopeful for this method of treatment of human cerebrospinal meningitis, it is not improbable that more active antisera may be produced if appropriate means of immunization are adopted. Such antisera may possibly be of value in the treatment of cerebrospinal meningitis in man by direct spinal inoculation or by intravenous or even by subcutaneous injection. In human cases in which the course of the disease is very rapid no beneficial results could be expected, but in the cases which pursue a less fulminating course benefit might follow, provided the treatment was used in the early stages of the infection, before too severe structural changes had taken place in the nervous system. The fact that normal serum exercises some protection in cases of low virulence of the infective organism might be taken advantage of in cases of human infection. Normal human serum may be, of course, obtained in suitable amounts for such a therapeutic procedure. In view of the very serious nature of the disease, this method of treatment deserves careful consideration.

PREGNANCY AND HEART DISEASE.

Peter's well known aphorism relative to the influence of pregnancy on valvular affections of the heart has for some time been known to be of restricted application. Quite recently Dr. Jules Bernard (*Thèse de Bordeaux*, 1906) has collected a number of clinical facts, taken for the most part in the service of Dr. Voron, which tend to show that pregnancy is quite normal in more than half the patients presenting cardiac lesions, as Vinay pointed out some time ago.

It is quite difficult to formulate any general rule relative to the tolerance of cardiac patients to pregnancy. The accidents may be early or tardy in appearance in relation to each pregnancy considered by itself and in successive pregnancies. Usually they do not appear until after several pregnancies, when the overworked myocardium finally gives way. Cardiac symptoms only infrequently arise during labor itself, being more common during pregnancy, often in the beginning, or in the puerperium. Spontaneous abortion is infrequent. On the other hand, induced abortion appears to be a serious affair in cardiac subjects whose symptoms are of sufficient intensity to indicate an interference, and consequently any intervention should be carefully considered. The physician is not often consulted relative to these questions, or at least medical advice is not always followed.

On the other hand, the question as to whether or not a woman with cardiac disease may nurse her

child is frequently asked. Now, it may be said that at present accord appears to be unanimous that a woman who has gone through pregnancy, with well compensated cardiac lesions, may, at least during the first few months, nurse the child without any inconvenience. She may possibly suffer some malaise, but this is without importance. Even if the patient presents some slight cardiac disturbances during pregnancy, it is quite safe to allow her to nurse, but it goes without saying that the child must be carefully and regularly weighed in order to make sure that it is being sufficiently nourished, and, on the other hand, the mother should be attentively watched from the standpoint of her general health.

ETHICS AND ETIQUETTE.

In one of those delightful historical analyses for which Dr. James G. Mumford, of Boston, is becoming famous (*Boston Medical and Surgical Journal*, April 25th) he gives us an entertaining and illuminating sketch of the way in which, from the earliest period down to and including our own times, ethics has had to contend with etiquette in the conduct of medical affairs—the sublime with the trivial, even the snobbish. Bright still shines the lamp lighted by Hippocrates, dimmed though its glow has been for all too frequent and protracted periods by the glare of the pretender's torch. The right to practise medicine has from the remotest times been hampered by the behests of religious hierarchies and temporal potentates. But that is no stigma on the medical profession; the real humiliation lies in the fact that the profession itself has at times imposed conditions of status that can hardly be regarded as far short of snobbishness.

The contest between real and sham ethics is traced by Dr. Mumford from the earliest times of which we have any clear knowledge down to the present day. Through all these centuries too many of the great men in medicine have "looked upon their rivals as knaves." At the present day those who disagree with an assertive man are too often regarded by him as fools. It is not very long since men of deserved eminence were "embroiled over matters of procedure and technical rights of practice." "Barber surgeons," Dr. Mumford goes on to say, "encroached upon the field of surgeons, and surgeons encroached upon the preserves of physicians. Bone setters proclaimed the ignorance of the faculty in general, and lithotomists attempted to show that they alone were competent to cut for stone." Sylvius attacked Vesalius, Goumelen opposed Paré, the French Academy derided Harvey, and Pott inveighed against Hunter. In many instances the big wigs of the profession were prigs,

and their line of action hardly deserved the dignity even of such a trivial name as etiquette.

All the requirements of ethics are fulfilled by a physician when, having acquired the best training attainable and constantly sought to add to his stock of knowledge and to cultivate wisdom, he does his best for his patients and treats all mankind, including his fellow practitioners, with justice and kindness. It is nothing higher than etiquette that can tempt him to depart from such a line of conduct. Etiquette is by no means to be despised, but its use as a prop for sham dignity can deceive only gudgeons. We are not yet altogether free from the strained etiquette of old times—the etiquette that, as Dr. Mumford reminds us, led Butler and Cervantes to lampoon the medical profession. We may add that probably Molière also was so impressed with the hollowness of the airs assumed by the physicians of his time as to feel antipathy toward the whole array of medical men. We have to a great degree emancipated ourselves from the old narrowness, but let us free ourselves from it entirely.

FORMALDEHYDE DISINFECTION AND CONFLAGRATION.

Professor La Wall's communication, entitled *Danger of Fire in Formaldehyde Disinfection*, which we publish in this issue, is one of great importance. Disaster caused directly by an attempt to do good seems doubly unfortunate. It would be extremely discreditable to a sanitary officer—at least he would so look upon it—if he were to set fire to a house by trying to save its occupants from infection, and little less so if his procedures resulted in the destruction of articles of personal property, however moderate might be their value.

Professor La Wall does not believe that the method of disinfecting rooms by mixing potassium permanganate with a solution of formaldehyde need be abandoned on account of the danger of fire, but he is undoubtedly right in pointing out the risk and calling attention to the necessity of carefulness in the application of the method. There are several substances used in medicine, either as remedies or as disinfectants, that may do injury by explosion, by deflagration, or in some other way, unless certain precautions are observed. It is necessary, therefore, that the requisite precautions should be made known. Commissioner Dixon, then, has made an important move in the public interest by causing Professor La Wall's communication to be published.

The precautions recommended by Professor La Wall are that only small quantities of the chemicals should be used, at least in any one container, that the containers should be placed in larger ones containing water, that care should be taken to do away

with all extraneous sources of ignition, such as jets of burning gas, pilot lights, and stove fires, and that the generators of gaseous formaldehyde should be so placed that any flame which may possibly rise from them will not be in dangerous propinquity to inflammable objects. The middle of the room, we presume, ought usually to be chosen, and it might be well to affix to each container an unbrellalike contrivance, of ample expanse, to check the undue ascent of any flame that might be kindled. Such a device, we suppose, would not interfere with the necessary diffusion of the gas, and it could be provided without materially increasing the expense of the process. The outer container holding water would sufficiently interfere with any dangerous transmission of heat downward or laterally. Possibly a mechanical device for securing a gradual admixture of the permanganate and the formaldehyde solution would prove preventive of the development of a flame. Evidently this convenient and efficacious means of disinfecting rooms must be rendered safe.

THE "CHANGE OF LIFE" IN MEN.

We fancy that it is with some sense of humor that Dr. R. Romme contributes to the *Presse médicale* for March 30th a review of a Bordeaux thesis entitled *Contribution à l'étude de l'âge critique (l'âge critique chez l'homme)*, by M. Valleteau de Mouilliac. The gist of the thesis is that, at about the age corresponding to the "change of life" in women, there frequently occurs in men a period of sexual impotence, comparative if not absolute, accompanied by overweening sadness (*tristesse*).

Now, we are willing enough to admit that a man's copulative vigor is somewhat impaired at the age mentioned, but usually the impairment is only temporary, and we cannot concede that whatever "sadness" may possess him is owing to failure, complete or partial, of the functional activity of the "interstitial testicle," for that element of the testicle, as we understand it, is not concerned in the production of seminal fluid or in the erigibility of the penis, but solely in the elaboration of an internal secretion.

ALLEGORY IN ADVERTISING.

Pictorial accessories do not seem to be generally undervalued in the preparation of advertisements. Though they sometimes verge on solemnity, they usually purport to be humorous. We do not remember to have seen any that were quite so touching as one that recently appeared on the cover of the *Münchener medizinische Wochenschrift*, embellishing the advertisement of a remedy for gonorrhœa. A nymph partially clad in a fabric hardly more substantial than a dream is reclining in a weblike struc-

ture, like a spider lying in wait for more flies. The web is encircled by a serpent biting its own tail. Esculapius or some other worthy grasps the snake's tail also. Two men who appear to be in a dissatisfied state of mind are intently regarding the siren.

News Items.

Change of Address.—The E. H. Colgrove Company, medical booksellers, 107 Wabash Avenue, Chicago.

A Dispensary for the Treatment of Tuberculosis was opened at the Jewish Hospital, Philadelphia, on Monday, May 6th.

The Dean of Harvard Resigns.—Prof. William L. Richardson, dean of the Harvard Medical School, has tendered his resignation, which has been accepted.

Pennsylvania's Osteopathic Bill Vetoed.—Governor Stuart has vetoed the bill recently passed by the Pennsylvania State Legislature creating a fourth examining board composed of osteopaths in the State of Pennsylvania.

Dr. Ravenel to Lecture in Berlin.—Dr. Mazyck P. Ravenel, of Charleston, S. C., has been invited to deliver an address on the etiology of tuberculosis, before the Tuberculosis Conference in Berlin, in September.

The Portland (Me.) Medical Club held its regular meeting on Thursday evening, May 2nd, at the Columbia Hotel. Dr. Edwin Wagner Gehring read a paper on Routine Physical Examination. Dr. Harold Pingree was the host of the evening.

Compressed Air Illness Among Tunnel Workers will be the subject of a paper by Dr. Seward Erdman, which is to be read before the eleventh annual meeting of the Quiz Medical Society, to be held at the University Medical Club, New York, this Saturday evening at 7 o'clock.

Philadelphia Personals.—Dr. W. M. L. Coplin has been elected Medical Director of the Jefferson Hospital.

Dr. Walter H. Pannell, of Buffalo, N. Y., is registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

The Buffalo Academy of Medicine.—At the regular meeting of the section in surgery, held in the rooms of the academy in the public library building, on Tuesday, May 7th, Dr. William C. Phelps presented a paper on Urethral Stricture and Dr. James A. Gardner presented a paper on Vesicle Calculi, giving a report of ten cases.

The Russian Pirogoff Surgical Society.—The committee of arrangements for the twenty-fifth anniversary of this society announces that this anniversary will be celebrated at St. Petersburg by a solemn meeting in the hall of the Pirogoff Museum, 25 April st. 7, at 2 o'clock on the afternoon of May 8, 1907.

The Louisiana Health Conference.—The second annual conference arranged under the auspices of the Louisiana State Board of Health, which took place at Opelousas on May 2nd, 3rd, and 4th, was most successful in every respect. An elaborate programme was presented, including papers covering almost the entire range of State medicine.

The Society of Medical Jurisprudence, New York.—The regular meeting of this society will be held on Monday evening, May 13th, at 8 o'clock, in the Academy of Medicine. The paper of the evening will be: Various Degrees of Responsibility and Qualifications of the Insane Before the Law, by Dr. William Hirsch.

The Camden (N. J.) County Medical Society.—At the meeting of the Camden County Medical Society, held on Tuesday, April 23rd, Dr. S. G. Bushey was elected president; Dr. Paul Mecray, vice-president; Dr. Daniel Strock, secretary; Dr. A. H. Lippincott, treasurer; Dr. Alfred Cramer, historian; Dr. H. H. Sherck, reporter; Dr. W. A. Wescott, censor; and Dr. E. L. B. Godfrey, trustee.

The Memphis Hospital Medical College.—The twenty-seventh annual graduation exercises of this institution were held in the auditorium of the college on April 27th, sixty-six students being granted diplomas. The address to graduates was delivered by Hon. J. K. Vardaman, Governor of the State of Mississippi, who concerned himself principally with the relations of the physician to the family.

A Dinner to Dr. Van der Veer.—More than one hundred former students of Dr. Albert Van der Veer tendered him a banquet at the Ten Eyck Hotel, at Albany, on May 2nd. Among the speakers were Dr. Joseph D. Bryant and Dr. Thomas H. Willard, of New York; Dr. Frederick C. Curtis, Dr. Thomas Wilson and Dr. Samuel B. Ward, of Albany.

The Clinical Society of the Jewish Hospital, Brooklyn.—The first meeting of this society was held Friday evening, May 10th, at 8:30 o'clock. Its membership consists of the house, visiting, and dispensary staffs, and its object is to enable its members to present all cases of interest that may occur in their service. The meetings will be held monthly at the Jewish Hospital, St. Mark's and Classon avenues, Brooklyn.

Dr. Neff and Dr. Coplin Exchange Posts.—Dr. W. M. L. Coplin has resigned his post as Director of Health and Charities of the City of Philadelphia, being succeeded by Dr. Joseph S. Neff, who in order to accept the office resigned his position as medical director of Jefferson Hospital, though retaining office as president of the medical staff of the hospital. Dr. Coplin has been elected to succeed Dr. Neff as medical director of the hospital.

Chairs to be Filled in the Medical College of Virginia.—Announcement is made that the following chairs are to be filled in the Medical College of Virginia, at the meeting of the governors, which will be held on May 21: Practice of medicine, clinical dentistry, and operative technique and orthodontia. Applications for these chairs may be forwarded with testimonials to Dr. Christopher Tompkins, dean of the faculty.

Health Inspection to be Under the State Board of Health in Massachusetts.—The new health bill for the State of Massachusetts provides for the division of the State into fifteen health districts, each of which is to be under the care of a State Inspector of Health, to be appointed by the Governor, and who shall report to the State Board of Health. The new health inspectors are to be vested with all the authority and power which is now vested in the Inspection Department of the District Police.

The Missouri University Will Not Build at Kansas City.—The Missouri State University authorities have been in communication with the officials of Kansas City, with a view to securing some pledge as to hospital clinical facilities, with the idea of establishing a graduate medical institution of a high class in Kansas City. The city officials, however, decline to make terms which are acceptable to the university authorities, and it is said that the college will probably be established elsewhere.

Civil Service Examinations for the State and County Service.—The State Civil Service Commission will hold examinations on May 25, 1907, for a number of positions, among which are the following: Coroner's physician, Albany county, \$600; Night Superintendent Erie County Hospital, \$420 and maintenance. The last day for filing applications for these positions is May 18th. Full information and application forms may be obtained by addressing Charles S. Fowler, chief examiner of the commission, at Albany, N. Y.

The Health Problem Discussed in Maine.—At the meeting of the Maine Academy of Medicine and Science, held at the Columbia Hotel on Wednesday evening, May 8th, the subject assigned for discussion was Milk, Its Production, Care and Value as a Diet. The speakers were Prof. Gilbert M. Gowell, M. S., of the Maine Agricultural Experiment Station of the University of Maine; Sidney C. Thompson, proprietor of a large dairy and formerly State Dairy Inspector; and Dr. Walter E. Tobie, chairman of the Portland Board of Health.

Visiting Surgeons Dine in Philadelphia.—On May 6 a dinner was given by a number of Philadelphia surgeons, at the Rittenhouse Club, to surgeons who were en route to Washington to attend the Triennial Congress of American Physicians and Surgeons. The guests were Dr. John C. Munro, Boston; Dr. George E. Brewer, New York; Dr. John B. Murphy, Chicago; Dr. Robert Abbe, New York; Dr. N. P. Dandridge, Cincinnati; Dr. J. M. T. Finney, Baltimore; Dr. J. Collins Warren, Boston; Dr. Dudley P. Allen, Cleveland; Dr. Roswell Park, Buffalo; and Dr. John F. Binnie, Kansas City.

The American Academy of Medicine.—The thirty-second annual meeting of this academy (specializing in medical

Every reputable college bred physician is eligible for membership in this academy, and it invites all who are interested in the medical aspect of the social problems of the times to unite in its study of these problems. Blank applications and literature may be obtained from Dr. Charles McIntire, secretary, 52 North Fourth Street, Easton, Pa.

Medical Fees Discussed in Lawrence, Mass.—The Lawrence (Mass.) Medical Club met at the Essex House in that city on April 22nd, with Dr. M. S. McGauran in the chair. A paper was read by Dr. H. W. Manahan on Multiple Neuritis, in which several cases were described. A committee was appointed to take into consideration the holding of a tuberculosis exhibit in Lawrence. The reduction in the fees paid by life insurance companies to medical examiners was discussed, but no action taken. A committee was appointed also to prepare a new fee table for the use of the physicians of Lawrence.

The American Electrochemical Society.—The eleventh annual meeting of the American Electrochemical Society was held in Philadelphia on Thursday and Friday, May 2nd and 3rd. The sessions of the society were held in the lecture room of the Harrison Laboratory of Chemistry of the University of Pennsylvania. The following officers were elected for the ensuing year: President, C. F. Burgess, of Philadelphia; vice-presidents, E. A. Acker, A. H. Coles, and W. H. Walker; managers, E. F. Reber, S. S. Sadtler, and K. Kolenburg; treasurer, Peter G. Salom; secretary, J. W. Richards.

Scientific Society Meetings in Philadelphia for the Week Ending May 18, 1907.—*Monday, May 13th*, Section in General Medicine, College of Physicians; Wills Hospital Ophthalmic Society. *Tuesday, May 14th*, Philadelphia Paediatric Society; Botanical Section, Academy of Natural Sciences. *Wednesday, May 15th*, Section in Otolaryngology, College of Physicians; Association of Clinical Assistants of Wills Hospital, Franklin Institute. *Thursday, May 16th*, Section in Gynecology, College of Physicians; Section Meeting, Franklin Institute; Medical Society of the Woman's Hospital. *Friday, May 17th*, American Philosophical Society.

Summer Courses at the College of Physicians and Surgeons.—Announcement is made that Columbia University will continue during the summer of 1907 the course in medicine and surgery for the benefit of practising physicians who desire opportunities for additional study and investigation and of properly qualified medical students. The courses, which are open to men only, will be thoroughly practical in character. Instructions will begin on Monday, June 3rd, and continue until Saturday, August 31st, except in the course of obstetrics, at the Sloane Maternity, which will begin on May 15th and conclude on September 16th. The courses will vary in length from three to five weeks.

Free Antitoxine in Illinois.—A bill now before the Illinois State Legislature provides for the appropriation of the sum of \$119,200 by the State Board of Health for expenditure supplying diphtheria antitoxine without cost to the patient. Included in the appropriation is an item for \$30,000, to be expended during two years, for the purchase of antitoxine to be delivered free to diphtheria patients in Illinois outside the city of Chicago, that city already supplying antitoxine free. Two years ago, at the last session of the Illinois Legislature, the appropriation for this purpose was \$83,320, showing a substantial increase for the current year.

The Medical Society of the County of Steuben, N. Y.—The annual meeting of this society will be held at Bath, on Tuesday, May 14th. The programme arranged for the occasion includes the following: Address by Dr. Charles O. Green, of Hornell, president of the society; Recent Progress in the Treatment of Epilepsy, by Dr. William P. Sprattling, of Craig Colony, Sonyea; Acute Otitis Media, by Dr. B. A. Barney, of Hornell; Intestinal Fistula, by Dr. A. L. Beahan, of Canandaigua; The Doctor Outside of the Medical Profession, by Dr. J. L. Miller, of Corning; The Business Side of Medical Practice, by Dr. H. B. Nichols, of Pulteney; The Value of Blood Examination, by Dr. Deyo P. Mathewson, of Bath.

In Memory of Dr. John T. Hodgen.—The twenty-fifth anniversary of the death of Dr. John T. Hodgen was the occasion for a memorial meeting held under the auspices

of the St. Louis Medical Society, at the hall of the Young Men's Christian Association at Grand and Franklin avenues, St. Louis, on April 28. The meeting was presided over by Dr. John C. Morfit, president of the St. Louis Medical Society, and Dr. Warren B. Outten, chairman of the committee of arrangements. Among the speakers were Dr. Joseph H. Matthews, of Louisville, Ky.; Dr. Outten, Dr. Charles H. Wallace, of St. Joseph, Mo.; Dr. Henry C. Fairbrother, of East St. Louis; and Dr. LeGrand Atwood, of Ferguson, Mo.

The International Conference on Opium.—The plan to hold an international conference on opium is attracting a good deal of attention, and it seems quite probable that such a conference will be held and that the United States, China, Japan, England, Holland, Germany, and France will participate. The suggestion has been made that Major Edward C. Carter, of the Medical Department of the United States Army, is particularly well fitted to represent the United States if such a conference is held. Major Carter was a member of the commission appointed by Secretary Taft as governor of the Philippines to inquire into the use of, trade in, and laws pertaining to opium in Eastern countries. The report of this commission, which was printed by the War Department, contains an immense amount of valuable information, and the present agitation in favor of an international conference is probably due in part, at least, to the recommendations contained in this report.

Charitable Bequests.—The executors of the will of Edward T. Dobbins have paid the following legacies to charitable institutions: Scholarship in the Philadelphia College of Pharmacy, \$25,000; Hospital of the Women's Medical College, \$10,000; Christ Church Hospital, \$10,000; Bethesda Home, Chestnut Hill, \$10,000; Southern Home for Destitute Children, \$10,000; Hayes Mechanics' Home, \$10,000; Burlington County Hospital, Mt. Holly, N. J., \$5,000; Home of Rest, \$5,000; Home for Aged and Infirm Colored Persons, \$5,000; Children's Hospital, \$5,000; Home for Destitute Colored Children, \$5,000; Home for Incurables, \$5,000; for a free bed in the Women's Medical College, \$3,000; Home for Aged Women of St. Luke's Church, \$1,000. By the will of Francis T. Hardy, St. Joseph's Home receives \$500. By the will of Mary A. McMahon the Little Sisters of the Poor and St. Joseph's Home for Homeless Boys receive \$500 each. Felix Isman has donated a piece of ground at the corner of Tenth Street and Clarkson Avenue to the Jewish Hospital. By the will of John C. Dudley, St. Joseph's Orphanage for Boys, St. Vincent's Home, the House of the Good Shepherd, and the Little Sisters of the Poor become residuary legatees. By the will of Samuel A. Heilner, the Methodist Hospital of Philadelphia receives \$10,000. By the will of James Henry Smith, St. Luke's Hospital and the Orthopaedic Hospital of New York each receive \$100,000.

The Reorganization of Tulane University Medical Department.—At a recent meeting of the Board of Administrators of Tulane University, a number of changes were announced in the teaching staff of the medical department, which, on the advice of a committee which has been working out the details for several months, will be practically reorganized. Dr. Isadore Dyer, who has been made professor of diseases of the skin, will become associate dean of the faculty, and will succeed the present dean, Dr. Stanford Chaillé, at the end of the term of 1907-1908. Four of the professors have reached the age for retirement and would be retired on July 1, 1907, unless special arrangements were made for their retention. Of these Dr. Souchon has asked to be retired on a Carnegie pension at the end of the present session. Dr. Chaillé, Dr. Ernest S. Lewis, and Dr. John B. Elliott will retain their chairs until the end of the session of 1907-1908. On the retirement of Dr. Souchon his chair is to be divided into separate professorships of anatomy and clinical surgery. At the close of the session other similar changes are to be made. The salaries of the professors and lecturers will be readjusted at the close of the session 1907-1908.

Wistar Institute of Anatomy.—The advisory board of anatomists of the Wistar Institute of Anatomy met in Philadelphia on April 15th, 16th, and 17th. The advisory board consists of Dr. Charles S. Minot, of Harvard University; Dr. George S. Huntington, of Columbia University; Dr. Simon H. Gage, of Cornell University; Dr. G. Carl Huber and Dr. J. P. McMurrich, of the University of

Michigan; Dr. F. P. Mall and Dr. L. F. Barker, of Johns Hopkins University; Dr. H. H. Donaldson, Dr. George A. Piersol, and Dr. E. G. Conklin, of the University of Pennsylvania. Dr. Milton G. Greenman is the director of the institute. The board approved of the work of the year, which has been principally in neurology. It recommended the reproduction of original models for distribution among teaching anatomists, the cost of reproduction to be borne by those receiving the models. It recommended the reproduction of lantern slides from original drawings, which might be loaned to teaching anatomists. A preliminary discussion was held on the proposition of awarding medals for meritorious research; no conclusion was arrived at. A preliminary discussion was also held concerning the publication of original monographs; no conclusion was arrived at upon this question. These matters will be discussed further at the next annual meeting.

Philadelphia Bureau of Health Statistics.—During the month of March, 1907, in the Division of Medical Inspection of the Bureau of Health of Philadelphia, 3,720 inspections were made, excluding schools; 615 fumigations were ordered; 63 cases were referred for special diagnosis; 5,301 visits were made to schools and 683 children were excluded; 371 cultures were taken; 130 injections of antitoxine were given; and 231 vaccinations were done. In the Division of Vital Statistics, 2,613 deaths, 2,392 births, and 319 marriages were recorded. In the Division of Milk Inspection, 7,496 inspections were made of 159,755 quarts of milk, of which 834 quarts were condemned. Thirteen samples were submitted for chemical examination, and 858 samples for microscopic examination. In the Division of Meat and Cattle Inspection, 4,856 sanitary inspections were made, of which 15 were found unsanitary; 4,856 inspections of dressed meats were made, of which 464 were condemned; 1,119 postmortem examinations were made, of which 63 were condemned. In the Division of Disinfection 176 fumigations were made for scarlet fever, 353 for diphtheria, 358 for typhoid fever, 225 for tuberculosis, and 350 for miscellaneous diseases. Twenty-seven schools were fumigated. In the Bacteriological Laboratory 1,653 cultures were examined for the presence of bacillus diphtheriæ; 560 specimens of blood were examined for the serum reaction of typhoid fever; 865 specimens of milk and 147 specimens of sputum were examined. Six disinfection tests were made. The free antitoxine distribution amounted to 2,700,500 units. In the Chemical Laboratory 151 analyses were made.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending May 4, 1907:

	May 4.		April 27.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	88	23	100	18
Smallpox	3	..	1	1
Varicella	74	..	96	..
Measles	531	12	477	17
Scarlet fever	492	19	534	26
Whooping cough	56	9	60	11
Diphtheria	342	38	339	39
Tuberculosis pulmonalis	445	189	407	227
Cerebrospinal meningitis	27	20	20	17
Totals	2,061	310	2,034	356

Society Meetings for the Coming Week:

MONDAY, May 13th.—New York Academy of Medicine (Section in Neurology and Psychiatry); Society of Medical Jurisprudence, New York; Corning, N. Y., Medical Association; Waterbury, Conn., Medical Association.

TUESDAY, May 14th.—New York Academy of Medicine (Section in Public Health); Buffalo Academy of Medicine (Section in Medicine); Medical Society of the County of Rensselaer, N. Y.; Practitioners' Club of Jersey City, N. J.; Medical Society of the County of Schenectady, N. Y.

WEDNESDAY, May 15th.—New York Academy of Medicine (Section in Genitourinary Diseases); New York Society of Dermatology and Genitourinary Surgery (private); Woman's Medical Association of New York City (New York Academy of Medicine); Medicolegal Society, New York; New Jersey Academy of Medicine, Jersey City; Buffalo Medical Club (annual).

THURSDAY, May 16th.—New York Academy of Medicine; German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society.

FRIDAY, May 17th.—New York Academy of Medicine (Section in Orthopædic Surgery); Clinical Society of the New York Postgraduate Medical School and Hospital; East Side Physicians' Association of the City of New York; New York Microscopical Society.

The Mortality of Baltimore in April, 1907.—An unusually large number of fatal accidents was reported by the Health Department in the monthly report for April, issued on May 1st. The total number of deaths from accidents during the month was 41. This was 14 more than was reported during the same month last year. The report also showed an increase in the number of cases of measles and deaths due to heart disease. There were 917 deaths during the month, as compared with 898 for 1904, 896 for 1905, and 910 for 1906, for the corresponding month, comprising 358 white males, 324 white females, 127 colored males, and 108 colored females. There were 205 deaths of children under five years of age, being 22.36 per cent. of the whole number of deaths. There were 679 births reported during the month, comprising 291 white males, 278 white females, 56 colored males, and 54 colored females. The following infectious and contagious diseases were reported during the month:

Diphtheria and pseudomembranous croup	71
Scarlet fever	19
Typhoid fever	35
Measles	503
Whooping cough	182
Varicella (chickenpox)	6
Tuberculosis	26
	62
Total	904

The principal causes of death were:

Typhoid fever	17
Measles	21
Diphtheria and pseudomembranous croup	5
Influenza (la grippe)	7
Dysentery	2
Erysipelas	2
Septicæmia	5
Tuberculosis pulmonalis	104
Other tuberculous diseases	14
Cancers	44
Congestion of the brain (apoplexy)	29
Tetanus	1
Heart diseases	109
Bronchitis	19
Pneumonia	101
Diarrhea and enteritis under 2 years of age	9
Diarrhea and enteritis over 2 years of age	3
Bright's disease	92
Puerperal septicæmia	1
Old age	23
Suicides	7
Accidents	41
Homicides	4

Statement of Mortality of Chicago for the Week Ending April 27 1907, compared with the preceding week and with the corresponding week of 1906. Death rates computed on United States Census Bureau's figures of midyear populations—2,107,620 for 1907, 2,049,185 for 1906:

	April 27, 1907.	April 20, 1907.	April 28, 1906.
Total deaths, all causes	678	617	621
Annual death rate in 1,000	16.77	15.26	15.80
Sexes—			
Males	360	329	367
Females	318	288	254
Ages—			
Under 1 year of age	141	106	124
Between 1 and 5 years of age	85	86	49
Between 5 and 20 years of age	48	40	37
Between 20 and 60 years of age	258	261	275
Over 60 years of age	146	124	136
Important causes of death—			
Apoplexy	19	10	12
Bright's disease	43	37	37
Bronchitis	22	19	19
Consumption	55	81	81
Cancer	30	27	32
Convulsions	10	10	7
Diphtheria	13	12	4
Heart diseases	63	50	48
Influenza	7	3	6
Intestinal diseases, acute	30	42	28
Measles	5	7	..
Nervous diseases	27	15	22
Pneumonia	118	103	117
Scarlet fever	17	11	11
Suicide	8	8	8
Typhoid fever	3	4	9
Violence (other than suicide)	31	29	35
Whooping cough	6	11	2
All other causes	171	128	127

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

MAY 4, 1906.

1. Observations Relating to the Nature of Atrophy of Intestinal Origin, By DAVID L. EDSALL.
2. Hemolysis in Pernicious Anemia, Augmented by Uremic Retention, Reported in a Case, By HUGO A. FREUND.
3. The Food Which in the Work of the Surgeon Approaches That of the Physician, By CHARLES C. ALLISON.
4. The State Board and the College Diploma, By MURRAY GALT MOTTER.
5. Contribution to the Study of Erythema Induratum (Bazin), By LUDWIG WEISS.
6. The Preferable Method of Anterior Fixation of the Uterus When the Abdomen is Open, By H. S. CROSSEN.
7. A Series of Interesting Gynecological and Obstetrical Cases, By THOMAS S. CULLEN.
8. Treatment of Traumatic Gangrene, By VAN BUREN KNOTT.
9. Is Eyestrain Ever an Ætiological Factor in Epilepsy? By H. O. REIK.

1. **Observations Relating to the Nature of Atrophy of Intestinal Origin.**—Edsall proposes the following hypothesis in reference to atrophy of intestinal origin in infant: Clinically, it is quite clear that most atrophic infants do well, provided they are not already far advanced toward death, if human milk can be given them; while with even the most capably conducted artificial feeding, they usually have, at best, a precarious and long struggle for existence, and very often go slowly, but persistently, toward death. It seems, then, that the difficulty consists in making use of milk of foreign species. The difficulty does not lie simply in accomplishing the absorption of the elements of the heterologous milk. It has occurred to him that the disturbance may be the result of disorder of the ferment function of the intestine. That is, when the protein of the food is progressing in the course of its breakdown the final attack by the ferment of the intestine does not occur or is ineffectual; that the protein complex is torn apart more or less completely by the pepsin and trypsin, but that fragmentation sufficiently complete, in order that the structure may be rebuilt in a new form entirely homologous with the patient's tissues, does not take place. Granting the absence or serious reduction of this ferment in cases of atrophy, one of two things may be conceived of as occurring as a consequence; in the first place, it might be that the protein would be fragmented to various stages short of absolute completeness, to albumoses, peptones, simpler nonprotein aminoacid complexes (heptides), and in more or less considerable extent, to free aminoacids, and that these would then be reconstructed; but the synthesis taking place without sufficient preceding fragmentation, the product of synthesis is not the normal one, but is more or less hybrid in character. The infant would have his circulation and tissues supplied with more or less markedly foreign protein, while normal infants receive homologous protein. The artificially fed infant who receives imperfectly broken down, and hence improperly reconstructed protein, has manifest difficulties in his way in carrying out metabolic processes; and the most evident difficulty would be in tissue construction. In attempting to use it to construct tissue, he would be obliged to go through the difficult task of disintegrating again, and then completely reconstructing it; while, when the tissues are, as is normally the case, served with homologous protein, it would seem evident that the process of construction and repair of the tissues would be comparatively easy. The second idea conceivable as the result of absence of the intestinal pro-

of the theory of reversibility of ferment action. Instead of entering the circulation as hybrid reconstruction products, the more or less completely fragmented products would themselves go into the circulation, and use of them by the tissues, in the synthesis of new tissue, would be much the same difficult process as in case they had been made into hybrid protein.

5. **Contribution to the Study of Erythema Induratum (Bazin).**—Weiss gives three chief points of diagnosis of erythema induratum Bazin: Formation of subcutaneous deep seated nodules, more easily recognizable by touch than by sight. They develop into hard deep seated indurated nodes, not adherent to the skin at first, but becoming so later. The skin is at first purplish, then as the nodes become larger and work toward the surface it changes into a dull violaceous hue. In size they occur from that of a cherry or even double its size. They also occur on both sides of the Achilles tendon. Their cause is eminently chronic, their development and behavior tardy and of slow activity. In those rare instances when they break down, necrosis sets in on the summit of the node in one, rarely in several places, attended by a scanty seropurulent discharge. The final scarring and pigmentation is then not so pronounced as that of an ulcerous scrofuloderma. As regards their ætiology, the association of erythema induratum in half of the cases with the tuberculous taint, its occurrence chiefly in women sometimes also affected with circulatory disturbances, has been alluded to. In more than 50 per cent. of cases the tuberculin test proved positive. To reconcile this ætiological discrepancy, Whitfield in 1900 and again in 1905 asserted, that there exist two well characterized types of the affection; a tuberculous and a nontuberculous. The former, attacking young women, is of an indolent character and presumably due to the living tubercle bacilli; the latter, occurring in middle aged women affected with circulatory disturbances, is of a rheumatic nature, more painful, prone to break down and not allied to tuberculosis.

8. **Treatment of Traumatic Gangrene.**—Knott proposes the following treatment of traumatic gangrene: Estimate as exactly as possible the line between the diseased and healthy soft parts. Under anæsthesia make a most careful and complete disinfection and cleansing of the skin, puncturing all bullæ, and remove all discharges, envelop the gangrenous area in a sterile towel up to the line selected and then, at this point, make a circular amputation, cutting through soft tissues and bone at the same level. Ligate carefully all bleeding points, including none of the perivascular tissue in the bite of either the forceps or the ligature. Leave the wound open, not introducing a single suture, and apply moist dressings of gauze saturated with salt solution, these dressings to be changed from two to four times in twenty-four hours, as the circumstances of the particular case demand. After seven to ten days, if the wound is perfectly clean and the condition of the patient favorable, the classic circular amputation may be made by dissecting up the flap already outlined and sawing the bone at the proper level. The advantages of his treatment are that by it we may speedily and with the minimum of shock remove from an enfeebled and exhausted patient the source of infection, namely, the gangrenous tissue. We may frequently make the amputation at a lower point than would be possible by the old method, because soft tissues whose vascular connections are left undisturbed are less apt to slough. The freest possible drainage is provided for a sufficiently long time. If the disease stops at the line first chosen, no unnecessary sacrifice of tissue has been made, as the flaps have been defined at the lowest limit of safety, and the bone would necessarily have to be

several at the same points at the second operation. If the limits of the disease have not been placed sufficiently high, the same procedure may be repeated with less danger to the patient than a typical reamputation. Patients too weak and prostrated by sepsis to withstand a typical amputation may endure this much shorter procedure and be built up during the interval before the second operation is necessary.

MEDICAL RECORD.

MAY 1, 1907.

1. Pulmonary Tuberculosis: Some of the Details of Its Modern Hygienic Treatment Which Can Be Applied in Treating the Patient at His Own Home.
By HERBERT C. CLAPP.
2. Surgery in Diabetes.
By JOSEPH WIENER.
3. Rare Forms of Chorioiditis: One Variety Due to General Malarial Infection and One to Autointoxication from Intestinal Ptomaines.

By CHARLES STEDMAN BULL.

4. The Treatment of Typhoid Fever and Pneumonia.
By LEONARD WEBER.
5. Pus Tubes in the Male. Treatment by Injections Through the Vas Deferens.

By WILLIAM T. BELFIELD.

6. The Preappendicitis State.
By JOHN G. SHELDON.

2. **Surgery in Diabetes.**—Wiener says that the principal dangers of operations upon diabetics are: 1. The anæsthetic. 2. Infection. 3. Hæmorrhage. Ether and chloroform should be avoided as much as possible. From all reports ether is a little less dangerous than chloroform in these cases. Nitrous oxide, spinal anæsthesia, and local anæsthesia should be the methods of choice. If local anæsthesia is used, only small quantities of fluid should be injected into one locality to prevent too much stretching of the tissues. Many major operations can be done under nitrous oxide if given by a skilled anæsthetist. We must distinguish between diseases due to diabetes, and those that occur independently of the disease. All necessary operations for diseases not due to diabetes should be performed just as in ordinary patients. The abnormal products (acetone, diacetic acid, beta-oxybutyric acid, lactic acid) which circulate in the blood in diabetes do harm, (a) by injuring the tissues and making them prone to infection; (b) by acting as contributing factors in producing premature arteriosclerotic changes. Arteriosclerosis plays a very important rôle in producing diabetic gangrene. There are two kinds of diabetic gangrene: (a) That caused by changes in the arteries and veins; (b) that caused by the effect of virulent bacteria on weakened tissues. We should always endeavor to transform wet gangrene into dry gangrene. If more than three toes are affected, especially if there is any cellulitis, a high amputation is generally indicated. If the infection is progressive a high amputation should be done. If in doubt about the site of amputation, a high amputation will give the best results. If more than one gramme of ammonia is excreted in twenty-four hours, operation had better be postponed until by careful diet the amount of ammonia is considerably reduced. The prognosis does not depend on the percentage of glucose in the urine, but on the degree of acid intoxication. A strict meat diet will reduce the amount of sugar, but it will often bring on fatal coma by increasing acidity. Sodium bicarbonate given before and after operation can do no harm and may do good.

3. **Rare Forms of Chorioiditis.**—Bull remarks that chorioiditis due to general infection and to autointoxication from intestinal ptomaines is not often met with by the ophthalmic surgeon. The prognosis as to vision in these cases is good, especially if the patient gradually recovers from the general toxic infection. As regards the treatment of these cases, before the administration of any drugs specifically directed towards the

chorioiditis, it is at first wise to introduce such dietetic and therapeutic measures as seem best indicated to regulate the digestive tract, for such measures will essentially improve or cure the chorioiditis, after failure of all other forms of treatment. The treatment should later consist of the administration of iron, arsenic, and strychnine, the two latter drugs being given separately, so that the dose of each may be increased or diminished according to indications. Under this treatment, the patches of exudation lose their yellow color, and become paler, slowly diminish in size and become less clearly defined, the red ring rapidly fading away. At the periphery of the fundus the patches disappear entirely, while those in the vicinity of the posterior pole of the eye are more or less permanent, though in several patients, after a lapse of three years, they were distinguished with difficulty.

5. **Pus Tubes in the Male.**—Belfield states that pus infection of the seminal tube, including the vesicle, appears to be quite as frequent as pus infection of the Fallopian tube in the female. It is, however, not so often recognized, for its usual symptoms, pyuria, frequent and painful urination, and partial or complete retention of urine, are usually referred to the bladder and prostate, and the patient therefore treated for cystitis and prostatitis. The infections of the seminal tubes are three—the gonococcus, pyogenic bacteria, and the tubercle bacillus. The pus infections of the seminal tube are extensions from the deep urethra; they result from (1) gonorrhœa, (2) stricture, (3) prostatic concretions, and other causes of prostatic suppuration in middle aged and elderly men. Invasion of the seminal vesicle by the gonococcus induces the symptom complex usually considered indicative of prostatic abscess—frequent and painful urination, complete retention of urine terminated by a sudden discharge of pus, often an ounce or two, into the urethra. These phenomena are usually due to abscess formation in the seminal vesicles or in the utricle. Stricture of the bulbous urethra favors pus infection, which, beginning in the poorly nourished tissues, extends backward through the deep urethra into the seminal duct and vesicle, at times even to the epididymis. As the infection may extend forward in the urethra also, and thus produce a pus discharge from the meatus, the entire clinical picture simulates a gonorrhœa, and by physicians who neglect to examine the pus with the microscope it is often so called, to the disgust and indignation of the innocent patient. The nongonorrhœal infections of the seminal tube in men over forty years of age are, like everything else causing bladder symptoms in these patients, labeled "prostatic hypertrophy"; and they do indeed cause the same symptoms, including even complete retention of urine. The author uses an operation which he describes. It consists essentially in opening the vas, stitching the cut edges to the skin, and injecting through a curved hypodermic needle any chosen solution into the proximal vas; this liquid traverses the vas and ampulla and enters the seminal vesicle. By digital massage from the rectum, the injected liquid can be expressed into the urethra if desired. Through the fistula daily injections of the vesicle can be made so long as seems necessary, after which the fistula is easily closed. Complete traverse section of the vas may safely be made, if preferred, since anastomosis of the cut ends and restoration of the lumen is easily accomplished. For injections through the vas the solutions commonly employed in the urethra are used; but the first injections should not exceed thirty to sixty minims, lest spermatic colic and retention of urine be provoked. The influence of the seminal ducts upon the bladder and its sphincter suggests an explanation of the cause and cure of "irritability" of the bladder in some cases.

BRITISH MEDICAL JOURNAL

London: 1907.

1. *Pulsus Paradoxus vel Pulsus Inspirations Intermittens.* By S. J. BARR.
2. *The Pulsus Bisferiens.* By T. LEWIS.
3. *On the Part Played by the Calcium Salts in the Blood and Tissues.* By W. B. BELL.
4. *Further Observations on the Etiology and Pathology of Peptic Ulcer.* By F. B. TURCK.
5. *Case of Repeated Abdominal Section for Perforation of Gastric Ulcers.* By W. M. WILLIS.
6. *A Case of Cellulitis Following Infection by an Organism Set Free by the Wounding of an Old Blind Diverticulum of the Large Intestine.* By G. H. MAKINS.
7. *Dislocated Spleen with Torsion of Pedicle Complicating Pregnancy; Removal of Spleen; Delivery at Term.* By H. MEEK.
8. *A Note on Haffkine's Antiplague Vaccine.* By T. C. LUCAS.
9. *A Case of Chloroma.* By T. H. BUTLER.
10. *Albumosia and the Duration of Albuminuria in Cholera.* By V. N. BRAHMACHARI.

1. **Pulsus Paradoxus.**—Barr, in discussing the effects of respiration upon the circulation, states that the thorax contains both an aerial and a blood vascular cavity, and any diminution in the thoracic pressure affects both these cavities. In inspiration both cavities are enlarged, but as they are complementary to each other, they will be variously affected by the suction, according to the freedom of inflow. In ordinary oral breathing the air enters so freely that there is scarcely any negative pressure, and consequently the circulation receives very little assistance; but in deep nasal breathing there is a great negative pressure, and so the blood rushes on in the veins and capillaries, and the arteries are rapidly drained and the pulse disappears. The effect is more pronounced in those who have got not only low blood pressure and soft pliant arteries, but who also have large superficial veins in the arms. In such cases there is greater scope for draining the arterial branch, and so the arteries are more completely emptied, and therefore take longer to fill. The phenomenon is better observed when the arm is depressed than when it is elevated, the arteries being more contracted, and the veins being comparatively empty. In cases with high blood pressure or rigid arteries, the respiratory pump can have very little effect upon the pulse. This respiratory phenomenon, the so called pulsus paradoxus, exists in the leg as well as in the arm. In many cases the pulse is more affected by rapid emptying than by defective filling of the arteries; such is apt to happen in many cases of mediastinitis, extensive pleuropericardial adhesions, moderate left pleural effusion, etc., where the lungs cannot fill up the enlarging thorax or encroach upon the heart. The phenomenon is well marked in cases of laryngeal diphtheria in elder children with firm chest walls, but it is not seen in very young children where there is almost complete obstruction of the larynx, because the soft pliant costal cartilages are sucked in and the negative pressure thus neutralized. If the venous return from the arm is obstructed without shutting off the arterial supply, the pulse will not be obliterated at the wrist. In conclusion, therefore, the writer states that in cases of pulsus paradoxus the systole of the left ventricle may be delayed or abolished for one or more beats, owing to defect in the diastolic tension in the left ventricle; and the aspirating effect of the thorax causes a sudden emptying of the veins to fill up the vacuum in the chest, and with this removal of the obstruction to the capillary flow there is a simultaneous depletion of the arteries. The pulsus paradoxus is due to one or both of the following causes, namely, defective filling or rapid emptying of the arteries. In the former case a weak right heart and a large lung reser-

voir are important factors, and in the latter a weak respiratory pump and low blood pressure are the causal agents.

2. **Pulsus Bisferiens.**—Lewis, in discussing what is called pulsus bisferiens, or palpably double pulse, by means of sphygmograms and cardiograms, and concludes that the only condition constantly related thereto is a greatly dilated and hypertrophied left ventricle. This type of pulse is usually described as having two beats, the second of which is really a reinforcement of a prolonged systole. No case should be looked upon as one of pulsus bisferiens in which the apices of the two waves are separated by a time interval of less than one tenth of a second, and in which the second wave is not prominent. The condition is far from rare; in twenty unselected cases of aortic regurgitation, a double topped pulse was distinctly appreciable in thirteen. In three it could be seen in the vessels of the neck. There appear to be two types of pulsus bisferiens, the one associated, the other unassociated with arteriosclerosis.

3. **Influence of the Calcium Salts.**—Bell has studied the part played by the calcium salts in the blood and tissues, with special reference to their influence in regard to the female genital functions. He enunciates the belief that there are three calcium periods in a physiological sense. First, the period of growth, when the young person or animal requires all the calcium salts obtainable for the formation and growth of the bony skeleton. Secondly, the period of reproduction, when a calcium equilibrium as regards growth is reached, and an "excretion" of the excess occurs. This is most obvious in the reproductive processes of women, when large quantities of the calcium salts are first given up to the foetus and then for the formation of milk, during which the menstrual function is in abeyance. It may be that pregnancy is terminated when the foetus ceases to absorb (or receive) calcium salts from the mother's blood and a large accumulation occurs in her system, bringing about contraction of the uterine muscles. The third period is that of late life, when no calcium salts are required for the building up processes or for those of reproduction. These salts then accumulate in the tissues, especially in the vessels, atrophy occurs, and the individual gradually declines.

4. **Peptic Ulcer.**—Turck, after feeding animals, principally dogs, with a certain strain of bouillon cultures of *Bacillus coli communis* for several months, spontaneous or induced, found genuine peptic ulcers in the stomach or in the duodenum in every animal experimented upon, the ulcers causing death either by perforation or hæmorrhage. Certain changes in the blood serum and cellular changes found indicated a general process characterized by diminution of the normal protective bodies, resulting in autolysis. The blood changes and general condition seemed to be produced by the absorption of products formed in the gastrointestinal tract. Histological examinations of the induced peptic ulcers showed no round cell infiltration or other evidences of a healing process.

8. **Antiplague Vaccine.**—Lucas gives the results obtained by him with Haffkine's vaccine in the epidemic of plague occurring in India in 1906. A so called "curative" serum was also tried in 1,700 cases, but it was without effect on the mortality, which was at the rate of sixty-five per cent. But Haffkine's prophylactic vaccine has given excellent results. Of 1,300 people inoculated, five developed plague, of whom only one died. Twelve refused inoculation; of these six contracted the disease and three died. Of another series of 5,640 persons, only forty-five were inoculated, and none of them contracted the disease. Of the remaining 5,595 (uninoculated) 383 subsequently had the disease and 260 died. The vaccine, consisting of a culture of the

plague bacillus killed by heat, to which a minute quantity of carbolic acid had been added, was supplied in sealed glass tubes. The dose, varying from 0.2 c.c. to 0.5 c.c., was given subcutaneously at one sitting, except in pregnant women, who received two divided doses. Glass syringes, sterilized by the hot oil method, were used. The site of injection was the centre of the posterior surface of the upper arm. Abscesses developed in six out of 1,300 cases, although all antiseptic precau-

10. Albumosuria in Cholera.—Brahmachari has noted that albumose is constantly present in the urine of patients suffering from cholera, after suppression has ceased. In most cases it disappears from the urine along with the albumin. The amount varies from a mere turbidity to a distinct precipitate. It is characterized by the following reactions: 1. Not precipitated by heat. 2. Precipitated by nitric acid. Precipitate soluble on boiling and reappeared on cooling. 3. Precipitate granular and never crystalline under the microscope.

LANCET.

1897, 20, 107.

1. On the Lymphatic System of the Stomach.
By J. K. JAMIESON.
2. Suicide and Sanity.
By T. C. SHAW.
3. The Early Diagnosis of Consumption,
By J. HAY.
4. The Immediate and Ultimate Results of the Sanatorium Treatment of Pulmonary Tuberculosis,
By N. D. BARDSWELL.
5. On Ligatures and Buried Sutures, with Special Reference to Catgut,
By A. E. JOHNSON.
6. Some Indications for the Treatment of Cholera.
By N. H. CHOKSY.
7. A Case of Pressure on the Trachea,
By F. DE H. HALL.
8. The Successful Treatment of Tuberculosis and Leprosy by Means of an Albuminoid Metabolic Product, Chemically Altered, of a Bacillus Discovered at Boshof (Orange River Colony) in 1898.

3. Incipient Tuberculosis.—Hay deals with the question of the early diagnosis of consumption, especially as met with in dispensaries. Cough is almost invariably present as one of the first signs; it is due in some cases to congestion or catarrh of the lung, to pleurisy, or to early involvement of the larynx. The cough is usually short and ineffectual. Hæmoptysis, if genuine, is of paramount importance in the history. It may occur before there are any demonstrable physical signs in the lungs, and when associated with a history of cough, is almost pathognomonic. It is rarely profuse in the early stages, sometimes being only streaks in the expectoration. It may be due to hyperæmia of the parenchyma or bronchial mucous membrane, to softening of a small focus of disease and the opening of a minute vessel, to ulceration of a tuberculous patch in the bronchial mucous membrane, etc. Pain and tenderness in the chest may be of no moment or may indicate pleurisy. Tachycardia without pyrexia, but with constitutional disturbance, is occasionally the first symptom, or sometimes the case is taken for one of chlorosis. In considering the value of physical signs in the diagnosis, it must be borne in mind that (1) the localization of physical signs is of much greater moment than their quality; (2) it is a safe plan to attach much weight to the presence of certain signs, little weight to their absence; (3) it is always unwise to base a diagnosis on any one physical sign; and that (4) one very often meets with very definite variations from the normal in perfectly sound chests. Incipient pulmonary tuberculosis and influenza are frequently confused. The initial symptoms of tuberculosis are often diagnosed as influenza; an attack of influenza, with its consequent debility, may be followed by tuberculous infection; and, finally, influenza may light up a quiescent tubercular

5. Sterilization of Catgut.—Johnson discusses the various methods of hardening and sterilizing catgut. He admits that certain chemical methods of sterilization (*e. g.*, with iodine) give excellent results, but holds that heat is the ideal disinfectant. His method is as follows: The catgut, in ten foot lengths, is immersed for one hour in a one to one thousand solution of potassium bichromate, and then hung on frames to dry. Such catgut lasts from two to three weeks before being absorbed. To obtain a more durable catgut, lasting six weeks, the solution should contain one per cent. of potassium bichromate. The quantity of the solution is of no importance, but the same solution must not be used a second time. In the author's opinion suppuration retards absorption of catgut. The actual sterilization of the catgut is accomplished by sealing it up in glass tubes filled with xylol or with a mixture of xylol and absolute alcohol, and then heating the tubes in water. The glass tubing is washed thoroughly with water, then with methylated spirit, and dried before the fire. One end of the tube is then sealed with a blow pipe, about five feet of catgut is rolled into a hank and inserted, xylol poured in until the catgut is covered, and the open end of the tube sealed with the blow pipe. The tubes are then placed in an upright position in water heated to a temperature of 212° F. and kept there for one hour. When it is wished to use the gut, the tube is filed and broken. The writer has never succeeded in getting any growths on cultures made from gut prepared in this way. The cost is extremely small, each tube costing complete from three to five cents.

6. Treatment of Cholera.—Choksy gives the following indications for the treatment of cholera: 1. To destroy the virus and neutralize its toxins. For the first purpose various germicides have been used—quinine, carbolic acid, bichloride of mercury, etc. Mercury cyanide, in one tenth grain doses every two hours, is perhaps the best, the stools lessening in frequency and amount. Its only drawback is stomatitis during convalescence. To neutralize the toxins an antitoxic and bactericidal serum is required. 2. To supply the loss of fluid to the system depleted by the flux. For this we have the choice of three methods: (a) Transfusion of saline fluids; (b) hypodermoclysis; and (c) enteroclysis. Of these the last gives the best results, one pint of normal saline at 100° F. being given every four hours. Enteroclysis gives the best results in the advanced and collapsed stage of the disease. 3. To keep up the circulation and to restore and reestablish the functions of the kidneys. Here a mixture of caffeine, sparteine, and atropine works well. In addition hot water bottles and poultices may be used, together with dry cupping. 4. To nourish the patient, at the same time withholding all irritating nourishment. No alcohol, no milk, and no meal preparations is a salutary rule. Hot black coffee is the best form of nourishment at first, supplemented later by thin arrowroot gruel. 5. To tide the patient over the stage of reaction. If treatment be carried out as above, there is little danger here. An alkaline mixture may be given, but antipyretics are not necessary. 6. To treat complications and sequelæ. Of 395 patients treated as described, 203 died, a case fatality of 51 per cent. The average fatality of cases treated elsewhere by other methods during the same epidemic was 89 per cent.

LA PRESSE MEDICALE.

April 13, 1907.

1. Chronic Nephritis the Cause of Arteriosclerosis,
By O. JOSUÉ.
2. Necrosis of the Lower Jaw From Cutting of a Milk Canine Tooth,
By A. BROCA.
3. The Actual Cautery and Its Indications,
By P. DESFOSSÉS and A. MARTINET.

1. Concerning Extensive Healing of the Liver.—
By R. ROBERT.

1. **Chronic Nephritis the Cause of Arteriosclerosis.**—Jesse reports a case which seems to favor the theory that changes in the kidney form a cause of arteriosclerosis.

2. **Necrosis of the Lower Jaw from Cutting of a Milk Canine.**—Broca reports a case in which a boy, eighteen months old, signalized the cutting of his left canine tooth by a swelling of the left side of the lower jaw, osteitis, and finally necrosis. A cure was obtained by removal of the sequestrum with the temporary tooth and the germ of the permanent.

3. **The Actual Cautery.**—Desfosses and Martinet speak first of the use of the actual cautery in general medicine to destroy tissue, for its antiseptic action in supposedly poisoned wounds, and for the revulsive effects produced. He finds two contraindications to its use, the presence of fever and cardiac degeneration. In dermatology it is used for the destruction of lupus, superficial epitheliomata of the skin, mollusca, papillomata, warts, nævi, and other skin diseases. In general surgery it is employed for the revulsive effect obtained on inflammations of the serous membranes of joints and certain other forms of arthritis, for the direct effect on angiomas and hæmorrhoids, and also to check hæmorrhage. In otorhinolaryngology, it is used to reduce the hypertrophic condition of the mucous membrane of the nose, to destroy the follicular tissue in the pharynx known as granulations, to remove tonsils, and to destroy tuberculous neoplasms in the larynx.

April 27, 1907.

1. New Experimental Studies in Regard to the Cancer Poison. By MIRE, GERAUD, MANIN, and H. ROGER.
2. The Circulation of the Blood in the Liver.

By E. L. GERAUDEL.

2. **The Circulation of the Blood in the Liver.**—Geraudel asserts that the biliohepatic apparatus results from the union of two independent formations, the hepatic parenchyma and the biliary tree. Two independent circulations are annexed to these two formations, the portal vein is destined exclusively for the hepatic parenchyma, the hepatic artery exclusively supplies the biliary tree. Each of these circulations is described in detail.

LA SEMAINE MEDICALE.

April 27, 1907.

Sudden Death in Children, By L. CHEINNISSE.
MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

April 27, 1907.

1. Concerning Acute and Chronic Inflammation of the Pelvis of the Kidney, By LENHARTZ.
2. The Treatment of Grave Anæmia by Transfusion of Blood, By MORAWITZ.
3. Concerning Observations on the Living Spores of the Pallida, By EITNER.
4. A Contribution to the Study of Addison's Disease, By STURSBURG.
5. The Persistence and Hypertrophy of the Thymus in Basedow's Disease, By GIERKE.
6. Some Observations Concerning the Course of Typhoid in Inoculated and Noninoculated Groups of Men in the Troops in German Southwest Africa, By EICHHOLZ.
7. The Treatment of the Carriers of the Typhus Bacilli, By DEHLER.
8. Concerning the Experience with Kuhn's Apparatus for the Production of Stasis Hyperæmia of the Lungs in the Hospital at Slawentzitz, By STOLZENBURG.
9. Further Experiences With the Hyperæmia Treatment of the Lungs by Means of the Pulmonary Suction Mask, By K. HEN.
10. Investigation of the Mobility of the Heart, By HERZ.
11. The Discovery of the Cause of Cancer by Dr. H. Spude, By FISCHER.

1. Concerning Extensive Healing of the Liver.—
By R. ROBERT.

By DEUTSCHLANDER.

1. **Acute and Chronic Inflammation of the Pelvis of the Kidney.**—Lenhartz reports a case of this disease, of which five patients died, one of carcinoma, one of tuberculosis, and three of the disease itself. In two of the last cases the *Bacterium coli* was found in the pyelitis, in one Friedländer's bacillus. Several of the cases are reported with their temperature charts. In fourteen a marked connection between the relapses and the menses was evident.

2. **Treatment of Grave Anæmia by Transfusion of Blood.**—Morawitz reports six cases of serious anæmia from various causes in which he introduced 200 c.c. of defibrinated human blood into the median vein. In one case the transfusion failed to save the patient's life, in two cases the patients passed from under observation after a short time, and in the remaining three the result was good. He urges that this treatment should be tried in all cases where death from anæmia is threatened.

4. **Addison's Disease.**—Stursberg reports three cases of tuberculosis of the suprarenal capsules in which pigmentation was either absent or but slight. He alleges that in all cases in which there is a marked discrepancy between a comparatively good nutritive condition and a great weakness, tuberculosis of the suprarenal capsules should be thought of.

6. **Course of Typhoid When Treated by Inoculation and When Not So Treated.**—Eichholz reports sixty-eight cases of typhoid, thirty-four of which were treated by inoculations and thirty-four treated otherwise. The course of the disease in the inoculated cases was milder, as a rule, the average temperature was lower, no deaths occurred, there were two relapses, and only one case of severe hæmorrhage from the intestines. Among the noninoculated the average temperature was higher, three patients died, there were four relapses in one case, two in another, and one in another, the latter associated with mental disturbance; there were two cases of intestinal hæmorrhage, two cases of suppurative parotitis, and one of inflammation of the lungs. In other words, there were no deaths and only three serious complications among the inoculated, while there were three deaths and seven serious complications among the noninoculated.

8 and 9. **The Treatment of Diseases of the Lungs by Stasis Hyperæmia Produced by Kuhn's Pulmonary Suction Mask.**—Stolzenburg and Kuhn strongly advocate the adoption of this form of treatment in pulmonary disease. Stolzenburg's conclusions are that in this apparatus we have a valuable aid in the treatment of tuberculosis, in that its favorable effect is in many cases not only subjective, but also objective in its influence on the course of the disease. Its application is absolutely harmless with the observation of a slight degree of care. It is contraindicated in cases which incline to fever and in patients who have marked cardiac weakness. Kuhn, in his article, shows the effects of this treatment on the heart by sphygmographic tracings taken before and after its application. He also states that after the mask has been applied for an hour the number of both the end and the white blood corpuscles has been increased.

10. **The Mobility of the Heart.**—Herz asserts that the degree of mobility of the heart depends on three factors, the convexity of the thoracic vertebræ, the further to the left the apex beat is placed, and the yielding nature of the parts which limit the mobility of the heart.

12. **Hyperæmia Treatment of Tuberculosis of the Bones and Joints.**—Deutschländer says that the stasis should be maintained daily for one or two hours, should

give the impression of a red, acute form of inflammation, and may under certain circumstances cause pain. After the treatment has been continued for several weeks it is recommended that a rest for a few days should intervene. Tuberculous fistulæ and abscesses are best treated by a combination of suction and stasis hyperæmia. The hyperæmia treatment should be begun as early as possible, and be maintained long as an after treatment even when every external symptom of inflammation has disappeared in order to avoid a recurrence. Hot abscesses should be opened early. Cold abscesses and large collections of fluid may be punctured under suction hyperæmia, or iodoform may be injected. Immobilization is unnecessary with the hyperæmia treatment; on the contrary, slight movements are advisable to maintain the function of the joint, yet overexertion must be avoided.

LA RIFORMA MEDICA

April 6, 1907.

1. Contribution to Our Knowledge of Chronic Mastitis, By B. FORMIGGINI.
2. Glycogen in the Parathyroids of the Ordinary Animals and in Experiments, By PIETRO GUIZZETTI.
3. Borium Chloride in Therapeutics, By ERNESTO PESCI.

1. **Chronic Mastitis.**—Formiggin reports five cases of mastitis, which he studied with a view of increasing our knowledge of this disease. The age during which mastitis is most commonly seen is from twenty-one to fifty-seven. The disease occurs both in nulliparæ, and either during or outside of pregnancy. In four of the patients no exciting cause was found. In one there had been a traumatism. The duration varied from fifteen days to two years. Either breast is affected with the same frequency, the favorite location being the upper and outer part of the affected breast. The treatment need not be necessarily surgical. In young women especially, the internal use of iodides, the use of a binder, are expedients which may bring about resolution. In elderly women chronic mastitis may lead to cancer, and in such cases the removal of the breast is indicated.

2. **Glycogen in Parathyroids.**—Guizzetti found no glycogen in the parathyroids of young and adult guinea pigs, and of young rabbits. Glycogen was also absent in the external parathyroid of dogs, save in one young dog. In the internal parathyroids of dogs he found glycogen in several cases, but in very small amounts, and usually in some restricted portion of the organ. Possibly this glycogen in dogs is a relic of foetal life. In adult cats he always found glycogen in the parathyroids. The parathyroids of cats, therefore, correspond to the same glands in man, in infancy and childhood.

ROUSSKY VRATCH

March 31, 1907.

1. The Treatment of Hyperchlorhydria, By A. BICKEL.
2. On the Technique of Suturing the Abdominal Wall. (Removable Wire Sutures in Layers), By P. I. BUCHMANN.
3. The Treatment of Acute Inflammations of the Joints with Bier's Method of Artificial Hyperæmia, By A. B. ARAPOFF.
4. Elephantiasis of the Breasts, By V. L. BOGOLIUBOFF.

1. **Treatment of Hyperchlorhydria.**—Bickel, of Berlin, says that in the treatment of hyperchlorhydria drugs and mineral waters should play a subordinate rôle, while the chief measure should be a diet which produces the least possible amount of free hydrochloric acid. Speaking of the use of alkalies, he found that the best was sodium bicarbonate, which should be given half an hour before each meal in half a glassful of water, preferably combined with magnesium and sodium sulphates. The latter salts act as laxatives, and expel the neutralized excess of hydrochloric acid from

the stomach into the intestine. The diet consists of a simple breakfast at 7:30 a. m., of tea and cream, or cacao, and a roll and butter. At 10 a. m. a luncheon of a cupful of cream or a white of egg beaten with sugar, and a slice of bread and butter. At 1:30 p. m. a dinner, consisting of soup made without meat, meat extract, or condiments, i. e., a soup such as purée of potatoes, oatmeal, or vegetable. Well cooked meat, with fat, preferably white meat, e. g., stew without condiments or spices; mixed vegetables in the shape of a gruel, e. g., potatoes, rice, spinach, peas, beans, turnips, salad (boiled). When there is no "heart burn" the patient is also allowed sweet stewed fruit and pastries. Desserts of rice, starch, beaten white of egg, cream, are also allowed. The beverage should be simply water. At 4 p. m. a cup of tea or cacao, and possibly a slice of bread and butter. At 8:30 p. m. a supper of cold or hot meat, with vegetables as at the dinner; bread, butter, tender cream cheese, and tea, or simply water to drink. Mineral waters may be prescribed or a sojourn at one of the springs. But care should be taken not to use any waters which stimulate gastric secretion. The best (European) waters for this purpose are Karlsbad and the bitter Friedrichshall. Vichy and Hunyadi Janos tend to paralyze the secretion of hydrochloric acid. On the other hand, simple acid waters, alkaline-saline, and saline waters, such as Kissingen, Wiesbaden, Baden-Baden, Homburg, etc., stimulate gastric secretion. The mineral waters should be taken fasting, half an hour or an hour before meals, and not during meals.

2. **Technique of Abdominal Suture.**—Buchmann prefers removable metallic sutures in separate tiers for each class of structures in closing the abdominal wall. He also points out that better results are obtained by cutting through the sheath of one of the recti rather than through the linea alba.

5. **Elephantiasis of the Breasts.**—Bogoliuboff reports a case of marked elephantiasis of the breasts in a girl, aged eighteen. She had repeated attacks of acute mastitis, which were followed by a gradual enlargement of the mammary glands. Such repeated acute attacks are often the cause of sporadic elephantiasis. The removal of the diseased portions of the breast in this girl proved successful in checking the disease, as no recurrence had occurred six and a half years later.

THE JOURNAL OF NERVOUS AND MENTAL DISEASE.

April, 1907.

1. The Diagnostic Value of Lumbar Puncture in Psychiatry (*To be continued*), By JO L. POMEROY.
2. Report of a Case of Hysterical Mutism, By JOHN K. MITCHELL.
3. Symptoms Stimulating Brain Tumor Due to the Obliteration of the Longitudinal, Lateral, and Occipital Sinuses. A Clinical Case, By C. EUGENE RIGGS.

2. **Report of a Case of Hysterical Mutism.**—Mitchell observes that some degree of loss of speech is a common hysterical manifestation and in marked cases a most intractable one, the patients seldom recovering full power of voice after the aphonia has lasted some months. Now and then an instance of moderate grade loss of voice is temporary and passes off as the patient improves in general nutrition. Judging from experience in aphonia cases he felt doubtful after his first study of the case here reported as to how the disability would end. The hysterical origin of the trouble seemed certain from the first. The physician who had seen the patient immediately after the accident confirmed the author's suspicion of the very slight character of the direct injury and of the utter impossibility of the patient's having received the full current from the electric wire he struck against, which would almost certainly have killed him, and added the suggestive

point that the patient's family all showed neurotic tendencies. The final evidence needed came when the complete reversal of red and green in the color fields was discovered. Surface anesthesia or analgesia, so common with reversed color fields, was not found during the patient's first stay in the hospital, but was noted as present in the throat upon his second admission two months later. This completed the picture, to which the final touch was given by the dramatic manner in which speech was recovered. The patient went through a kind of parturition, pains, groans, writhings, and at last brought forth articulate speech, wholly unimpaired by its year of disuse. Total loss of speech from purely psychic causes, followed by sudden and complete recovery, must be hysterical, and is so rare that this is the only case observed by the author. Dr. Weir Mitchell, who saw the patient and studied him with interest, stated that he had never previously seen an instance of absolute hysterical mutism, and there is none on record.

May, 1907.

1. A Case of Epilepsy Associated with Acromegaly.
By WILLIAM F. SHANAHAN.
2. Gliomatosis of the Pia and Metastasis of Glioma.
By WILLIAM G. SPILLER.
3. Is Epilepsy a Disease of Metabolism? A Review of the Literature.
By J. F. MUNSON.
4. The Diagnostic Value of Lumbar Puncture in Psychiatry.
By J. L. POMEROY.

3. **Is Epilepsy a Disease of Metabolism?**—Munson observes that it has been and is the hope of all that by an exact study of the vital processes of epileptics during life and of their tissues after death, some light might be thrown on the nature of the disease. Patient and accurate pathological work has yielded no changes which can be found in cases of every form and duration, and many believe that the primary nature of the changes which have been reported is open to doubt. The cause of the disease, if there be one in an organic sense, is still to be discovered. He certainly does not deny the possibility of an organic lesion. There must be such a lesion, but he doubts whether this lesion is one which can be made visible by the methods of the pathologist. The absence of a visible lesion led to the assumption that endogenous poisons or metabolic disturbances were the cause of the disease. Clinical analogies to other autointoxications have led some to accept this view, but such analogies, while presenting contributory evidence, are not direct proof, a poison or a disturbance in metabolism must be demonstrated experimentally. The urine being the most easily obtained of the fluids of the body, has received the most attention, but without any absolute results. As regards the cellular composition of the blood no changes have been established as peculiar to the epileptic. The author concludes his article in saying: "While this review of the literature is an exceedingly meagre one, it will be seen that there are changes in the metabolism of the epileptic and in the toxicity of his body fluids. Just what these changes are and their time of occurrence is doubtful because of contradictory findings. The fact that some variation from the normal is almost always reported, makes one hopeful that further work along biochemical lines, conducted with the greatest care, using the most exact methods, carefully controlling every possible factor, and using a goodly number of cases, will in the end bring a solution of the problem."

4. **The Diagnostic Value of Lumbar Puncture in Psychiatry.**—Pomeroy says that to be of definite value the puncture must be repeated two or more times, at an interval of at least ten days. A constant negative finding is of more value than a positive one, for it rules out the presence of brain syphilis and parasymphilitic conditions. In general paralysis the lymphocytosis

is a constant and early sign, and is usually associated with a heightened albumin content. The same can be said for tabes. Lymphocytosis may occur in secondary and tertiary syphilis without clinical evidences of involvement of the nervous system, also it may occur in patients who give evidences from scars or other signs of old syphilitic infection. As a rule, the cellular increase in such cases is far behind that observed in paresis, and there is very slight albumin increase. Where inflammatory brain syphilis exists albumin increase may also appear. In arteriosclerotic insanity a positive finding points to a syphilitic process, such as softened foci following specific arterial disease. In brain tumors a negative finding is the rule. If a positive finding occurs, a syphilitic basis for the process can be taken for granted. Epilepsy shows negative findings; if otherwise the suspicion of brain syphilis is justified. Alcoholism in all its varieties gives negative results, if the finding is positive and there are no signs of nervous involvement an old syphilitic infection is to be taken for granted. Where symptoms of involvement of the nervous system are present general paralysis or brain syphilis is to be suspected. It is questionable in some cases even when symptoms of involvement of the nervous system are not present, in a positive finding with albumin increase, whether we are not dealing with an early paresis. A differential diagnosis is to be made between brain abscess and meningitis by the presence in the latter of increased cellular material. It cannot be enough emphasized that the lymphocytosis presents a singular disease sign, and only after consideration of all other clinical symptoms of the disease, should it be used to construe the case. When the findings are considered with due care to the possibilities, the results obtained from lumbar puncture are an important and oftentimes an invaluable aid to the diagnosis of obscure nervous and mental diseases. It is of especial importance in differentiating alcoholism, general paralysis, dementia præcox, epilepsy, brain tumor, and finally brain syphilis.

THE GLASGOW MEDICAL JOURNAL

April, 1907.

1. The Histological Diagnosis of the Endotheliomata,
By W. S. LAZARUS-BARLOW.
2. Blue Pigmentation of the Tympanic Membrane,
By JAMES KERR LOVE.
3. Two Cases of Eye Injury Caused by Burning: Result of Operative and Other Treatment, By JOHN ROWAN.
4. On the Value of the Tuberculoopsonic Index in Diagnosis (Concluded), By ELIZABETH T. FRASER.
5. Two Cases of Strangulated Ovarian Tumor, with Symptoms Suggestive of Other Conditions.
By JAMES WEIR.

6. The Auld Hoose.

4. **On the Value of the Tuberculoopsonic Index in Diagnosis.**—Fraser concludes that the tuberculoopsonic index in healthy persons ranges from 0.80 to 1.20, and at present there is no reliable evidence that it ever reaches beyond these limits. The level of the tuberculoopsonic index is not altered, so far as we know, by either of the following factors: (a) Nontuberculous disease (except some instances of pneumonia, diabetes, and whooping cough); (b) hereditary predisposition to tuberculosis. It may vary in cases of tuberculous disease from as low as 0.20 or 0.30 to as high as 2.40 or over. In about 75 per cent. of the cases the index is found above or below the normal limits at a first examination. In the remaining 25 per cent. of the cases a first examination will yield an index within these limits. These facts enable one to state that, when an index of over 1.20 or under 0.80 is recorded in any case, there is a strong probability of the presence of tuberculous infection. For the diagnosis of those cases in which the index is within normal limits, Wright's differential test, applied to the patient's blood serum

and to fluid from a pleural effusion, an abscess, etc., may be very useful in those cases where there is the possibility of obtaining fluid from a local focus of infection. The phagocytic test with heated serum may prove to be of value in those cases of tuberculosis where autoinoculations have taken place, and where the opsonic index (which is fluctuating) has been found within the normal limits at the first examination. There still remains, however, a considerable number of cases in which the opsonic index fails to give conclusive evidence of the presence of tuberculous infection. In these a definite diagnosis may be arrived at by the estimation of the patient's opsonic index before and after the inoculation of a small dose of tuberculin. This inoculation causes very little inconvenience to the patient, and is followed by no ill effects. An examination of the tuberculoopsonic index, therefore, may be made the ultimate appeal in all cases where a diagnosis of the presence or absence of tuberculous infection is required.

Proceedings of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-second Annual Meeting, held in Washington, on Tuesday, Wednesday, and Thursday, May 7, 8, and 9, 1907.

The President, Dr. FRANCIS P. KINNICUTT, of New York, in the Chair.

The President's Address was read by Dr. KINNICUTT. He referred to the deaths of Dr. James Stewart, of Montreal; Dr. Isaac E. Atkinson, of Baltimore; and Dr. Thomas Latimer, of Baltimore, members of the association, who had died since the last annual meeting. He mentioned the fact that some of the best work done in the laboratories and clinics of the United States and Canada was presented at the annual meetings of the association. He called attention to the critical phase which the discussion on the opsonic theories of Wright and his pupils had reached, pointing out the scientific importance of the practical, as well as the theoretical aspects of the discovery.

A new departure, and one which would be productive of much good, was the joint meeting with the American Physiological Association, at which acidosis would be discussed. Reference was made to the growing importance of the advice which the scientific physician was capable of giving concerning the management of certain of the public affairs of the individual States and of the nation.

The Treasurer's Report was read by Dr. J. P. CROZER GRIFFITH, of Philadelphia.

The Report of the Council was read by Dr. HENRY HUN, of Albany.

The Connections of the Occipital Lobes and the Present Status of the Cerebral Visual Functions.—Dr. ADOLF MEYER, of New York, pointed out the specific character of the cortex of the brain about the calcarine fissure, a type of cortex which was distinct from that of the remainder of the occipital lobe of the brain. The interior of the occipital lobe was made up of a number of fibre tracts, of which the tapetum, the corpus callosum fibres, the optic radiation, and the inferior longitudinal fasciculus were well known. In addition there were two tracts of fibres known as the external sagittal marrow and the internal sagittal marrow, which had been thought to be tracts of association fibres. These fibres were really, according to Meyer's studies, projection fibres of the optic apparatus which passed to and from the external geniculate body. The external sagittal marrow could be followed from the calcarine cortex to the external geniculate body and the internal sagittal marrow could be followed

from the external geniculate body of the calcarine cortex. The conclusions were drawn from studies of a brain from an idiot; a brain from a case of mind blindness following a symmetrical lesion of the Sylvian arteries; a brain from a case of softening of the posterior part of the occipital lobe, undermining the calcarine cortex; and a brain in which a bullet, in a case of suicide, had cut the optic radiation. The studies showed that it was insufficient to judge of a lesion of the brain by surface conditions, but that careful and accurate histological studies were necessary. The optic tracts might be subdivided further than they had been so far, and it was likely that other definite tracts might be determined by the application of histological methods.

Dr. L. F. BARKER, of Baltimore, called attention to the importance of such careful studies, both in the realm of diagnosis in neurology and psychology and for the understanding of visual and other brain functions.

Certain Features of the "Nervous Breakdown," with Special Reference to Treatment.—Dr. JAMES J. PUTNAM, of Boston, divided acute nervous breakdown, which might be due to traumatism, climatic influences, undue mental strain in school and college, and unusual business strain, into three periods: 1. The period of indecision. 2. The period of seeking equilibrium. 3. The period of improvement. In all individuals there was a period of preparation for the trials of life which, if it was of sufficient character, might produce immunity. For example, the football player and the soldier underwent a period of training for the accidents to which they were liable, so that when these accidents came they seldom broke down. In other individuals who had had a broad education on philosophical, ethical, and social lines the disappointments of life did not result in neuroses. The treatment of acute nervous breakdown should be largely educational. In the first stage the rest treatment might be indicated or the more specific methods of Janet and Froide. Later, the treatment might be physical in character, its object being to produce more energy in the individual. The author made a plea for more philosophical and ethical reeducation in patients of this class, teaching them to make the best of their conditions.

Dr. ADOLF MEYER, of New York, said that in the treatment of cases of acute nervous breakdown the consideration was not one of absolute ethics, but of habits. The physician should make a definite régime of the habits of his patient on the simplest basis for the patient's guidance.

Dr. CHARLES L. DANA, of New York, pointed out that in many cases of neurasthenia the condition was a psychosis which ran a definite course irrespective of treatment.

Dr. ABRAHAM JACOBI, of New York, said that many such patients presented myocardial changes which should be treated as much as the ethical and philosophical conditions. Such treatment would result in benefit to the patient.

Dr. PUTNAM said that in the acute stage of nervous breakdown the best treatment was by rest and encouragement. He believed that the psychoses always had a physical basis. He did not uphold teaching a particular systematic philosophy.

Dr. S. WEIR MITCHELL, of Philadelphia, said that conditions of emotional disturbance were sometimes due to physical breakdown, and that in other cases physical disturbances were due to emotional breakdown. Cases which began acutely were, in his opinion, extremely rare.

The Clinical Study of Aphasia.—Dr. CHARLES L. DANA, of New York, said in this paper that the old classification of aphasia had broken down in practice and in teaching. He proposed the following classifica-

tion, based on anatomical lesions as determined by the analysis of clinical symptoms and localization: 1. Pure cortical or motor aphasia (frontocapsular). The patient was unable to talk and had hemiplegia. There were no sensory disturbances; he could read, write, and understand, and had good general intelligence. 2. Cases in which there was only inability to read (parietooccipital). The patient could write, talk, and understand, and was otherwise normal; there might be some alexia and hemianopsia with some hemianæsthesia. 3. Sensory aphasia (temporal). The patient could not name objects; he could not understand; he had paraphasia; jargon aphasia, or confused speech; he could not read, write, or copy; he had temporary hemiplegia, with sensory disturbances. 4. Mixed aphasia (lenticulofrontal). The patient had lost all powers, as seen in cases of hemiplegia with aphasia.

Cases of mind blindness occurred only with bilateral lesions.

Dr. WILLIAM H. THOMSON, of New York, referred to three cases of aphasia.

Dr. M. ALLEN STARR, of New York, objected to the recent disconcerting attack of Marie on the anatomical classification of the aphasias. He believed that aphasia was not always a purely psychical process.

Dr. JAMES J. PUTNAM, of Boston, said that anatomical distinctions were very important in the classification of aphasia.

Dr. MORTON PRINCE, of Boston, referred to Marie's recent publication.

Dr. DANA said that he thought that Marie had not proved that Broca's convolution was not a speech centre. He thought that it was undoubtedly a speech centre.

Large Pericardial Effusion.—Dr. E. G. JANEWAY, of New York, exhibited a radiograph of a pericardial effusion. The patient had been tapped and fifty-four ounces of fluid removed.

The Presence of Inflammatory Masses in the Abdomen Simulating Malignant Growths.—In this paper Dr. E. G. JANEWAY, of New York, described several cases of masses in the abdominal cavity which had been diagnosed as "inoperable" tumors, but which had subsequently disappeared. In a girl, aged seventeen years, there was a mass in the left iliac fossa which disappeared in three months after it had been pronounced "inoperable." In a man, a mass in the right iliac fossa was diagnosed as sarcoma, and disappeared in a few months. In a man, a mass in the right iliac fossa, diagnosed as "inoperable," disappeared in three months. In a man, aged fifty-eight years, with a history of fifteen years of occasional weakness, pallor, and melæna, there was a firm mass in the left epigastric region, behind the stomach. An exploratory laparotomy was done, and behind a very vascular stomach a mass was discovered; the posterior wall of the stomach was much thickened. The tumor was considered "inoperable," and nine months later it had disappeared. Still later, the patient died from hæmatemesis. At the autopsy there was no sign of the mass. The thickened posterior wall of the stomach presented two open blood-vessels, from which the fatal hæmorrhage had come. Microscopically, the thickened area resembled a myoma. In two other cases tumors connected with the bile passages had disappeared. Such cases taught us not to be too hasty in making bad prognoses and serious diagnoses. It was quite possible that tumors which had disappeared while under treatment with electricity and x rays would have disappeared if not treated at all.

Dr. WILLIAM OSLER, of Oxford, England, divided the common varieties of such cases into those connected with the gallbladder and those connected with the cæcum and appendix. Recently attention had been called to such growths in the region of the sigmoid flex-

ure of the colon, and might be mistaken for diverticula, polypoid appendages or to the thickening following perforation by a foreign body. An early operation should be advised in all cases, even though it was but exploratory.

Dr. CHARLES BOND, of Richmond, Ind., referred to a case in which an abdominal tumor had disappeared.

Dr. A. MCPHEDRAN, of Montreal, referred to the fact that tuberculous peritonitis might end in recovery spontaneously. He cited two cases.

The Ætiology of Acute Pancreatitis.—Dr. H. U. WILLIAMS and Dr. F. C. BROWN, of Buffalo, said in this paper that they had found eighty-three cases of acute pancreatitis in literature. In thirty-six of these gallstones had been found, about forty-three per cent. The majority of these gallstone cases had been cases of acute hæmorrhagic pancreatitis. In nine of these cases gallstones had been found in the bile ducts at the time of the operation. The authors suggested that the passage of the stone dilated the diverticulum of Vater so that duodenal contents might be forced into the duct of the pancreas. It had been shown by the authors, by experimental injections in the cadaver, that eosin could be injected from the duodenum into a dilated diverticulum of Vater, and that it would thence enter the duct of the pancreas. They had succeeded in producing acute pancreatitis by the injection of the duodenal contents into the pancreatic duct of dogs. In the majority of cases disease had followed the manipulation or injection of the duct, but it was possible for the infection to come from the peritonæum. In order that autodigestion of the pancreas should occur, it might be necessary for the duodenal contents to enter the pancreatic duct, to supply enterokinase. Experimentally, the authors had found it impossible to produce pancreatitis by the injection of sterile enterokinase.

Dr. EUGENE OPIE, of New York, said that it was possible that gallstones lodged in the lower part of the bile passages might allow the duodenal contents to enter the pancreatic duct. In his experience such a condition had resulted in chronic pancreatitis. Acute lesions were most often produced by the injection of bile, and particularly the bile salts.

Dr. WILLIAMS said that the cases produced by the injection of duodenal contents showed less necrosis and more inflammatory reaction than those produced by the injection of bile.

The Calcium, Magnesium, Phosphorus, and Nitrogen Balances in a Case of So Called Phosphatic Diabetes.—Dr. L. F. BARKER and Dr. C. VOEGTLIN, of Baltimore, reported the case of a woman, aged thirty-nine years, who complained of nervousness, itching, polyuria, constipation, and loss of weight. Physical examination was negative, except that the patient was found to be obese and nervous. The appetite was increased, and there was polydipsia. Her metabolism was studied for eight days on a Folin diet, for a period before the absolute diet and for a period after the diet. The nitrogen, calcium, magnesium, and phosphorus balances were carefully kept. During the preliminary period there was high acidity with increased elimination of phosphorus. During the period on absolute diet there was a slight phosphorus retention with a high percentage of elimination of organic phosphorus. The administration of thyroid extract and calcium carbonate had no effect on the phosphorus elimination. Aside from the effect of the diet on the ammonia excretion, there was no change in the nitrogen metabolism. The ammonia ratio was eleven per cent. Both the ammonia ratio and the absolute ammonia elimination were high. The calcium output was high at first. During the dietary period twelve per cent. of the calcium of the food was eliminated in the urine, and eighty-eight per cent. in the feces. Fifty per cent. of the magnesium of the

food was eliminated in about fifty per cent. in the feces. The total acidity, determined with $\frac{N}{10}$ sodium hydroxide solution, using phenol phthalein as an indicator, was normally about 300. In the case under discussion it was 1,500 during the preliminary period. During the dietary period it averaged 700. On giving alkalies, the acidity was reduced. When the patient was nervous the acidity increased in spite of the administration of alkalies. The acidity was not due to acetone, diacetic acid, phosphoric acid, or uric acid. The cause of the acidity was not known. A large dose of levulose showed a normal carbohydrate metabolism, and the acidosis differed from that of diabetes.

Dr. OSLER said that the chief point of interest in this case was that any one would have said, from the symptoms, that the patient had diabetes. Repeated examinations, however, had failed to demonstrate glucose in the urine. He had regarded the case as one of prediabetes when he saw the patient.

Dr. A. E. TAYLOR, of Berkeley, Cal., said that at one time he had put himself on an ash free and alkali free diet. He continued to eliminate a certain amount of basic substances which must have been derived from his muscles and his nervous system. After about six days he became excessively nervous, and diacetic acid appeared in his urine. He then returned to a normal diet and his symptoms disappeared. It appeared that there was an equilibrium necessary between the organic and inorganic constituents of a diet.

Dr. BARKER said that inorganic salts were undoubtedly as necessary as protein, carbohydrates, and hydrocarbons.

The Relations Between Diabetes and Pregnancy.—

Dr. A. A. ESHNER, of Philadelphia, reported the case of a woman, aged thirty-four years, who presented the symptoms of diabetes for three years. She became pregnant; the glucose disappeared from her urine at the onset of pregnancy and remained absent until the expulsion of a macerated foetus, when it returned, together with the symptoms of diabetes. He had found thirty-three cases of diabetes complicating pregnancy in literature. In four cases diabetes developed during pregnancy, and in nine cases pregnancy occurred in diabetic women. Diabetes was uncommon during pregnancy in proportion as it is uncommon during the childbearing period. Exceptionally it had recurred during successive pregnancies. Pregnancy rarely occurred in diabetics, partly because diabetes in women was most common after the menopause, partly because of the debilitated general state of the diabetic patient, and partly because of the functional derangement and the structural alteration of the generative organs. The complication of the one condition with the other usually increased the gravity of the case. Often the foetus died *in utero*, or premature labor set in, the foetus dying at birth or shortly afterwards. The liquor amnii had been found increased, and in some cases it contained glucose. The mother sometimes died of the disease shortly after labor.

Dr. JAMES TYSON, of Philadelphia, referred to a case of diabetes complicating pregnancy.

Experimental Fibrinous Pleurisy.—Dr. OPIE described experiments for the study of the part played by ferments of the leucocytes in removing fibrinous exudates. Turpentine was selected for injection into the pleural cavity of dogs because many microorganisms possessed proteolytic ferments which might give to erroneous results. When a sterile inflammatory irritant, such as turpentine, was injected into the pleural cavity of the dog, a serofibrinous pleurisy was produced. The accumulation of fluid reached a maximum in three days, and had completely disappeared at the end of six days. Resolution of the fibrin began while fluid is still pres-

ent, the digestion taking place in the presence of a weak alkali. After the disappearance of the fluid the fibrin continues to digest itself, but only in the presence of a weak acid. It was possible that the carbon dioxide in the body acted as an acid, promoting the resolution of the exudate by the enzyme. So long as fluid was present in a pleural cavity, conditions existed which inhibited the digestion of the fibrin. In some cases a simple pleural effusion had been converted into an empyema.

Dr. S. SOLIS COHEN, of Philadelphia, asked if it was possible to produce an empyema without the presence of microorganisms.

Dr. OPIE said that careful bacteriological examinations had shown sterile fluids in these conditions.

On Certain Acoustic Limitations of the Stethoscope and Their Clinical Importance.—

In this paper Dr. LEWIS A. CONNER, of New York, pointed out that certain adventitious heart and lung sounds were heard better by the unaided ear than by the stethoscope. The murmur of aortic insufficiency of high pitch and blowing quality and the faint, high pitched type of bronchial breathing and amphoric breathing were the sounds in question. The common qualities of these sounds were high pitch, faintness, and a blowing or whizzing character. The fact was explained by the acoustic law that a high pitched sound was not so well transmitted through closed tubes, and when the tubes were elastic this peculiarity was accentuated. When the unaided ear was used the sound waves reached the labyrinth by the bones of the skull as well as by the auditory canal. When a stethoscope was used the sound waves reached the labyrinth through the auditory canal only. Chest sounds were composite and certain of their elements might bear a definite relation to the length of the stethoscope tubes, and might consequently be distorted. Students should be taught to use the ear as the chief auscultatory instrument, and should not be allowed to become dependent upon a stethoscope.

Dr. COHEN said that the subject was an important one. Students who used the stethoscope only often could not hear the sounds that he heard. The sole advantage of a stethoscope was in localizing a sound previously discovered by the ear.

Dr. JANEWAY said that he could hear the sounds of a deep seated pneumonia and a deep seated cavity with the ear, which he could not hear with a stethoscope.

Dr. JACOBI, Dr. E. P. JOSLIN, of Boston, and the president, agreed to the general statement that the ear should be relied upon for auscultation.

Dr. CONNER said that he thought that we had not yet reached the limit of the fallacy of the stethoscope, and he emphasized the serious aspect of the matter in relation to the teaching of students.

The San Francisco Medical Libraries.—Dr. RICHARD C. CABOT, of Boston, reported for the committee to assist in the reestablishment of the medical libraries in San Francisco. The committee had sent out circular letters asking that books be contributed. A considerable number of books had been received by the libraries in San Francisco as a result of this letter.

(To be continued.)

Book Notices.

A Pocket Formulary. By E. QUIN THORNTON, M. D., Assistant Professor of Materia Medica in the Jefferson Medical College, Philadelphia. New (Eighth) Edition, Revised. Philadelphia: Lea Brothers & Co., 1907. Pp. xxi-287.

This revision of a useful pocket medical formulary has been brought into accord with the new edition of the United States Pharmacopœia, which, it will be recalled, makes many changes in the strength of prepara-

tions, doubling some and cutting others as much as seventy-five per cent. The extent of revision necessary to make the *Formulary* fully representative of the new Pharmacopœia may be gathered from the fact that 123 drugs, preparations, and chemicals, have been added to the official *materia medica*. Besides this, there have been 106 changes in strength and 139 changes in the Latin titles. It is the hope of the compiler that the *Formulary* in its revised form will facilitate the transition from the old standard to the new. The usefulness of this handy sized volume would be much increased, in our opinion, by the addition of an index of drugs named in the formulas. This could be easily provided for by page references in the table of doses.

Catholic Churchmen in Science. Sketches of the Lives of Catholic Ecclesiastics who were among the Great Founders in Science. By JAMES J. WALSH, M. D., PH. D., LL. D., Professor of Medical History, Fordham University Medical School, and Professor of Physiological Psychology in St. Francis Xavier's College, New York. Philadelphia: American Ecclesiastical Review, 1906. Pp. viii-221. (Price, \$1.00.)

Dr. Walsh has here collected in a small volume a number of delightful biographies which have appeared during the past five years in current magazines. These biographies were prepared as material accumulated in the getting together of sundry lectures bearing on the growth of science in the Middle Ages, and we therefore are brought into pleasant and intimate relationship with Copernicus and his times, with Basil Valentine, the founder of modern chemistry, with Thomas Linacre, scholar, physician, and priest; with Father Kircher, scientist, orientalist, and collector; with Bishop Stensen; anatomist and father of geology, and with Abbé Haüy, the father of crystallography. Coming down to more modern times, we find an appreciative sketch of Abbot Mendel and his work on heredity.

We commend this little volume as authoritative and as one breathing a wide spirit of truth—a true catholicism—coming to us from the times of the renaissance. Furthermore, it brings into a better relief some of the misconceptions and misconstructions of many workers of those times, which misconceptions, like many fictions, have been handed down from writer to writer as authoritative. While not controversial, the work is one that deals with certain matters made the subjects of controversy in the struggle of the survival of thought forms, and the reader can obtain from it a clear view of the times with both profit and enjoyment.

Anæsthetics and Their Administration. A Textbook for Medical and Dental Practitioners and Students. By FREDERIC W. HEWITT, M. V. O., M. A., M. D., Cantab., Anæsthetist to His Majesty the King; Physician-Anæsthetist to St. George's Hospital, etc. Third Edition. With Illustrations. London: Macmillan & Co., Limited, 1907. Pp. xxxiii-627.

This third edition of this work (the first appeared in 1893) takes into consideration the new methods and appliances which have appeared, as stated by the author in his introduction. It treats of the history, pharmacology, and experimental physiology of general surgical anæsthesia (chapters I to IV); of preliminary considerations before anæsthesia (chapters V to VIII); of the administration, and the appliances for it, of nitrous oxide, ether, chloroform, ethyl chloride and bromide, ethylene dichloride, amylene, and methyl oxide. Ethylene gas, amyl hydride and chloride, ethyl nitrate, benzene, and turpentine, are also mentioned, but nothing is to be found about scopolamine, either alone or with other agents, while cocaine and adrenalin receive only a very short notice (chapters IX to XIII). Chapters XIV and XV speak of anæsthetic mixtures, chloroform and alcohol; chloro-

form and ether; chloroform, ether, and alcohol, etc. Chapter XVI is dedicated to morphine, but deals with it in a rather cursory manner. The management and treatment of difficulties, accidents, and dangers are described in chapters XVII to XIX, while chapter XX takes up the condition and treatment of the patient after the administration. Cases illustrating the subject are cited throughout the book.

BOOKS PAMPHLETS ETC RECEIVED

Modern Medicine, Its Principles and Practice. By CARL VON NOORDEN, Professor of Medicine and Foreign Authors. Edited by William Osler, M. D., Regius Professor of Medicine in Oxford University, England. Assisted by THOMAS McRAE, M. D., Associate Professor of Medicine and Clinical Therapeutics in the Johns Hopkins University, Baltimore. Volume I. Evolution of Internal Medicine, Predisposition and Immunity. Diseases caused by Physical, Chemical, and Organic Agents, by Vegetable Parasites, by Protozoa, by Animal Parasites; Nutrition, Constitutional Diseases. Illustrated. Philadelphia: Lea Brothers & Co. 1907.

Die Zuckerkrankheit und ihre Behandlung. Von Professor Dr. Carl von Noorden, Vorstand der 1. medizinischen Universitätsklinik in Wien. Vierte, vermehrte und veränderte Auflage. Berlin: August Hirschwald, 1907.

The Control of a Scourge, or How Cancer is Curable. By Charles P. Childe, B. A., F. R. C. S., Surgeon, Royal Portsmouth Hospital. New York: E. P. Dutton & Co. 1907.

Practical Physiological Chemistry. A Book Designed for Use in Courses in Practical Physiological Chemistry in Schools of Medicine and of Science. By Philip B. Hawk, M. S., Ph. D., Demonstrator of Physiological Chemistry in the Department of Medicine of the University of Pennsylvania. Philadelphia: P. Blakiston's Son & Co., 1907.

Die Behandlung der tuberkulösen Wirbelsäulenerkrankung. Von Dr. F. Calot, Chirurg am Hospital Rothschild. Uebersetzt von Dr. P. Ewald, 1. Assistent an der chirurgisch-orthopädischen Klinik von Prof. Dr. Vulpius in Heidelberg. Mit 120 Abbildungen. Mit einem Vorwort von Prof. Dr. Oscar Vulpius. Stuttgart: Ferdinand Enke 1907.

Miscellany.

One of Harvard Graduates on the Treatment of Clinical Teachers.—There is no denying the fact that the Harvard Medical School has done little for its clinical men except to give them titles which might prove of value in private practice. It has paid them very small salaries and given them absolutely no assistance in their clinical teaching. The school has received from many of its devoted clinical men, some of whom have made great sacrifices for its sake and have brought it great honor and reputation, much more than it has given them. Under present conditions, with the school giving its clinical instruction in hospitals which are under the control of others with underpaid clinical teachers who have limited terms of hospital service, and who are unable to select from the hospital staff and from the internes, and their assistants, the men they consider best fitted to teach and to advance the knowledge of clinical medicine, the school has about reached its limit of development. From now on the Harvard Medical School must have a new ideal to strive for, namely, well paid clinical instructors whose chief interests shall be teaching and scientific medical investigation. In other words, the clinical departments must be put on a true university basis like the laboratory departments and entirely freed from the outside influences which hitherto have controlled them.—*Science*, September 14, 1906.

American Medical Editors' Association.—The thirty-eighth annual meeting of this association will be held at Atlantic City on Saturday, June 1st and Monday, June 3rd, with headquarters at the Marlborough-Blen-

heim Hotel. This active association now numbers nearly 150 members, with many applications in hand for action at the coming meeting. An interesting programme has been prepared, and the following are among the papers to be presented: The Future of Medical Journalism, by James Evelyn Pilcher; Shortcomings of Physiology, the Chief Obstacle to Medical Progress, the Need of Editorial Intervention in Such Questions, by C. E. de M. Sajous; How Can We Make Medical Journalism Better? by W. C. Abbott; A Word or Two from an Ex-Journalist, by Samuel W. Kelley; The First Medical Journals, by O. F. Ball; The Psychology of Medical Journals from the Reader's Standpoint, by T. D. Crothers; Further Reflection on the Official Versus Independent Medical Journals, One Year's History, by William J. Robinson; Journalistic Suggestions from a Semidisinterested Standpoint, by William Porter; The Situation, by C. F. Taylor; Some Aspects of Medical Journalism, by W. F. Waugh; The Neglect of American Mineral Springs and Climatic Resorts by Our Medical Press, by G. T. Palmer; A Few Feeble Remarks, by W. A. Young; The American Medical Editors' Association, Past, Present, and Future, by Joseph MacDonald, Jr. The annual editors' banquet, which is always the social event of the week, will be held at the Marlborough-Blenheim Hotel on Monday evening, June 3rd.

The Fourteenth International Congress for Hygiene and Demography.—Synopsis of Rules and Regulations: The Fourteenth International Congress for Hygiene and Demography will take place in Berlin from the 23rd to the 29th of September, 1907. Besides the congress exhibits in hygiene and means of life saving will be arranged. The congress has for its object the scientific and practical improvements of all hygienic and demographic endeavors. Every person, gentleman or lady, engaged scientifically or practically in hygiene or demography, may become a member of the congress. But the committee of organization is privileged to debar all such persons which may not be deemed suitable. The fee for membership has been fixed at \$5.00 (20 marks). Relatives of the members of congress who are not capable of becoming members themselves, as well as frequenters of colleges or universities, may be admitted to the meetings and dispensations of the congress on payment of \$2.50 (10 marks). But such persons are not entitled to take part in the discussions and have no claim to the printed reports. Each member will receive one copy of the printed reports and of the protocol appearing at the termination of the congress, which ought not to exceed two volumes. The congress is divided into eight sections: Section I. Hygienic microbiology and parasitology. II. Dietetic hygiene, hygienic physiology. III. Hygiene of childhood and schools. IV. Professional hygiene and care of the working classes. V. Combating infectious diseases and care of the sick. VI. A, Hygiene of dwellings, townships, and waters. VI. B, Hygiene of traffic. Life saving. VII. Military, colonial, and naval hygiene. VIII. Demography. The sessions are divided into general and section sessions. The opening and the closing meetings are general sessions. Furthermore, joint meetings of different sections may take place. The official languages during the congress are German, French, and English. While the congress is in session a daily paper will appear, in which the order of the day, as settled upon by the presidents of the respective sections, notices concerning excursions, sight seeing, entertainments, etc., will be published. In the final session the motion of the Permanent International Commission is acted upon and the time and place of the next congress appointed. During the session the congress also decides as to whether the proposals made by the sections are to be accepted or rejected.

A Reductio ad Absurdum of Therapeutic Purism.—We reprint the following editorial from the *St. Louis Medical Review* of April 27, 1907:

On April 6th, the following resolution, proposed on March 21st, was tabled by the St. Louis Medical Society, seeing that none of its signatories appeared to speak in its support:

Resolved, That it be the sense of this society that we, as scientific physicians, should use and prescribe only those remedies which are recognized as official by the United States Dispensatory (*Pharmacopœia*) or the National Formulary, and as passed upon favorably by the Council of Pharmacy and Chemistry of the American Medical Association.

The resolution was signed by four members of the society and by one nonmember, who is not even a physician.

Let us consider this resolution a little more closely. It clearly lays down that no remedies of any kind whatsoever that have not been incorporated in the *U. S. Pharmacopœia* or the *National Formulary*, or approved as legitimate *materia medica* by the Council of Pharmacy and Chemistry of the American Medical Association ought to be used or prescribed by any member of the society. And this thesis is based upon the implied proposition that to do otherwise is to admit oneself not a scientific physician, because no scientific physician would use or prescribe any such remedy. *Per se*, the presentation of such a resolution to a local society is a small matter, but when it is considered that it is but a counterpart of a series of resolutions which are being presented throughout the territorial medical societies of the entire country, it assumes a graver aspect.

Such a resolution is open to three serious objections:—

1. *It is a grave interference with individual liberty.*—The American Medical Association, as well as the St. Louis Medical Society, and by implication all other constituent societies of the parent association, have both repudiated any intention of proscribing any physician on account of therapeutic methods, provided only that he does not proclaim himself a sectarian practitioner. But the whole is greater than the part. If, therefore, the society declines to interfere with a man's right to follow the dictates of his own conscientious experience as to the principles of drug selection in therapy, still less can it logically proscribe him for using any particular remedy which his belief or experience tells him may be of service in any case, however much the sense of the majority may differ with him in respect of it.

2. *It is reactionary.*—The renaissance was one long struggle against the despotism of "authority" in medicine and science generally. And that struggle has been kept up with increasing success until all the shackles of "authority" in science have been broken off, so that at the present time, as Dr. Emmett Holt has well said, "The general attitude of our profession to-day may be characterized as one of scientific skepticism. It receives nothing upon authority, no matter how ancient or honored."

This resolution on the contrary would take us back to the period when the physician stood or fell by his adherence to authority as exemplified in

the olde Esculapius,
And Deiscorides, and eek Rufus,
Old Ypocras, Haly, and Galien;
Serapion, Rasis, and Avicen,
Averrois, Damascien, and Constantyn;
Bernard, and Gatesden, and Gilbertyn.

3. *It sounds the knell of progress.*—The profession is asked to pledge itself not to "use or prescribe" any remedy whatsoever until after it has been accepted and incorporated into either the *pharmacopœia* or the *formulary*, or as a tentative measure has been approved as within the pale of legitimate *materia medica* by the aforesaid council. Now, had such a consensus of opinion existed—and been loyally yielded to on all hands—from the inception of the medical profession, our *materia medica* of to-day would literally have been represented by o. Unless someone makes a claim for therapeutic properties in something, why should it be submitted by the council to the necessary investigation to decide its fitness for acceptance as a legitimate part of the *materia medica*? But how can anyone make a therapeutic claim for anything until he has to some extent experimentally "used and prescribed it?" In a few in-

Address on Medical Ideals and Medical Tendencies, delivered at the opening of the College of Physicians and Surgeons, New York, September 26, 1906, and published in the *Columbia University Quarterly* for March, 1907, and the *Journal of the American Medical Association*, March 9, 1907.

stances, it is true, it is not possible to say, as we do, to the mind of man that a certain thing will or will not, in principle, to have certain effects, e. g., the predicated therapeutic properties of chloral hydrate before ever it was tried. The fingers of two hands would probably suffice to count up all the instances in which such a thing has occurred—leaving out of consideration mere variants, of course. On the other hand, are we to limit all possible avenues of addition to our materia medica to those things which may change *a priori* to strike the minds of one of the thirteen or fourteen members of the aforesaid council as possible therapeutic agents, and therefore to be investigated as to whether they may be fitly tried as such? Apart from the inevitable curtailment of our possibilities of advancement occasioned by such limitations, on what ground shall the right of individual investigation by considerably over 100,000 physicians be entirely superseded by the sole right to prior examination as to certain characters which, however desirable, have no necessary connection with therapeutic value, of less than a score of men, not all of whom are physicians, and very few, if any, of whom are medical practitioners?

Suppose such a regulation had existed and been loyally obeyed in the past, chloroform and ether would never have been the priceless possessions of the world's medicine; neither would cocaine, adrenalin, antitoxine, lysol, hexamethylene-tetramine, either in its own name or under aliases, or even cinchona, with its derivative quinine, and a host of other things that to-day are to be found in one or other of the three holy books of the only true believers, have even had attention drawn to their therapeutic possibilities.

In short, if there should come under a physician's notice a something which, either from empirical observation (as in the case of remedies borrowed from aboriginal tribes or folklore) or from scientific deduction (as in the case of chloral and certain synthetics), he has reason to suppose might prove useful as a remedy in some one or other morbid condition, he has with such a resolution in force no right to "use and prescribe" it until it is in the pharmacopœia or the formulary, or has been approved by the council as to certain chemical and other characteristics entirely outside of therapeutic properties. On the other hand, the council is not likely to investigate haphazard these chemical and other characteristics, to see whether it can approve the substance as proper materia medica or not, of anything that has not had attention called to its therapeutic possibilities by being first "used and prescribed" by some one to ascertain whether it really appears to be possessed of therapeutic properties. Otherwise they would have to examine millions of things, all of which may possibly be medicinal; some, perchance, for all we can know to the contrary, to a degree far beyond anything we now possess. In short, therapeutic investigation, in ninety-nine cases out of a hundred, must in the very nature of things precede chemical and other scientific and "ethical" examination—not follow it, as the wording of this resolution demands that it shall.

We had intended to close with an expression of our opinion on this resolution, but on reflection we feel it would be futile. He who is capable of following this argument does not need our opinion. He can form his own. He who is incapable of following would not be influenced by it though we wrote it in letters of fire on a midnight sky.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending May 3, 1907.

Smallpox—United States		Cases, Deaths.
Places	Date	
California—San Francisco	Apr. 13-20	1
Illinois—Bellefonte	Apr. 13-20	1
Illinois—Chicago	Apr. 20-27	1
Kentucky—Louisville	Apr. 18-25	2
Massachusetts—Haverhill	Mar. 9-16	1
Michigan—Detroit	Mar. 20-27	8
New Jersey—Hoboken	Apr. 8-25	1
Ohio—Cincinnati	Apr. 16-26	1
Texas—Houston	Apr. 13-20	10

Washington—Ancon	Apr. 17	4
Washington—Seattle	Apr. 1-20	10
Washington—Tacoma	Apr. 1-20	5
Smallpox—Insular		
Philippines—Islands	Mar. 1-16	1
Smallpox—Foreign		
Africa—Algiers	Mar. 1-11	8
Africa—Tunis	Mar. 30-Apr. 6	1
Brazil—Para	Mar. 30-Apr. 6	3
Canada—Piton County	Apr. 20	Present
Canada—Vancouver	Apr. 13-20	4
Canada—Winnipeg	Apr. 13-20	6
China—Canton	Mar. 30	3
China—Hankow	Mar. 11-25	3
China—Shanghai	Mar. 9-21	24
China—Tientsin	Mar. 16-23	2
Ecuador—Guayaquil	Mar. 30-Apr. 6	3
Egypt—Cairo	Mar. 31-Apr. 8	5
France—Noy	Mar. 1-31	40
France—Paris	Apr. 6-13	16
Germany—Berlin	Mar. 16-Apr. 6	7
India—Calcutta	Mar. 16-23	86
India—Madras	Mar. 21-29	1
Italy—Turin	Mar. 31-Apr. 7	2
Madeira—Funchal	Apr. 7-14	30
Mexico—Aguas Calientes	Apr. 13-20	18
Mexico—Mexico	Apr. 11-21	1
Mexico—Toluca	Apr. 16-23	1
Mexico—Veracruz	Apr. 13-20	2
Portugal—Lisbon	Apr. 6-13	11
Russia—Moscow	Mar. 30-Apr. 6	6
Russia—Odessa	Mar. 31-Apr. 6	22
Russia—Riga	Mar. 30-Apr. 13	10
Russia—St. Petersburg	Mar. 23-Apr. 6	2
Russia—Warsaw	Mar. 23-30	5
Spain—Almeria	Mar. 1-30	13
Spain—Valencia	Apr. 7-14	4
Turkey in Asia—Baghdad	Mar. 9-16	Present.
Turkey in Asia—Damascus	Mar. 16-Apr. 6	Present.
Yellow Fever—Foreign		
Brazil—Manao	Mar. 23-Apr. 6	5
Brazil—Para	Mar. 30-Apr. 6	5
Ecuador—Guayaquil	Mar. 30-Apr. 6	5
Java—Batavia	Mar. 16-23	2
West Indies—Bridgetown, Barbados	Apr. 13-20	1 Imported
West Indies—Port of Spain	Feb. 9-Apr. 13	8 4
Cholera—Foreign		
India—Calcutta	Mar. 16-23	49
Plague—Foreign		
Australia—Brisbane	Feb. 8-Mar. 9	2
Australia—Brisbane	Feb. 8-16	1
Australia—Kempsey	Feb. 8-16	1
Australia—Sydney	Feb. 8-Mar. 9	14
Brazil—Para	Mar. 30-Apr. 6	6
Chile—Antofagasta	Mar. 30	16
Chile—Iquique	Mar. 30	5
Chile—Santiago	Mar. 14	Present.
Chile—Talehuana	Mar. 14	Present.
India—General	Mar. 16-23	62,155
India—Calcutta	Mar. 16-23	94

Public Health and Marine Hospital Service:

Official List of Changes in the Station and Duties of Commissioned and Noncommissioned Officers of the United States Public Health and Marine Hospital Service, for the seven days ending May 1, 1907:

CARRINGTON, P. M., Surgeon. Granted leave of absence for three days, from April 29, 1907, under paragraph 189 of the Service Regulations.

GRUBBS, S. B., Passed Assistant Surgeon. Granted leave of absence for one day, May 6, 1907.

HOLT, JOHN M., Passed Assistant Surgeon. Granted leave of absence for two months, from June 20, 1907.

KASTLE, J. H., Chief of the Division of Chemistry. Granted leave of absence for nine days in April, 1907.

MATHEWSON, H. S., Passed Assistant Surgeon. Granted leave of absence for fifteen days, from April 27, 1907.

RYDER, L. W., Pharmacist. Granted leave of absence for seven days, from April 27, 1907.

SCHWARTZ, LOUIS, Acting Assistant Surgeon. Granted leave of absence for seven days, from May 2, 1907.

STILES, CHARLES W., Chief of the Division of Zoology. Granted leave of absence for five days in April, 1907.

STRAW, E. E., Acting Assistant Surgeon. Granted leave of absence for twenty days, from April 15, 1907.

WARD, W. K., Assistant Surgeon. Order granting leave of absence for one month on account of sickness, from April 1, 1907, amended to read for twenty-two days only.

WATERS, M. H., Pharmacist. Order granting leave of absence for thirty days, from April 1, 1907, amended to read nineteen days, from April 4, 1907.

Board Convened.

A board of medical officers was convened to meet at Philadelphia, Pa., on April 30, 1907, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: Surgeon J. M. Gassaway, Chairman; Passed Assistant Surgeon T. Clark, Recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending May 4, 1907:

- BRECHEMIN, LOUIS, Lieutenant Colonel and Deputy Surgeon General. Granted leave of absence for three months, with permission to go beyond the sea.
- GRAY, WILLIAM W., Lieutenant Colonel and Deputy Surgeon General. Granted leave of absence for ten days.
- HOWARD, DEANE C., Major and Surgeon. Promoted to the rank of major and surgeon, from April 24, 1907.
- KEELER, WILLIAM L., First Lieutenant and Assistant Surgeon. Granted leave of absence for three months, with permission to go beyond the sea.
- ROBBINS, CHANDLER P., Captain and Assistant Surgeon. Granted fourteen days' leave of absence.
- SHAW, HERBERT G., First Lieutenant and Assistant Surgeon. Relieved from duty at the Army General Hospital, Presidio, San Francisco, Cal., and ordered to duty at Vancouver Barracks, Wash.
- WHITMORE, EUGENE R., Captain and Assistant Surgeon. Granted ten days' leave of absence, to take effect upon being relieved from duty at Fort Jay, N. Y.
- WILSON, JAMES S., Captain and Assistant Surgeon. Granted leave of absence for twenty-five days.
- WYETH, M. C., Major and Surgeon. Ordered to proceed to Hot Springs, Ark., and report in person to the commanding officer, Army and Navy General Hospital, at that place, for observation and treatment.

The following named medical officers have been appointed members of a board to meet at West Point, N. Y., on May 20, 1907, for the purpose of making the physical examination of cadets required by paragraph 25 of the General Regulations, as amended by G. O. 74, April 13, 1906. War Department:

- BANISTER, JOHN M., Lieutenant Colonel and Deputy Surgeon General.
- GANDY, CHARLES M., Lieutenant Colonel and Professor of Military Hygiene.
- MASON, CHARLES F., Major and Surgeon.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending May 4, 1907:

- ALLEN, A. H., Assistant Surgeon. Ordered to duty at Lajas, Cuba.
- DE LANCY, C. H., Passed Assistant Surgeon. When discharged from treatment at the Naval Medical School Hospital, Washington, D. C., ordered to the Navy Yard, Washington, D. C.
- PHILLIPS, T. N., Pharmacist. Detached from the Naval Hospital, New Fort Lyon, Colo., and ordered to the Naval Medical School Hospital, Washington, D. C., for treatment.

Births, Marriages, and Deaths.*Born.*

KIRBY-SMITH.—In Sewanee, Tennessee, on Tuesday, April 30th, to Dr. Reynold M. Kirby-Smith and Mrs. Kirby-Smith, a son.

Married.

BUFFUM—JOURNEY.—In Brooklyn, N. Y., on Saturday, April 27th, Dr. T. Bellows Buffum and Miss Annie Lay Journey.

CASPER—LADD.—In Cannellton, Indiana, on Thursday, April 25th, Dr. L. P. Casper, of Henderson, Kentucky, and Miss Anita Ladd.

DAVENPORT—MAULE.—In Lewes, Delaware, on Tuesday, April 30th, Dr. Fuller L. Davenport and Miss Mary West Maule.

DILLWORTH—THELENBERG.—In Overbrook, Pennsylvania, on Friday, April 26th, Dr. Townsend P. Dillworth, of Philadelphia, and Miss Leona Eva Thelenberg.

ELLIS—VAN BUSSUM.—In Paterson, N. J., on Tuesday, April 30th, Dr. Robert H. P. Ellis, of Baltimore, and Mrs. Ida Van Bussum.

GILMAN—BURBANK.—In Wilmington, Delaware, on Saturday, March 2nd, Dr. Philip Kingsworth Gilman and Mrs. Ellen Cary Burbank.

GRIFFITH—TRAFFARN.—In Boonville, N. Y., on Saturday, April 27th, Dr. William Alonzo Griffith and Miss Frances Julia Traffarn.

GUSHEE—MORSE.—In New York, on Tuesday, April 23rd, Dr. Edward S. Gushee and Mrs. Agnes Reilly Morse.

HIRSHBERG—LILIENTHAL.—In Brookline, Massachusetts, on Thursday, April 25th, Mr. Walter Hirshberg and Dr. Alice Lilienthal.

LANGHORNE—GAFF.—In Washington, D. C., on Tuesday, April 30th, Dr. Cary D. Langhorne, United States Navy, and Miss Zaidee Forsyth Gaff.

LOWNSBURY—SCOTT.—In Wissinoming, Pennsylvania, on Monday, April 29th, Dr. Edwin T. Lownsbury and Miss Emma Scott.

SANDIDGE—DEARBORN.—In Amherst, Virginia, on Saturday, April 27th, Dr. Edward Sandidge and Miss Sadie Dearborn.

SCHWARZ—ADLER.—In Philadelphia, on Tuesday, April 30th, Dr. Louis Schwarz and Miss Jeanette Adler.

WALSH—MURPHY.—In Philadelphia, on Saturday, April 27th, Dr. Francis M. Walsh and Miss Eleanor Gertrude Murphy.

WARD—ALLEN.—In Longmeadow, Massachusetts, on Thursday, May 2nd, Dr. Edwin St. John Ward and Miss Charlotte Edwards Allen.

YOUNT—MUIR.—In Washington, D. C., on Wednesday, May 1st, Dr. Elmer F. Yount and Miss Edna Alexandra Muir.

Died.

BATES.—In Washington, D. C., on Saturday, April 27th, Dr. John Edward Bates, aged eighty-four years.

BUTLER.—In Vineyard Haven, Massachusetts, on Monday, April 22nd, Dr. Winthrop Butler.

CHARLTON.—In Clear Lake, Iowa, on Wednesday, April 24th, Dr. J. B. Charlton.

DRESSER.—In East St. Louis, Illinois, on Saturday, April 27, Dr. Thomas Withers Dresser, of Springfield, aged seventy years.

FOSSARD.—In Brooklyn, N. Y., on Friday, May 3rd, Dr. George H. Fossard, aged sixty-eight years.

HOLCOMB.—In Ulster County, N. Y., on Thursday, April 25th, Dr. Guy C. Holcomb.

HOTCHKISS.—In New Haven, Connecticut, on Thursday, May 2nd, Dr. William H. Hotchkiss, aged sixty years.

HUBBS.—In Addison, N. Y., on Wednesday, April 24th, Dr. Melvin B. Hubbs, aged fifty-six years.

MACGILL.—In Catonsville, Maryland, on Sunday, April 28th, Dr. Charles Griffith Worthington Macgill, aged seventy-three years.

NICHOLS.—In Northfield, Vermont, on Sunday, April 28th, Dr. George Nichols, aged eighty years.

ROMINGER.—In Ann Arbor, Michigan, on Wednesday, April 24th, Dr. Carl Rominger, aged eighty-seven years.

STILES.—In Everett, Massachusetts, on Saturday, April 27th, Dr. Herbert K. Stiles, aged forty years.

THIXTON.—In Louisville, Kentucky, on Saturday, April 27th, Dr. Claude A. Thixton, aged thirty-seven years.

TOMLIN.—In St. Louis, Missouri, on Friday, April 26th, Dr. Benjamin F. Tomlin, aged seventy-two years.

VAN DEURSEN.—In Butler, Indiana, on Wednesday, April 24th, Dr. Harold James Van Deursen.

WALSH.—In Louisville, Kentucky, on Sunday, April 28th, Dr. David Yandell Walsh, aged thirty years.

WILSON.—In Detroit, Michigan, on Monday, April 15th, Dr. William W. Wilson, aged fifty-nine years.

WOOD.—In Chicago, on Monday, April 29th, Dr. Henry J. Wood, of Utica, N. Y., aged seventy-seven years.

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Original Communications.

DIAGNOSIS AND TREATMENT OF ACUTE INTESTINAL OBSTRUCTION.*

By MAX EINBORN, M. D.,

New York,

Professor of Medicine at the New York Postgraduate Medical School.

Acute intestinal obstruction or ileus implies an acute occlusion of the bowel. The impassability of

stomach incoughs occur. At the same time tympanites develops; neither fæces nor wind are passed by the rectum.

The diagnosis of ileus is easier to make in the first than in the later stages, because palpation is more efficient in the first stage. The recognition of acute intestinal obstruction is based on the absence of stool and flatus in conjunction with symptoms of collapse, tympanites, abdominal pains, and vomiting of intestinal contents. Often the symptoms are not all present, and then the diagnosis is difficult. The fæcal vomiting in ileus must be distinguished from that of hysteria as well as of cholelithiasis and nephrolithiasis, which often take a similar course. In hysteria the picture is not so grave and the general condition is better. In kidney and gall stone colic we usually find other signs pointing to a disease of these organs. In both these diseases the symptoms of occlusion will moderate after relieving the pain. In true ileus this is not the case, for although the pain may be relieved by sedatives, the inability to pass wind as well as the abdominal tension remain.

The diagnosis of ileus having been made we must, if possible, decide where the occlusion is situated, first in which region of the abdomen, sec-

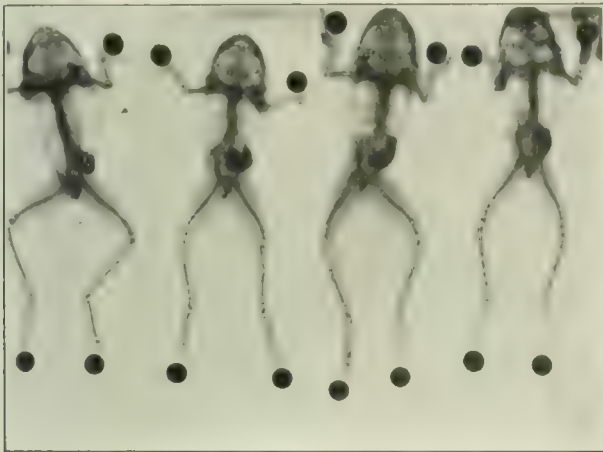


FIG. 1. December 4, 1906, six hours after the injection of his mouth. In 1 and 4 the duodenum and part of small intestines already visible.



FIG. 2. December 5, 1906, 10 a.m. Twenty-four hours after injection. In 1 and 4 some parts of small intestine are visible. In 2 the duodenum appears dilated, in 4 a great part of intestines is visible.

the intestinal canal as well as the regurgitation of stomach contents soon become evident. Ileus being one of the gravest ailments and an early recognition of this dangerous condition forming an essential part of its successful treatment (either surgical or possibly medical), I will first discuss the diagnosis and then add a few words regarding the treatment of this malady.

The symptoms of ileus are about as follows: After a few days of illness, or suddenly, a feeling of great prostration occurs. There is generally a sensation of abdominal tension present and later colicky pains appear. At times the pain is localized in a certain part of the abdomen especially in the beginning of the attack. Later it becomes diffuse. The pains exacerbate from time to time. Soon belching and vomiting supervene. The vomited matter consists at first of stomach contents, later of bile and finally of badly smelling fæcal matter. The eructated gas has a foetid odor and con-

* Read before the German Medical Society of New York, on February 4, 1907.

ondly in which part of the intestine. If the initial pain is localized it usually points to the seat of the disease. Palpation also yields valuable information in the commencement of the disease. The affected point is usually much more sensitive to pressure

than the other parts of the abdomen. We can very often also discover an inflated intestinal coil above the seat of obstruction (von Wahl's sign). Off and on, not in all cases, a stiffening of the bowel or peristaltic restlessness is observed above the affected place. If the stiffening of the bowel is plainly perceptible, inspection will very often reveal whether the seat of the disease is in the small or large intestine and if in the latter, in which part. If the obstruction is in the small intestine all the symp-

after giving one half to one ounce of bismuth might also be of use in localizing the obstruction, as the bismuth cannot pass it.

In order to determine the value of x rays in the recognition of intestinal obstruction, I have made the following experiments. In three frogs the bowel was ligated with silk in various places (duodenum, end of small intestine, and middle of large intestine), and then the abdominal incision was



FIG. 3.—December 5, 1906, twenty-eight hours after injection; in 2 the dilatation of the duodenum is more marked; between the stomach and dilated duodenum an empty space.

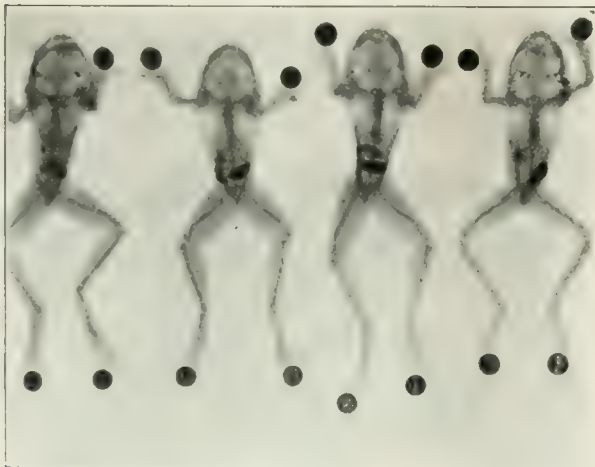


FIG. 4.—December 7, 1906, three days after the injection; in 2 the duodenum is still more dilated than before; other coils of small intestine are not visible.

toms are usually much more violent than in occlusion of the large intestine; furthermore, there is in the beginning of the disease marked indicanuria present. In obstruction of the large intestine faecal vomiting occurs late and indicanuria usually only on the fifth day of the disease. If the occlusion is well down in the large intestine the quantity of water which may be introduced into the rectum may give us a clew as to the location, in as much as the lower the seat of the disease, the less water can be injected.

The use of the x rays, fifteen to twenty hours

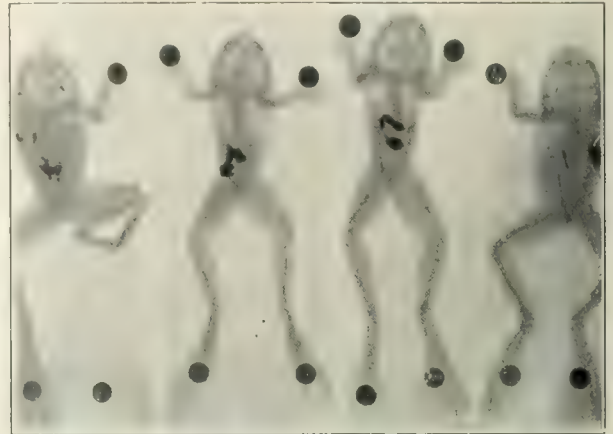


FIG. 5.—December 9, 1906, five days after the injection of bismuth; frog 1 is dead; in 2 the distention of the duodenum is more pronounced; in 3 and 4 the stomach is empty and the bismuth seen all along the small intestine.



FIG. 6.—December 10, 1906, six days after injection; in 2 stomach and duodenum filled with bismuth; duodenum dilated; in 3, a portion of small intestine dilated; in 4 the bismuth is visible over many intestinal coils.

closed. These three frogs and a normal frog were then given three grammes of a ten per cent. solution of bismuth. All four frogs (No. 1 the normal frog, No. 2, duodenal ligature, No. 3, ligature of small intestine, and No. 4, ligature in the middle of large intestine) were fastened to a small board and kept alive in a vessel of water during a whole week. X ray pictures of the frogs were taken daily. Thus the peristalsis of the stomach and bowel could be followed and the strictured place could be recognized by the fact that the bismuth could not pass beyond it. As is well known the normal peristalsis

in the frog is slow. According to Oscar Kraus¹ who studied this process in normal frogs by means of x rays, it takes about a week for a watery bismuth solution to pass from the stomach to the large bowel.

Symptoms of stenosis, therefore, appear in a frog

progress of the bismuth could be followed up to the other frogs and the stenosis could be recognized in frog No. 2 after one and one half days (Fig. 3) and in frog No. 3 in six days (Fig. 6). In frog No. 4 where the ligature was placed in the middle of the large intestine the stricture could not be made out



FIG. 7.—X ray of abdomen of Mr. B., twenty-four hours after the ingestion of bismuth (70 grains) in a pint of milk, by mouth: on the right side a filled intestinal coil is visible, next an empty fold, then again filled intestine.

FIG. 8, B.—X ray of abdomen after rectal ingestion of bismuth. Practically the same outlines are noticed as in Fig. 7, only more distinctly.

only at a late period, and, of course, the later the further away the stricture is situated from the stomach.

Unfortunately frog No. 1 (the normal frog) was injured somehow by the injection, so that the stomach did not act well (paralysis of stomach?). This frog is the only one that died on the fifth day before the experiment was completed. Nevertheless the

even after seven days (Fig. 6), as the time of peristalsis in the frog is so long.

In man, where peristalsis is much more active and where it usually is completed in eighteen to twenty hours, this method ought to indicate after twenty to twenty-four hours the seat of stenosis in acute and chronic intestinal occlusion.

I have not had an opportunity to test this method in acute obstruction of the bowel, but only in a case of chronic obstruction. We could see here twenty-

¹Oscar Kraus, Radiographische Verdauungsstudien. Fortschritte auf dem Gebiete der Röntgenstrahlen, v.

four hours after the administration of bismuth by mouth, a place in which the intestine was distended and filled with bismuth and next to it a spot where apparently no bismuth was present (stenosis), then again intestine with bismuth (see Fig. 7):

The place seemed to point to the large intestine, but in order to be more certain, a few days later, when the bowel was absolutely free from bismuth 30 grammes of bismuth in 500 c.c. of water were injected into the rectum and another x ray picture taken (see Fig. 8). The same picture as before was the result. This shows that the seat of trouble was in the large intestine, since the bismuth given per rectum could not go beyond the iliocæcal valve.²

In all cases of ileus it is of importance to decide whether we have to deal with a dynamic or mechanical ileus, and in the latter cases whether there is obliteration of the lumen of the bowel, or volvulus or finally incarceration (intussusception). It is important to determine the variety of ileus that we have to deal with, as the treatment varies accordingly. In dynamic ileus usually no surgical treatment is required. In incarceration, however, surgical treatment is desirable, the sooner the better. Cases of obturation of the bowel as well as volvulus permit medical treatment. It is not always easy to decide with which variety of obstruction we have to deal. Usually the symptoms of shock are more intense in obstruction due to incarceration than in dynamic ileus and obstruction due to obturation of the bowel.

Treatment.—In every case of ileus possible surgical interference must be considered. As mentioned before, this refers especially to obstruction due to strangulation.

All cases of strangulation previous to operation as well as all cases of obstruction due to obturation ought to be treated medically as follows: Absolute rest in the widest sense of the word, rest in bed, abstinence from food, absolute rest for the bowel. The patient should receive only small quantities of water or weak tea (by the teaspoon) or small pieces of ice, but no food. If the stenosis is high up, in the small intestine, small nutrient enemata are permissible. Subcutaneous salt water injections are the best means of introducing liquids into the system. Cathartics are strictly avoided by all clinicians, except if one is fairly certain that we have to deal with a case of obturation by gallstones or hard faecal masses. In order to put the bowel at rest it is best to use morphine or opium, preferably the latter. Morphine may be given subcutaneously or opium in suppositories. This drug does not merely serve as an analgesic, but is of immediate value in checking the peristalsis of the bowel and thus favoring a cure. The heart action is thereby merely favorably influenced.

In the last two years the use of atropine in ileus, which had been known for centuries, has again been revived and highly recommended by Batsch.³ It is administered in fairly large doses, one to five milligrammes subcutaneously two or three times daily. Atropine is supposed to exert a direct favorable influence on the obstruction. I have used atropine during the last two years in six cases, of which four

got well. Atropine certainly deserves to be tried in every case.

Lavage of Stomach.—Kussmaul and Cahn were the first to recommend lavage of the stomach. If the patient is not too much weakened, this procedure is certainly to be recommended. It facilitates vomiting and diminishes tension temporarily. It is of especial benefit if the obstruction is high up.

Intestinal Lavage.—Injection of rather large quantities of water under considerable pressure is at times of value, as well as enemata of warm oil, as recommended by Kussmaul and Fleiner. Some clinicians, however, amongst others Curschmann,⁴ do not recommend this procedure.

Inflation of the bowel by means of air or carbonic acid gas has also been recommended and occasionally is of advantage, especially where we have to deal with a partial invagination. Curschmann also prefers this to water irrigations.

Massage and Electricity.—Massage is of especial benefit in cases of obstruction due to faecal impaction, electricity in the dynamic form of ileus.

In grave cases, in which the tympanitic distention is of a very high degree and in which all the described procedures have failed and an operation cannot be performed, an attempt to relieve the bowel by means of puncture is justifiable. Curschmann⁵ was the first to recommend this procedure and occasionally it may be used to advantage.

20 EAST SIXTY-THIRD STREET.

SYMMETRICAL ADENOLIPOMATOSIS.

BY JOSEPH COLLINS, M. D.,

New York,

Attending Physician to the City Hospital.

The disease now most commonly designated symmetrical adenolipomatosis is, I believe, not frequently met with in this country. I have found no record of it in the American medical literature, but I hasten to add that my search has been by no means thorough. There are upward of 132 cases in the European literature, principally French, German, and English references, most of which will be found appended to this article. Adenolipomatosis was first recognized and described apparently by Benjamin Brodie, in England, who described it in 1846, and by Huguier, in France. Huguier showed a patient to the Surgical Society of France in March, 1863, a young woman, twenty-six years old, who had symmetrical fatty masses on the neck, trunk, and extremities, which is a typical example of the disease. He published a second case in the *Gazette des hôpitaux*, in 1863; but the most important early contributions to the subject were those of McCormac and Baker and Bowlby, in England, the former in 1884, the latter in 1886, and Madelung, in Germany, in 1888, while the most important recent contributions have been those of Lannois and Bensaude, their pupils, and of Bucquoy and Siredy. The first of the last two named writers gave a full account of the literature of the subject up to 1891, and the latter propounded a theory of the disease indicated by the name, which he proposed should be given to it instead of sym-

¹ Collins, J. G. Cases for the x ray pictures. *Monatsh. f. Chir. u. Gyn.*, 1906, No. 37, p. 100.

² Curschmann, Die wichtigsten Indicationen zu chirurgischen Eingriffen bei Erkrankungen des Darms. *Zeitschrift f. d. allg. u. spec. Chir. u. Gyn.*, 1906, Nos. 18 and 19.

³ Batsch, *op. cit.*

metrical adenolipomatosis, viz., gauchitis. The disorder has had various names given to it, such as plexiform neuroma (Vernieu), multiple lipoma, symmetrical multiple lipoma of nervous origin, diffuse lipoma, diffuse lipoma of the neck and of the chest. The last named is the title which Madelung prefers, and is likewise the name under which Baker and Bowlby published their cases. It very likely is as appropriate and adequate a designation for the disease to-day as the one heading this article which was suggested by Lannois and Bensaude.

In the *Transactions of the Pathological Society of London*, XXX, 1879, page 419, Mortimer Baker gave a brief, excellent description of these cases. The tumors are thus described:

"There are two tumors in the scalp, symmetrically situated, one on and behind each mastoid process, two, also symmetrical, in the neck—one in each anterior triangle—and a fifth at the back of the neck, in the median line. When patient was first seen, about two months ago, the tumors over the mastoid processes were about the size of a small tangerine orange; those in the anterior triangle, less defined at their margins, occupied the upper two thirds of this space; and the postcervical tumor, of a circular outline, and less prominent than either of the others, had a diameter of about three inches.

"All the tumors have the same general characters. They are soft, almost fluctuating, yet not tense; apparently seated in the subcutaneous tissue, yet not easily movable on subjacent parts. The skin over them, with which they seem continuous, is not altered in color or texture, and they are not in the least degree tender. Their consistence seems to lie somewhere between that of a soft fatty tumor and a subcutaneous nævus; the tumors cannot, however, be obliterated so completely by pressure as the latter, nor are they lobulated like the former. Their texture feels most like that of the soft, semifluctuating, fatty lumps in the lower part of the neck which accompany the condition known as sporadic cretinism."

In a postscript dated May 24, 1879, it is noted that:

"The tumors have suddenly undergone a great alteration. The postmastoid tumors now feel almost as tense as if they were distended by fluid, and the post-cervical median tumor, from a state in which it was scarcely distinguishable from surrounding subcutaneous tissue, is now in all respects indistinguishable from an ordinary well defined, firm and lobulated, fatty tumor. Were it the only tumor present, and were the history unknown, no surgeon could hesitate for a moment in diagnosing it as an ordinary fatty tumor."

I have had opportunity during the past few years to see five cases which are typical of the disorder; three of them were in my personal care, one at the City Hospital, one at the Postgraduate Hospital, and one at the Montefiore Home, and abundant opportunity was thus had for observation and study of them. The remaining two I saw once in the country, and but once, with other physicians. A discussion of these cases may be of some interest, and before speaking of what little is known of the etiology and pathology of the condition, I shall give the histories briefly of the three cases:

CASE I.—The first case was that of a man, forty-six years old, single, and by occupation a salesman, who sometimes carried a pack. His history previous

to the occurrence of the disease for which I saw him, viz., symmetrical adenolipomatosis, was that when he was thirty-two years old he had an attack of inflammatory rheumatism which made him keep to his bed for about two weeks. He denied venereal disorder and admitted that he was a moderate drinker of alcoholics. The history of his present illness was that when he was forty-five years old, he was seized with pain in the legs, a sensation of soreness accompanied by sharp "neuralgic" pains; soon his legs became weak so that his gait and station was insecure, and as he says, he could scarcely stand. This condition lasted about eight months, during which time he was treated, he says, for "rheumatism" (although there was no swelling of the joints, puffiness, redness, or other so called rheumatic concomitants) when the upper extremities

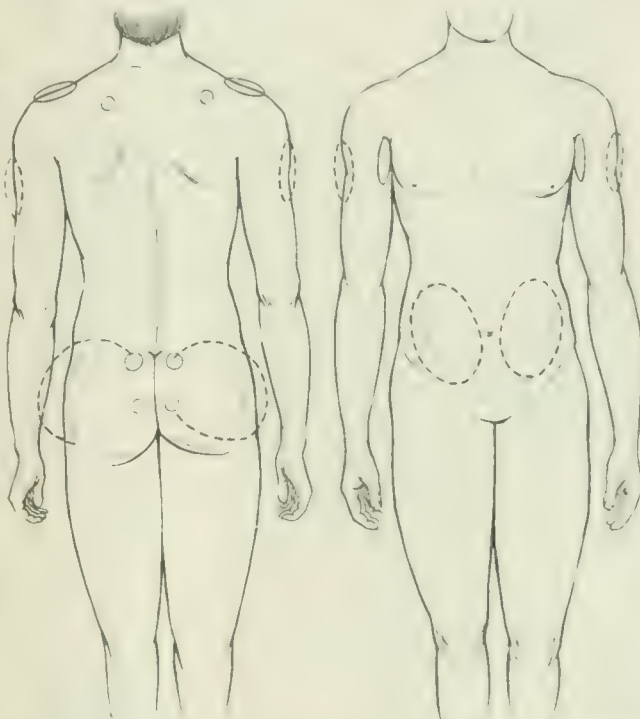


FIG. 1, CASE I. Diagrams showing the location and extent of the tumors.

became affected in a similar way; they became soft and unwieldy, he says.

His complaint when I first saw him on the 28th of October, 1904, was of stiffness and weakness of the hands and legs which prevented him from using them dexterously; easily induced fatigue; profound leg weariness when he walked; pain, principally in the knee caps. There was no complaint of disorder of the vegetative functions or evidence of their disorder.

Examination showed tenderness over the peripheral nerves, especially of the right upper extremity, but also of the lower extremities; no objective sensory disturbances; sluggishness of the tendon jerks, especially the knee jerks; the muscles preserving their faradic irritability, it was possible that the contraction could have been legitimately called somewhat sluggish. The most conspicuous symptom, but the one which he apparently was entirely unaware of, was the presence of what seemed to be circumscribed tumors situated symmetrically on the body; one on either side of the neck, one over the top of each shoulder blade posteriorly, one over the spines of each scapula, one over the inferior end of the deltoid muscle, one on each side over the junction of the lumbar vertebrae and the sacrum, one over each sacrococcygeal articulation, one on either

side of the axilla anteriorly, and one on either side of the umbilicus. The location and extent, and in a measure the size, are indicated by the accompanying rough diagrams, made at the bedside.

This case has been under observation more or less continuously since the date of the first examination, and there has been no very material change either in his general condition or in the tumorous



FIG. 2. CASE II. Showing enlargement beneath the lower jaw and chin.

formations, save that the tenderness on pressure over the peripheral nerves is not so acute as it was, and there is less evidence of weakness in the extremities. There can be little doubt, I think, that the condition, apart from the symmetrical adenolipomatosis, is that of a mild grade of multiple neuritis, possibly of alcoholic origin, possibly also of what is called rheumatic origin.

CASE II.—The second case was that of a man, thirty-six years old, a butcher, who had taken a great deal of stimulants during his entire life. He said that his trouble began when he was thirty-one years old, *i. e.*, about five years before the time that I first saw him. He then remarked a swelling beneath the chin and in the back of the neck on both sides. He attributed the swelling under the chin to lifting extremely heavy pieces of meat. His legs had been weak for about three years so that he had not been able to walk alone securely since his thirty-second year, and during this period he had suffered from severe cramp-like pains in the

legs, a sensation "as though the arteries were being drawn together." These pains were not continuous, at times they remained away for a fortnight or more, and then they came on with great severity, particularly at night. For the past two months, *i. e.*, two months preceding May 22, 1906, when I saw him, he had been complaining of very severe stabbing, burning pains in the legs, from which he could not get relief. He stated that if he was touched with the point of a pin he immediately felt severe pains, but if touched with the whole hand he did not have the pain. He also said that the wasting of the extremities, which was very evident at the time of the examination, had lasted about twelve weeks, and that it seemed to follow "stomach trouble," *i. e.*, vomiting and pains in the stomach.

Examination showed an emaciated individual who was scarcely able to walk alone; when he attempted to do so the feet were wide apart, the body was thrown backward, and he had a profound waddling gait. The legs seemed to have undergone greater shrinkage than the arms. The most striking feature of the patient, however, were symmetrical enlargements in different parts of the body, the most prominent being beneath the lower jaw and chin. This enlargement, although distinctly symmetrical, was joined in the centre and formed a swelling on either side of his face like two enormous sausages bound together beneath the chin. It was soft, had no fluctuation, and could not be differentiated in the middle line. Behind the mastoid process were two masses about the size of a small peach. Then there was one on either side of the seventh cervical vertebra; one on either side of the abdomen, just below the umbilicus; one on either side of each sacroiliac articulation; one on each arm at the outer edge of the middle of the biceps. The lower extremities did not present any distinct tumor formations, although in the middle of the belly of the quadriceps there seemed to be a suspicious mass; likewise a similar one over the middle of the deltoids, and the pectoralis major on both sides. The least conspicuous of these tumors, were two situated just above Poupart's ligament. These were about one half the size of the two beneath the umbilicus. There were altogether about twenty symmetrical multiple lipoma formations.

General examination showed that the liver was slightly enlarged; spleen and pancreas were not palpable; heart sounds were normal, the first sound enfeebled, and the second sound accentuated; blood-pressure was 135 (Stanton); there was no tenderness on deep seated pressure over the nerves; knee jerks were lively; plantar response flexor in type. The tongue had a peculiar reddish brown color, resembling that of the spleen in a state of parenchymatous degeneration. Mentally the patient was normal.

CASE III.—The third case was that of a cigar maker, fifty-five years old, who said that he had had malaria for many years. The duration of the disorder for which he consulted me was about six years, and the original symptom was pain in the right arm and tenderness of the right shoulder blade; in addition to this there was a burning sensation, especially at night. Occasionally he had pain of a similar character in the left shoulder and arm. The pain was not continuous, but after lasting for three or four hours it would disappear. It was made worse during work, and was worse in the day than in the night. Until the beginning of this illness he had taken alcoholic beverages rather freely, and had smoked six or seven cigars a day.

Physical examination revealed a considerable degree of arteriosclerosis with its customary concomitants, tenderness over the arms and shoulders; there was no atrophy of the muscles; the reflexes of the lower extremities were elicitable but rather sluggish. As in the other cases, however, the most striking symptom

was the presence of a great number of masses situated symmetrically over the body, on either side of the cervical vertebrae; over the spines of the scapulae; beneath the spines of the scapulae; on either side of the shoulders; along the deltoid muscles; in the middle of the back; at the dorsolumbar region. Altogether they numbered 18 and varied in size from a small lemon to a moderately large orange.

There can be very little doubt I think that in this case also there was a low form of multiple neuritis; the pain, the tenderness, the sluggishness of the knee jerks, the slight ataxia of the upper extremities, all speak in favor of this opinion. What became of this patient I am unable to say, as he was under my observation only a few weeks.

CASE IV.—The fourth patient was a plasterer, forty-eight years old, who was seized, nineteen months before I first saw him, with severe pains in the legs extending down from the knees. The pain he described as consisting of a sensation as if the flesh was being drawn apart. This sensation alternated with sudden shooting pains. The pain was made worse by standing, walking, working, and by manipulation. When he was quiet and off his feet he had a sensation as if the legs were swollen. He stated that for about six months following the occurrence of the beginning of these symptoms, he was delirious for a part of the time. The delirium would sometimes cease for a brief time and he would be fully appreciative of his surroundings and of his condition, and then without attributable reason he would become confused. Sometimes this confusion would come on while he was in the street and he would lose his way. Part of the time he was in a hospital.

On examination a number of tumors were discovered at the back of his neck and over the posterior surface of the scapula, six in all. These were situated symmetrically and gave rise to no symptoms, nor did he make a complaint of them. He maintained that he first noticed these about ten years ago, and at that time there were two only; about four years ago the others developed. He admitted alcoholic habits, and the examination revealed a well marked multiple neuritis, particularly of the lower extremities, and predominantly of the sensory type.

I have seen two other individuals afflicted with a similar disorder, both males, but I have no specific notes of their symptoms. One of the patients was forty-six years old, and was not alcoholic. The other patient was fifty years of age, and was moderately alcoholic and addicted to drugs.

Nothing is known concerning the ætiology of this disorder, save that it occurs very much more frequently in men than in women. This, of course, is in marked contrast to the history of true lipomatosis and of that other very remarkable disease whose recognition we owe to Dercum, and which is now universally known as adiposis dolorosa (Dercum's disease). Some writers maintain that it occurs only in men, but there are several instances of it in women well attested (see Lannois and Bensaude, *Bulletins et mémoires de la Société médicale des hôpitaux de Paris*, June 21, 1901). In the vast majority of cases of symmetrical adenolipomatosis recorded, there is a history of the intemperate use of alcohol. Alcohol, of course, everyone admits is the commonest cause of multiple neuritis, in this country at least, and the fact that there was a neuritis in my three cases may be taken, I believe, to suggest at least that the disorder develops sometimes, perhaps often, in conjunction with neuritis. It will be recalled that the only explanation that

has been offered to date of the pathogenesis of adiposis dolorosa is that it develops in conjunction with a low grade of neuritis.

This view has been advanced by Thimm, in his *Adipositas Dolorosa und schmerzende symmetrische Lipome*. (*Monatsschrift für praktische Dermatologie*, v. 30, 1903.)

The author suggests that adipositas dolorosa and painful symmetrical lipomatosis do not constitute two radically different pathological processes; but that they differ no more from each other than diffuse and circumscribed lipomatosis from the anatomical point of view. The genesis for either disease is probably referable to certain central nervous causes. Weiss likewise reports a case favoring this view. (*Ueber Adipositis Dolorosa, Maladie de*



FIG. 3. CASE II. Side view.

Dercum in *Wiener klinische Wochenschrift*, 1903, No. 17.) This author reports a case of adiposis dolorosa (nodular form) which is to be classed with the mild cases described as *formes frustes*, and constituting the transition from ordinary multiple lipomatosis to adiposis dolorosa. The patient, a man, forty-three years of age, presented symmetrical swellings, with relatively slight constitutional disturbance. There was neither general motor weakness nor psychical anomaly.

Many writers endeavor to show that rheumatism and the rheumatic constitution have a relationship

to the development of the disease, but I in my own experience have never seen anything that even suggested this, and, moreover, I am inclined to believe that that which has been considered rheumatic by the patient or even by the physician, in some instances, is the evidence of a neuritis. It apparently has no relationship to general obesity nor do any



FIG. 1. CASE III. Showing enlargements on both sides of the vertebral column.

of the factors that enter into the causation of that disorder such as heredity, overeating, indolence, etc., seem to play any part. Its occurrence in individuals who have tabes, general paresis and other nervous disorder flowing out of accident or infection does not necessarily mean that symmetrical adenolipomatosis has really anything to do with these conditions.

Such, for instance, as in the case reported by Feré and Franeillon: *Sur la coïncidence des lipomes symétriques avec la paralysie général progressive*. (*Revue de chirurgie*, xxiii, 1901.) The patient having general paralysis, and presenting symmetrically arranged lipomatous tumors. They are of the opinion that these lipomata, which developed prior to the nervous disturbances, should not be interpreted as

trophic disturbances dependent upon the lesions of the nervous system, but as teratomata, and therefore as errors of development.

Several writers have remarked that the disease has been encountered in parent and child, i. e., that heredity may be a factor in its ætiology. See Reverdin, *Note sur les lipomes symétriques*. *Bulletins et mémoires de la Société de chirurgie de Paris*, xxx, 1904. Enormous diffuse lipomata, symmetrically arranged upon the external surface of both thighs, in the region of the trochanters, were observed in a female patient, twenty years of age. The patient had two sisters with identical lesions. The mother of another young woman similarly afflicted had swellings of the same kind, similarly situated below the region of the trochanters. It is a noteworthy fact that these conditions presented three times in one family, and twice in the other. The general health of the patients was in no way affected.

Another instance in which a similar heredity was noted is related by K. Petren: *A Case of Multiple Symmetrical Hereditary Lipoma*. (*Virchow's Archiv*, cxlvii, 1897.) The patient was a man, fifty-eight years of age. A symmetrical arrangement of the lipomata was present in his case only, and was by no means perfect. It was a notable feature of the case, however, that lipomata had likewise occurred in the patient's mother. The localization of the tumors upon the upper extremities of the man gave the impression of their being connected in some way with the course of the subcutaneous nerves.

The symptoms of the disease are local and general. Strangely enough the general symptoms constituted, in all of my cases, the patient's reason for seeking advice, and the local symptoms, viz., the tumors, had apparently no interest for them. These general symptoms are sufficiently indicated in the histories of my cases. Briefly they are: Easily induced and unattributable fatigue; weakness of the extremities; pain of a variable character and usually of very different designation; emaciation, and what may be called a cachexia, i. e., there is a change in the appearance of the patient apart from the change caused by the tumors beneath the chin or about the neck. This latter symptom suggests a profound anæmia, many times, which on examination of the blood is found not to be so. In some of the cases in the literature cerebral symptoms, such as irritability, apathy, hypochondria, amnesia, have been noted, but none of these exist in my cases. Practically the only visceral symptoms are those associated with the profound asthenia and which are likely to occur in any asthenic condition. The local symptomatology of the disease resolves itself into a description of the tumors, their size, their consistency, their location, their evolution, their enumeration, etc. Naturally the local symptoms differ with every case. The one constant feature is their symmetrical distribution. Their commonest location is beneath the chin, the suboccipital region, over the spines of the scapulae, the inferior angle of the axillary spaces posteriorly, the parotid region, the small of the back, on either side of the median line on the abdomen, below and above the umbilicus, the genitalia, and the extremities. This enumeration does not by any means exhaust the parts of the body wherein they are frequently found.

The facial appearance of patients afflicted with the disease is fairly characteristic when the tumor masses have reached a considerable degree of size. The deformity beneath the chin may be compared with that caused by binding beneath the chin an enormous sausage constricted in the middle, while posteriorly are the protuberances on either side of the middle line, oftentimes two on either side. The swellings are nearly always well defined, and circumscribed in some instances; those beneath the chin especially seem to merge together, forming one enormous dependent protuberance, as in the case of the patient whose history was published by Virchow. To the sight and at first to the touch they seem to be closely identified with the surrounding tissue, but it soon becomes apparent to the observer that they are easily distinguished from the tissue in which they are situated. Their periphery is, in reality, continuous with the surrounding cellular adipose tissue. The skin is usually quite normal over them and preserves its softness and mobility. In a few instances in the literature, I note that the writer states that there were adhesions of the skin or that the lymphatics were large, giving the parts the appearance of a localized elephantiasis, but this is the great exception to the rule. The consistency of the masses when subjected to palpation is that of an ordinary lipoma. Some of them are softer than others, and especially those beneath the chin are apt to give a sense of false fluctuation, while those in the back of the neck are generally more resistant, physical conditions that are the result largely of the subcutaneous cellular tissue.

The course of the disease is progressive, as a rule; a number of cases terminating in recovery have been recorded, but the vast majority do not get well. The condition of many of the patients remains stationary for years, some patients die from the cachexia which follows or accompanies the condition, while others still terminate with symptoms of compression in the mediastinum which indicate that the tumor masses have developed there.

In some cases the tumors remain stationary for many years. I can find no record of cases in which the tumors disappear entirely. But in the case of Brodie and Baker the tumors got so small that they were scarcely recognizable. The disease has to be distinguished from obesity, from congenital lipomata, from true lipoma, from pseudolipoma in the subclavicular region, and from adenolymphocele.

The development of the tumors is sometimes rapid, reaching a considerable size within six months, but more often they grow slowly. The rate of growth varies in each individual. There is no doubt whatsoever that the swellings vary in size from time to time. This point has been discussed by many writers, who are agreed that it is well taken.

The theories concerning the pathogenesis of the disease are briefly: that suggested by Madelung, who is inclined to the belief that it has something to do with the disappearance of the thyroid body, but that was in the days when the function of the thyroid body and the consequences of disease of it were not understood, and theories enumerated only to be dismissed. Grosch suggested the cutaneous gland theory, which was based on an examination of seven cases of lipomata of different natures. He maintained that the localization of all

lipomata was determined by the distribution of the secreting glands of the skin. In general the frequency of lipoma in any region is in inverse ratio to the richness of this region in sebaceous and sudoriparous glands. The elimination of fat in the organism is accomplished in part by the glands of the skin. Anything that disorders this function, manifests itself by the formation of adiposity around these glands. This adiposity appears especially where the glands are most numerous. He goes on to say that two kinds of causes may thus be operative to influence the secretion of the cutaneous glands, one local, acting principally upon the periphery confined to the surface, the other general, acting on the nervous centres of this secretion. The first, such as traumatism, frequent irritation, etc., determines the causation of hereditary lipoma,



FIG. 5. CASE IV. SEVERAL LIPOMATA ON THE UPPER BACK.

the true multiple lipomata, especially the symmetrical ones. This theory has nowadays few adherents.

There is a considerable number of lipomatous tumors, appearing symmetrically in the two halves of the body, which absolutely contradict the views held by Grosch, through their arrangement and localization. Such, for instance, as those reported by Erwin Page, *Beitrag zur Lehre von den multiplen und symmetrischen Lipomen*. (*Wiener klinische Wochenschrift*, October 17, 1895.)

Page's case differs in many respects from cases previously described, but agrees in many points entirely with the first category of multiple lipomata

with associated symptoms as discussed by Koettwitz. (Ueber symmetrisches Auftreten von Lipomen. *Deutsche Zeitschrift für Chirurgie*, xxxviii, 1894.) In this case the localization of the lipomata was most pronounced at the forearms, which as a rule are less markedly affected. The preliminary and associated nervous symptoms were so prominent,



FIG. 6. Diffuse lipomata

that this case must be designated as multiple symmetrical lipomatosis on a neuropathic basis. Both the trunk and the extremities were affected by the multiple lipomata; whereas, according to Lutzan, the trunk is practically free when the extremities are seriously involved, and vice versa.

This case cannot be made to agree with the Grosch theory, since exactly the seats of predilection of lipomatosis were free, whereas other regions, only slightly susceptible according to Grosch's interpretation, such as the forearms, were most affected by lipomatosis. It is evidently one of the cases designated by Koettwitz, as the product of a nervous affection, of a trophoneurosis; and which Alsberg would refer to a nervous connection. As a matter of fact, the case does present the greatest resemblance to the case observed by Alsberg, which led him to the conclusion that multiple and symmetrical lipomata are neurolipomata.

The relatively small number of cases with nervous symptoms in their wake, as well as the cases with symmetrical arrangement and relation to the course of nerve trunks, also those cases where the location of the lipomata does not follow the usual predisposition, should be considered separately and individually as having no connection with Grosch's glandular theory, and demanding for their explanation the assumption of a disturbance of the trophic centres in the sense of Koettwitz; a trophoneurosis, or at least a direct connection with nervous elements. The author concludes with the expression of his opinion to the effect that the ætiology of multiple and symmetrical lipomata in all probability is not a uniform one; and that the cases showing nervous and other pathological associated features, as well as the cases presenting a purely symmetrical arrangement, must be considered separately. It would seem advisable to submit the nervous system to a thorough examination in all cases of multiple or symmetrical occurrence of lipomata.

A case related by de Buck and de Moor: Un Cas de lipomatose symétrique par métaplasie graisseuse du muscle (*Journal de neurologie*, No. 15, 1900), does not admit this interpretation. In this case there was symmetrical lipomatosis caused by fatty metaplasia of muscular tissue. The patient was a



FIG. 7.—Multiple lipomata affecting the foot.

laborer thirty years of age, in whom lipomatosis had begun to develop sixteen years previously in the lumbar region. The disease progressed symmetrically along the spinal column, ascending up to the scapular region. Moreover, a tumor formed in the coccygeal region. The patient had a right inguinal hernia, which after extirpation was found to consist of fatty substance. The disease did not give rise to pathological symptoms worthy of note. Macroscopical examination of the lipomatous masses showed yellowish and yellowish white muscles in

addition to the normal red ones. Microscopical examination of the muscle fibres, which were separated by fatty masses, showed various stages of simple non-degenerative atrophy; giving the impression as if certain fibres presented a hypertrophic condition in the first stage of the change. The essential feature consisted not in proliferation of the fatty intermediate substance with secondary muscular atrophy, but in retrogressive changes of the muscle substance, which at first presented an embryonic (sarco-blastic) appearance, and finally became transformed into fat substance, macroscopically preserving its bundle-like structure to the end.

The authors designate this, and similar cases, as *lipomatosæ par métaplasie musculo-graisseuse*; the cause is to be sought for in neurotrophic alterations.

The theory which has much wider acceptance than either of these, is the nervous theory which was given great prominence by such writers as Bardeleben, Kuster, Bramann, *et al.* It is still probably the theory to which most writers give their adherence. The occurrence of the disease with evidences of involvement of the peripheral nerves, the symmetry of the distribution of the tumors, the occurrence of manifest symptoms pointing to disorder of the peripheral nerves, all seem to speak in favor of acceptance of it. It does not, however, seem to me that acceptance of it necessarily means the rejection of the view which has been proposed by Hayem, and further amplified by Launois and Bensaude, who advance the hypothesis that it is an affection of the lymphatic glands, a lymphatic ganglionitis of a lipomatous character. The condition is at first an adenopathy, later a lipomatosis. It should also be said that Baker and Bowlby were inclined to take such a view of the disorder. The predilection of the tumors for localities in which the lymphatic glands are most numerous, speaks in favor of this view, as does likewise the fact that the characteristic histological constituents of these lymphatic ganglia are often found in these fatty tumors.

So far nothing has been suggested by way of treatment that leads one to believe that the disease can be influenced by medication, although cases are recorded in which improvement, perhaps recovery, followed treatment.

At the meeting of the society for medicine and pædiatrics in Vienna, October 27, 1904, Türk presented a patient with diffuse symmetrical lipomatosis. The condition had rapidly and considerably improved under the employment of arsenic injections and massage with unguentum Credé. Extract of thyroid gland has been given to many of the patients just as it has been given to patients with adiposis dolorosa and adiposis vulgaris, but despite the fact that there is here and there a partial success from its use the results are not encouraging. For instance, the cases reported by W. Türk: Two Cases of Diffuse Symmetrical Lipomatosis. (*Gesellschaft für innere Medizin und Kinderheilkunde in Wien. Sitzung von, 14 Januar, 1904. Centralblatt für innere Medizin.*, 1904, No. 8.) It is absurd to infer even that the course of the disease was materially altered by small doses of thyroid given for three weeks only, even though he says:

"Notwithstanding the small initial doses, notable

improvement had already become apparent insofar as the tumors under the chin and at the nape of the neck were decidedly smaller and softer, with greater freedom in the movement of the head and the tongue." It is much more legitimate to assume that the alteration in size was not dissimilar to that which often takes place spontaneously. Possibly this may also be said of a case reported by Sir Benjamin Brodie, which, being the first case reported, I shall quote:—

"There is another kind of fatty tumor which occurs occasionally, but which has not been, as far as I know, described by surgical writers. In the cases to which I allude the tumor is not well defined, in fact there is no distinct boundary to it, and you cannot see where the natural adipose structure ends and the morbid growth begins. I will relate to you the history of one of several cases of this kind that I have met with, and this will explain as much as I know of the matter. A man came to this hospital several years ago having a very grotesque appearance; there being an enormous double chin (as it is called), hanging down nearly to the sternum, and an immense swelling also on the back of his neck, formed by two large masses, one behind each ear, as large as an orange, and connected by a similar mass between them. He said that the enlargement had begun to show itself three or four years before, and had been increasing ever since. They gave him no pain; nevertheless, they made him miserable, and in fact had ruined him. The poor fellow was by occupation a gentleman's servant, and having so strange an appearance no one would take him into his service. I gave him half a drachm of the liquor potassæ three times a day, and gradually increased the dose to a drachm, dissolved in small beer. When he had taken the medicine for about a month, the tumors had sensibly diminished in size. He went on taking the alkali, and the tumors continued to decrease. It was just then that iodine began to have a reputation, much indeed beyond what experience has proved it to deserve, for the cure of morbid growths, and I left off the liquor potassæ, and prescribed the tincture of iodine instead. The effect of this change of treatment was remarkable. The patient lost flesh while the tumors increased in size. Of course, I omitted the iodine and prescribed the liquor potassæ a second time. Altogether he took a very large quantity of the latter medicine, and left the hospital very much improved, with directions that he should continue to take it, with occasional intermissions. I had lost sight of him for some time when it happened that I was requested to visit a patient in Mortimer Street. I did not observe the patient, who opened the door, but as I was leaving the house he stopped me, saying that he wished to thank me for what I had done for him. It was this very patient. He was so much improved in appearance that he was enabled to obtain a situation as footman. There were still some remains of the tumors, but nothing that was very remarkable. I have seen some other cases of the same kind in which the exhibition of very large doses of liquor potassæ appeared to be of very great service. But I have not had the opportunity of trying it, or of knowing the results in every case; and I am informed that in some cases it has been given to a considerable extent without manifest advantage." (*Lectures on Pathology and Surgery*, 1846, p. 275.)

In my own experience medicine, massage, electricity, and everything that I have tried have been without apparent effect upon this disease.

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37 WEST FIFTY-FOURTH STREET.

DRAINAGE IN OPERATIONS UPON THE BILIARY SYSTEM.*

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According to Surgeon to Mount Sinai Hospital.

The surgery of the biliary passages is still in a decidedly unfinished state, and this in spite of the earnest work of innumerable conscientious surgeons. Progress has, indeed, been made and operative procedures have multiplied. Instead of the routine cholecystostomy of twenty years ago, we have passed through the stages of cholecystenterostomy, ideal cholecystostomy, and universal cholecystectomy, and we read not infrequently of such beautiful and delicate operations as resection of the common duct, transduodenal choledochotomy, and hepaticoduodenostomy. But the number of deaths, except in uncomplicated cases, is still great. To be sure, operative recovery after work upon the uninflamed gallbladder is almost constant, and the percentage of mortality after the simpler operations upon this viscus even in acute cases is low. When jaundice appears as a complication, however, and surgical interference with the common duct is required, the picture changes, and even in the most skilful hands the death rate is shocking.

The impressions recited in this paper are from a collected experience with more than three hundred cases, including examples of nearly every known operative procedure on the gallbladder and its associated ducts. I have reached the conclusion that in obstructive jaundice, especially the chronic variety, the skilful employment of biliary drainage is the most essential measure in reducing operative mortality. I also believe that the longer the jaundice has existed the greater must be the caution in relieving the condition. Chronic obstruction leads to secondary cirrhosis of the liver with its attendant dangers, not the least of which is hæmorrhage;

also, just as reflex anuria may occur after the operations for the relief of renal obstruction, so in long continued hepatic blocking, constant or intermittent, the attempted surgical drainage of the liver through its ducts may be followed by suppression of bile. This suppression may gradually be relieved after a few days, or it may persist and be the cause of a fatal cholæmia. The following cases are illustrative.

CASE I.—Esther B., about fifty years old, had jaundice and symptoms which resembled those of secondary cirrhosis from stone. One sign, however, left a pretty reasonable doubt as to the cause of the disease being calculus, and this was the enlarged, tense gallbladder which could be palpated with ease. According to Courvoisier's law this would indicate an extrabiliary factor as the cause of the obstruction. Operation was performed in October, 1906. Owing to the obesity of the patient and the consequent depth of the wound I removed the gallbladder in order to reach and explore the ducts. This was easily accomplished and the hepatic and common ducts very thoroughly examined. No bile flowed. The liver was distinctly cirrhotic. There was a considerable quantity of bile stained fluid in the abdomen, but absolutely no bile in the passages, which were not distended. The gallbladder was distended by bile stained mucus, which did not empty into the ducts. The head of the pancreas was hard and considerably enlarged. Tube drainage of the hepatic duct was secured, but the suppression of bile was complete and the patient died cholæmic some days afterward.

At the post mortem examination the cause of the obstruction was found to be a carcinoma of the head of the pancreas.

The sudden relief of a liver tremendously engorged by long continued common duct obstruction has caused death from pure shock.

CASE II.—A woman, about sixty years of age, deeply jaundiced after many months of obstruction by calculus, had become so emaciated that a hard mass, which proved to be a stone of the size of an almond, could be palpated through the unopened abdominal wall. In spite of the icterus her general condition was so good that I considered her an excellent operative risk. Through a small incision the common duct was reached, the stone removed, and the opening in the choledochus sutured. The entire operation consumed but twenty minutes. She was greatly shocked, however, and died two hours later, without hæmorrhage or other assignable cause.

In secondary cirrhosis following obstruction the danger of secondary hæmorrhage is very great, and this hæmorrhage need not be confined to the immediate operative field.

CASE III.—Mrs. C. F., thirty-one years old, was admitted to Mount Sinai Hospital on December 27, 1905. Her gallbladder had been extirpated February 28, 1903, for gangrenous cholecystitis and obstructive jaundice, a choledochotomy having been done at the same time and a calculus removed. There was free drainage for about six weeks. After recovery from the operation she suffered from intermittent attacks of biliary colic. Her jaundice returned soon after she left the hospital and usually deepened during and after her attacks. At these times the stools were clay colored. On December 29, 1905, choledochotomy was performed and a great deal of gravel, about twelve grammes in all, was removed. The mass had completely blocked the common duct, which had become greatly dilated. After operation the temperature remained elevated and the jaundice persisted. January 11th, thirteen days after the

operation, because of the presence of a hematoma in the abdominal wall, an incision was made under local anesthesia, and half a pint of bloody fluid escaped from the rectus sheath and peritonæum. The patient became steadily weaker and died seven days later.

It has been said that long continued drainage tends to reduce the chances of the recurrence of calculi. At the first operation in Case IV the common duct was drained for six weeks, and yet within a few months the symptoms of gradual obstruction began. It is probable that the calculus material was formed in the liver and that no fixed time of drainage would have availed.

As to hæmorrhage, I have observed two forms. First, the recurrent variety, appearing as a general oozing immediately after the operation with little tendency to the formation of coagula. This may be checked by packing and pressure, the condition of the blood correcting itself with the disappearance of the jaundice. Another variety, uniformly fatal, occurs from five days to a fortnight after operation, and this is the type exemplified by the foregoing instance in which there was hæmorrhage into the rectus and other muscles remote from the wound with a large quantity of bloody fluid in the abdominal cavity. I can recall at least five other cases within the past two years in which this type of bleeding was the cause of death. I have never seen alarming hæmorrhage of this later secondary kind when the jaundice has been of short duration, say, six weeks; and in every one of the chronic cases in which I have been able to secure a specimen of liver for examination secondary cirrhosis or cholangitis was present.

I believe that in chronic profound obstructive jaundice the proper method of procedure would be to secure drainage of a gradual character and that a special effort should be made to avoid the too sudden relief of hepatic tension. If the size and condition of the gallbladder permits, a simple cholecystostomy should be performed as a temporary measure, making the stoma very small so as to prevent the too sudden relief of tension. The operation for radical cure by whatever means may be necessary should be postponed until the conditions have become favorable. In accomplishing this temporary relief great precautions should be taken to prevent the formation of adhesions which might embarrass the operator at the subsequent step. Gauze packings should be dispensed with, and there should be as little handling of the viscera as possible, using the rubber gloved hand *without* gauze during the manipulations.

In the old days we performed cholecystostomy in two stages, an altogether unnecessary refinement. One stage for this operation is perfectly safe. We now perform choledochotomy at one time, and I am convinced that if we divide the operation into two stages the death rate will also be cut in two. The analogy between this operation and that of prostatectomy in two stages or of intracranial work in two or more stages is close enough to make this suggestion well worth following.

In infectious cholangitis drainage, as early and complete as possible, should be the rule. Here we have to deal with a live spreading infection, and quick removal of as much of the noxious material as possible is to be desired. A case bearing upon this may prove instructive:

CASE IV.—T. C., a man of fifty-five, had been to a physician repeatedly for biliary disease with attacks of jaundice. I saw him in October, 1904, after several weeks of icterus with all its disagreeable and dangerous accompaniments, including fever and emaciation. In November I removed the thickened and distended gallbladder with its calculi, and also opened the common duct and extracted the obstructing stone. A quantity of pure pus, followed by pus and bile, poured from the hepatic duct, and the proglottis became most sticky. Tube drainage of the hepaticus was continued for some weeks, and after a very troublesome convalescence from his cholangitis there was permanent recovery.

In noninfectious and acute (short of six weeks) icterus drainage by the natural channel, into the bowel, with suture of the wound in the duct, promises a speedy cure without the annoyance of a biliary fistula and with far less liability to the formation of intraperitoneal adhesions with their subsequent dangers.

In acute obstruction of the cystic duct with no antecedent jaundice the removal of the cause will often suffice. If the gallbladder is distinctly diseased or if there is stricture of the cystic duct cholecystectomy with ordinary wound drainage is the best procedure. When there is a history of jaundice, however, one should continue the incision into the common duct in order to be as certain as possible that the way into the duodenum is clear. Drainage will not be required if there has been obstruction by a solitary nonfacetted stone, but if the calculus was soft and friable, perhaps a mass of bile sand, very long continued drainage should be the rule. In chronic jaundice with a small, thick gallbladder containing no bile, it is best to perform cholecystectomy, explore, and drain. In cholæmia from obstructing new growth external drainage of the gallbladder is the correct procedure for the relief of the icterus. In pancreatitis, even without jaundice, drainage by way of the gallbladder will often effect an apparent cure.

Conclusion.—To sum up the vital points of this subject we may say:

First.—That the scientific and judicious employment of preliminary drainage in obstructive jaundice will probably lessen the dangers of such steps as may be necessary for permanent cure.

Second.—That this drainage should form the sole object of the surgeon's work until the factor of cholæmia has been eliminated.

Third.—That radical operations should, in most chronic cases, be postponed until hepatic engorgement and icterus no longer exist.

766 MADISON AVENUE.

THE SURGICAL TREATMENT OF FIBROID TUMORS OF THE UTERUS COMPLICATED BY PREGNANCY.

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It has been thought best to approach this subject by some general considerations which indirectly bear upon the surgery of this condition, inasmuch as it gives us a broader view of the subject and consequently a more intelligent foundation upon which to build our surgical conclusions.

Read by permission before the New Mexico Medical Association at the regular meeting on May 8 and 9, 1907.

Relation of Uterine Fibroids to Pregnancy.—That married women with myomatous uteri are generally sterile is the universal observation of clinicians. Yet the statement that there is no subject upon which there is no diversion of opinion is here borne out by the views of Hofmeier (1), who maintains that the great majority of uterine fibroids have nothing to do with sterility; that, on the contrary, women who marry late in life, with fibromatous uteri, are more prone to pregnancy than those who have not. Statistics, however, bear out the observation of clinicians. According to Williams (2), only twenty-five per cent. of women with uterine myomata bear children, while, according to the statistics of Kelly (3), only a little over two per cent. are fertile. Frankel (4) states that more than thirty-three and one third per cent. of women with myomatous uteri have never had more than one child during their whole married life, while a series of several thousand cases of women with other pelvic diseases show only five per cent. of the same comparative sterility. Whether the myoma is the cause or the effect of sterility is still *sub judice*, and the question will probably never be settled till the cause of fibroids is determined.

Whether uterine fibromata are the cause or effect of sterility, the fact remains that the percentage of fertile women with myomatous uteri is very small. The statistics of Pinard (5) are significant. He says that out of 13,915 parturient women in the Baudelocque clinic, only eighty-four had fibromata, or 0.6 per cent. Of these eighty-four patients all were either primiparæ or else secundiparæ with first baby ten or twelve years previous.

Noble (6) finds, in analyzing 2,274 cases operated on for fibroid tumors of the uterus, that only thirteen cases, or 0.57 per cent., were complicated by gestation. One interesting feature of this series is that six ectopic gestations occurred. Three hundred and thirty-seven of this series are Noble's own cases, in which no gestations of the uterus occur, but three ectopics do occur; while in the seventy-five cases of fibroids complicated by gestation, collected in this series I am about to present, only one case of ectopic gestation is recorded.

According to Douglas (7), submucous fibroids are most prone to produce sterility; next in importance are interstitial fibroids; and, least of all, subperitoneal.

Pregnancy with submucous fibroid seldom goes to term, usually resulting in abortion due to interference of the tumor projecting into the cavity of the uterus. This is accounted for by the fact of rapid growth which always takes place in the tumor at the inception of pregnancy. The foetus grows rapidly, so does the tumor, generally more rapidly. Both foetus and tumor try to occupy the uterine cavity at once. The tumor being fixed, the foetus is pushed from the uterus. After abortion the uterus and fibroid may both involute and both return to their former positions before pregnancy began, but more frequently the increased blood supply feeds the tumor to increased activity and rapid growth.

The dangers of fibroids in pregnancy consist chiefly in their location, and secondly in their size. Tumors about the cervical portion of the uterus and those extending within the broad ligaments are

most dangerous because of their interference with delivery, often rendering delivery impossible. On the other hand, quite large tumors of the fundus, especially of the subperitoneal variety, may interfere but slightly with the progress of pregnancy and delivery.

Interstitial fibroids, especially if of considerable size before the beginning of pregnancy, grow marvelously rapidly under the stimulus of pregnancy, and may become so large, and consequent intra-abdominal pressure become so great that dyspnoea results, and other pressure symptoms, with inability to digest or even eat food. Albuminuria with casts, ascites, and œdema of the lower extremities may result, and the patient be reduced to skin and bones. My own case was interstitial and illustrates well these conditions.

Diagnosis.—Diagnosis of coexisting pregnancy with fibroids is generally not difficult, but occasionally may be difficult or even well nigh impossible. Aside from the usual symptoms of pregnancy we have an accompanying rapid enlargement of the fibroid with softening due to increased vascularity, œdema, or cystic degeneration of the nodules. Occasionally when there is a large tumor of the cervical portion, or an intraligamentous tumor, or an enormous size of the entire nodular uterus with a large nodular mass in Douglas's *cul-de-sac*, as in the author's case, pregnancy cannot be diagnosed, but suspected only.

The Question of Treatment.—Now we come to the main point at issue: What are we to do with these cases when we do run across them? Though they are comparatively rare, there are few general practitioners who do not sooner or later have such cases to deal with, cases which make the doctor's hair grey and make him wish he could go away for a vacation. To determine this subject let us turn our attention to statistics:

Abortion.—Abortion does not occur as often as might be expected. It seldom occurs except in submucous tumors as pointed out before. Hofmeier (1) observed only two cases in twenty.

Miscarriage.—Miscarriage is more frequent. Murray (8) reports two out of three cases of primiparæ between thirty and thirty-five years of age. One died of sepsis from miscarriage at third month; the other miscarried at the fifth month and recovered; the third died of sepsis, having refused operative interference.

Delivery at Term.—According to Stavelly (9), if abortion occurs as a natural result, the maternal mortality is 12 per cent., while induced abortions have a mortality of 33 per cent., a horrible mortality to contemplate. In delivery by the natural passages at term, the mortality is from 25 per cent. to 55 per cent. maternal and 77 per cent. foetal. In 597 cases collected by Stavelly (9) in which nothing was done till labor came on at term, 220 mothers were lost.

Malpositions.—Breech presentations occur in 24 per cent. of these cases (Winckel 10). According to Olshausen, as reported by Noble (6), abnormal positions of the child in utero are produced by fibroid tumors of the cervix or lower segment, as follows: Vertex, 54 per cent., against 95 per cent. normally; breech, 24 per cent., against 3.1 per cent. normally; transverse, 19 per cent., against 0.6 per cent. normally.

Forceps Delivery.—Forceps delivery is exceedingly dangerous. Olshausen, as reported by Noble (6), collected numerous cases from various authors. Sussertott collected twenty forceps deliveries with death of eight mothers and thirteen children. Nauss had nineteen cases with five maternal deaths.

Version.—According to Noble, the mortality from version is truly astounding. Defour states that in thirty-five cases twenty-one mothers and twenty-

of treating these patients than Nature offers, even when assisted by skilled obstetricians. This far better means is fortunately offered by surgery.

Before proceeding to analyze the cases collected as the foundation of this article, I wish to report in detail a case that came under my care, which serves to illustrate strikingly many points that have been stated up to this point in dealing with my subject.

CASE I.—In the early part of last July I was called to see Miss X., in consultation with her physician of this city. I report the case from the history book, written at the time.

The patient is a woman, forty-two years of age, unmarried, and gives the following history: Childhood and family history are negative as far as bearing upon the present condition. Ten years ago the patient felt a "lump" within the abdomen, just above and to the left of the pubes. She had no inconvenience from the "lump," and though she told her mother, neither thought much of it. This lump gradually but slowly increased in size till, three years ago, it reached nearly to the umbilicus. Up to this time the growth gave little or no trouble, but during these past three years growth has been more rapid and pressure symptoms have grown worse and worse. She has consulted "all the doctors" of her town for relief of her condition. Operation was advised years ago, but she always refused, because she greatly feared the result. During the past year the growth of the tumor has been very rapid, and especially during the past six months. The patient's condition has grown commensurately worse, from great discomfort to illness and confinement to bed.

Menstruation began at fourteen, and continued, regular and painless till five months ago. Since that time there has been no menstruation at all. There never has been any hæmorrhage or "flooding." Till a year ago, patient states that her health was good and that

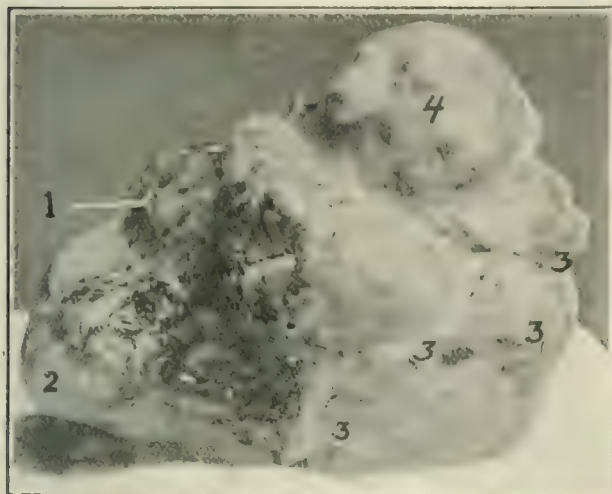


FIG. 1. Tumor as removed. 1, stick in cervical canal; 2, nodule that filled pelvis; 3, some of the sites of intestinal adhesions; 4, nodule that occupied the epigastrium. Tumor lies on its posterior surface, anterior surface up. Weight, 2062 grams.

seven children died. In Sussertott's twenty cases, twelve mothers and seventeen children perished. Nauss reports twenty-six cases with twenty maternal deaths.

Dangers of Delivery.—The dangers encountered in delivery by natural channels at term, which give such horrible maternal and foetal mortalities, are: 1, blocking of the parturient canal, thus mechanically preventing delivery; 2, mal positions, prolapse of cord and extremities; 3, hæmorrhage from rupture of uterus or tearing of the friable tumor, especially from the inability of the fibroid uterus to contract properly to close the mouths of the open vessels; 4, placenta prævia; 5, the patient having escaped all these dangers at delivery, the fifth danger threatens her of retarded involution with infection and sloughing of the fibroid mass, and final death from exhaustion, due to sepsis. To illustrate the possibility of unusual dangers I cite the case reported by Hamilton (11), in which the patient underwent normal delivery at term.

On the second day there occurred symptoms of internal hæmorrhage with collapse. Abdominal section showed the belly full of blood, due to the opening of a large, thin, walled vein of one of the fibroid nodules. The vein was opened by omental adhesions formed during the pregnancy and, upon delivery, sudden diminution in the size of the uterus dragged upon the adhesion to such an extent as to tear open the vein. Hysterectomy was performed with recovery.

Should the patient escape all these dangers mentioned, the tumor frequently shrinks into insignificance.

From the light of the statistics which I have cited, it is evident that we must seek some better means



FIG. 2. Tumor cut open, exposing fetus as it lay in utero, with the cord about the neck. The fetus is out of all proportion to its proper size in relation to the tumor, due to camera exaggeration (closeness of lens). Probably not more than 5th or 6 months' fetus. Position R. O. A.

she was in good flesh. Since that time she has lost flesh rapidly on account of bad digestion and loss of appetite. During the past few months she has hardly been able to eat anything besides liquids, and during the past month had fever and frequent "spells" of vomiting and purging.

Upon examination she presented the following condition: A woman who appeared to be fifty years of age, pale and anæmic; emaciated almost to a skeleton. The abdomen is enormously distended from pubes to ensiform cartilage. The contour of abdomen is irregular, and the costal margin is pushed forward.

Palpation reveals a hard tumor with numerous nodules, several of which are as large as a cacaonut or even larger. The tumor is fixed and very tender at numerous points. The pelvis is full of a firm, immovable mass. The tumor, though nodular and fixed, is firm and smooth like a fibroid, and is evidently connected with the uterus. Pulse is 110 and temperature 101° F. Patient cannot sleep when lying down on account of embarrassed respiration and heart action. Heart and lungs are in a good condition. There is no œdema of hands or feet. Urine shows trace of albumin and a few hyaline casts.

Her physician had advised against operation, believing that the condition was malignant and that she could not survive an operation. Though I was obliged to admit that the marvelously rapid growth of the tumor during the past few months and the consequent rapid decline of the patient was probably due to malignant degeneration of tumor, still there was nothing else to be done except operate. Though her physician, on my recommendation, then advised operation, he was so undecided in his advice that operation was refused.

Last August, about a month after my first seeing her,



FIG. 3. Fœtus pushed from uterus with tumor drawn up more closely so that proportions are more nearly correct. Plate spotted.

the patient, being driven by her horrible plight to seek relief from her sufferings, consulted Dr. F. W. Gallagher, of this city, who referred her to me for operation. I saw her in the hospital, and again quote from my history book:

The condition of the patient is worse in every respect than it was before. The swelling of the abdomen is perceptibly larger. Respiration and heart are more embarrassed. Temperature higher; pain greater. Both feet and legs are œdematous to a marked degree. Urine shows albumin 1 per cent. and numerous hyaline casts.

As the patient's condition was extreme, she was kept under observation for two days, hoping by careful nursing and feeding to improve her general condition. So little improvement followed that it was decided to operate after two days' attempt. During this time the temperature ran between 101° and 103° F., and pulse between 120 and 130. The kidneys were somewhat improved by saline enemata and stimulants. The patient now made no objection to operation or anything else that gave any promise of relief.

Operation.—On August 15th, the third day after patient's entering the hospital, I opened the abdomen. An enormous fibroid, hard and firm to feel, with numer-

ous nodules, was found (see Fig. 1). The tumor was adherent to the transverse colon, stomach, and intestines in numerous places. With an incision from the ensiform cartilage to the symphysis, the tumor was gradually lifted out of the abdomen, as the adhesions were separated from above downward, and the intestines packed away with sterile hot towels. The tumor was finally delivered by greatly stretching the abdominal wound. An enormous retrocervical nodule filled the entire pelvis. This nodule fitted the pelvis so tightly that it was extricated with difficulty.

After the tumor was freed from its adhesions and delivered from the abdomen, removal was simple. The uterine veins and arteries were enormously enlarged, but the tumor was hard and tense. The broad ligaments were clamped and divided. The uterine arteries were then caught and the tumor cut away and handed to a nurse, who held a large tray for its reception. The ovarian arteries and other bleeding vessels were then secured, and the peritonæum closed over the cut surfaces of the broad ligaments and the cervix with plain catgut. Catgut was used throughout for both ligatures and sutures, as is my custom in all cases.

The abdomen was closed with retention through and through silk gut sutures and catgut apposition of peritonæum, fascia, and skin. In all long incisions a few through and through silk gut "relaxation" or splint sutures were used to take the stress off the catgut sutures. Three or four such sutures were all that were necessary to prevent catgut stress during the first week. This method of closure has proved so satisfactory that no other method has been used.

After I had finished the operation and closed the abdomen, the nurse in charge of the operating room asked me if I wanted the tumor. I told her no, but that on account of its unusual size I would have it photographed. I took the tumor directly to a photographer and had it photographed (see Fig. 1).

As it is always my custom to cut open pathological specimens for examination I cut open this specimen, suspecting areas of malignant degeneration. To my great surprise out gushed a quantity of amniotic fluid, and a fetus of about five or six months, presented in the womb with the cord wrapped about the neck. In that position I had it photographed (see Fig. 2). I then removed the fetus from uterus and had the third photograph taken (see Fig. 3).

A careful examination of the tumor then revealed that in one place the uterine wall was not more than one eighth of an inch thick and very easily torn, as all the tumor was remarkably friable for a fibroid. There was no evidence of malignancy at any point, although the centre of each large nodule was necrotic, apparently from the rapidly growing cortex, cutting off its blood supply, thereby imitating malignancy.

The patient made an easy recovery, and went home at the end of two and a half weeks. Urine was normal after two weeks.

The extreme size of the tumor in this case is worthy of attention. As removed, the tumor weighed 20.5 pounds. I am not able to find any case previously reported with a tumor anything like so large. Robinson (12) reports a case in which the tumor weighed 12 pounds. It seems incredible that a woman could become pregnant in the condition of the patient at time of conception. It is probably explained by the fact that the tumor was interstitial and subserous and the uterine mucosa remained unaffected. Though the patient was examined by six or eight physicians before the operation no one even suspected pregnancy.

The question of diagnosis was, in this case, perhaps, the most interesting. Pregnancy was not diag-

nosticated, in fact, not even suspected when the tumor was removed, and by referring to Fig. 1, it would certainly seem incredible. The size of the tumor, the age of the patient, and her invalided condition, even if she had been married woman, would have probably precluded more than a suspicion of pregnancy. Still, in looking over the rapidity and apparent malignancy of the last six months' growth of the tumor, it is clear that the enormous stimulus to growth was the pregnancy.

The temperature is readily accounted for by the areas of degeneration in the fibroid masses and to digestive disturbances due to pressure. The œdema of the feet and legs was evidently due to pressure on the iliac veins by the fibroid mass in the pelvis, which fitted it like a cast. The nephritis was also probably due simply to pressure, judging from the rapid clearing up of the condition after the operation.

Analysis of Seventy-two Cases Collected.—In the past four years there are, including the author's case, seventy-two operated cases reported. Of these seventy-two cases thirty-three were hysterectomies; nineteen were Cæsarean sections, and eighteen myomectomies. This does not include obstetric operations, such as craniotomy, forceps delivery, etc.

Of the thirty-three hysterectomies there is not one single death reported. Twenty-eight were done before the sixth month and the uterus and child removed intact. The convalescence of these women was easy and uneventful. Five patients were operated upon after delivery of child by instruments. The children all died, and the mothers all recovered after hysterectomy and such stormy convalescences which make the reviewer feel that it was largely luck that many of them survived.

The nineteen Cæsarean sections show death of three mothers, giving a total maternal mortality of 15.6 per cent. Two of the nineteen sections were done before term, one at the seventh, and the other at the sixth month of pregnancy. Coming on of labor was cause of time of operation in the seven months' case, and dangerous pressure symptoms the cause in the six months' case. Both of these children died, as was to be expected. In the other seventeen sections all of the children lived. All were done at full term, or approximately so.

Eighteen myomectomies show no immediate mortality. Twelve of these patients are reported as having gone to normal delivery at term; some were lost track of; one died from miscarriage some time after operation.

Special Cases Illustrating Dangers of Treatment Other Than Surgical.—In the general consideration of my subject I have already called attention to the dangers of abortion, miscarriage, and delivery at term of fibroid uteri. To further emphasize the dangers of delivery of the child by natural channels in this condition, and to give a stronger basis for the deductions arrived at in concluding this paper, I am going to cite a few cases out of many reported in the journals in the past few years.

Dickinson (13) reports an interesting case of extreme rotation of a full term uterus by a strangulated fibroid. Child was delivered by version and died in one hour. Delivery was done on account of an error in diagnosis. A diagnosis of ovarian cyst

being made and the transposed round ligament confirmed the error. Mother was saved by hysterectomy. Had Cæsarean hysterectomy been done in this case the child should have been saved as well as the mother.

Duncan (14) reports a case in which he emptied the uterus of a newly married woman on account of retention of the urine. Later he was obliged to do hysterectomy for continued continence of urine and the rapid growth of the fibroid uterus.

Even when the patient has done well during one or two former deliveries there is no guarantee for future deliveries, as the following case shows:

Briggs (15) cites this case where the patient was successfully delivered of her sixth and seventh pregnancies in the presence of a fibroid. In her next pregnancy she was delivered, and did well for a few days. She then developed chills with a temperature of 104° F. and pulse 140. There was persistent regurgitant vomiting of coffee ground material. Abdominal section was done, and a strangulated fibroid with extensive sloughing and resulting peritonitis was found. Recovery after a long illness.

Le Page (16) and Moucholte (16) report five similar cases of torsion of fibroid tumors. Four had myomectomy done and three went on to delivery at term. One died of a miscarriage at four months.

Hargrave (17) reports an interesting case of rupture of the uterus at full term, due to fibroma. Delivery by version was attempted, but on account of large head partial craniotomy was done. Upon occurrence of rupture of uterus patient was immediately taken to hospital. Patient died as she reached the operating room, twenty minutes after the occurrence of the accident.

Von Thorn (18) also reports a case of ruptured uterus in which he did a hysterectomy, with recovery of patient.

Schwartz (19) reports a case of dystocia at term in which Cæsarean section was planned, but on account of stoppage of foetal heart sounds craniotomy was done instead. Mother died and post mortem showed a large fibroid in left broad ligament.

Operative Procedures.—Now having shown conclusively that operative procedures are far superior to obstetrical measures by normal channels even in the hands of experienced obstetricians, let us turn our attention to the different operative procedures which are myomectomy, hysterectomy, and Cæsarean section with usually hysterectomy or myomectomy combined.

Myomectomy.—Myomectomy is unquestionably the operation of choice because, first, the operation is exceedingly safe; second, 80 per cent. of patients so operated upon go on to delivery at term; and, third, the generative organs of the woman remain undisturbed, leaving a perfectly healthy, normal woman. However, the application of this operation is unfortunately limited to very few selected cases. It is limited to such cases as permit the removal of all fibroid nodules from the uterus. It is peculiarly applicable to solitary pedunculated fibroids such as are easily removed with little traumatism to disturb the pregnant uterus. It is necessary that all fibroids be removed because the stimulus to growth due to pregnancy may make an insignificant nodule, especially about the cervix, become an insuperable barrier to

delivery at term. This is forcibly illustrated by the following case reported by Harrison (20):

The patient had had a successful myomectomy done at the fourth month of pregnancy, but unfortunately for the patient, a small subserous nodule was left near the cervix. When labor came on at full term this tiny nodule had grown to be so large that it formed an unconquerable obstacle to delivery. Cæsarean section was resorted to with death of mother.

If the uterus is too heavy to stay in place and it is deemed dangerous to leave it as it would lie, it is better to remove than to do a ventral fixation, as is shown by the case reported by Hubbard (21), in which the surgeon, after doing a myomectomy, sutured the uterus to the abdominal wall. At term dystocia was so great as to necessitate Cæsarean section. Ventral fixation is always a pernicious operation in a child bearing aged woman, and especially so, of course, while she is pregnant.

In doing myomectomy it must be further borne in mind that there is danger of future abortion or miscarriage which may result fatally, as did the case reported by Holmes (22), in which myomectomy was done at the fourth month with recovery and two months later miscarriage, with death from sepsis.

This operation has been done from the second to the seventh month of gestation without disturbing pregnancy.

Hysterectomy.—Hysterectomy is, in the great majority of cases, the operation of necessity. The safety of the operation is its great merit. The sea is smooth sailing for the patient after hysterectomy and there are no storms ahead. In the mind of the thoughtful and conscientious surgeon the life of the mother must ever have precedence over that of her unborn offspring; consequently this operation, on account of its offering almost perfect safety to the mother, is the operation of choice in cases of interstitial and multinodular fibroids in which myomectomy is not safe. This includes by far the greater number of cases with which we have to deal. The time for operation is early, before pressure symptoms with all their accompanying train of evils are encountered.

In hysterectomy the ovaries should be left intact if possible to prevent the nervous phenomena so common (imaginary or otherwise, as you please) after removal of both ovaries. One ovary or a piece of one ovary should always be left, except in malignancy for the reasons stated.

There are exceptions to all rules, and this one has, to my mind, a very important exception, viz., in primiparæ with fibroid uteri. Unmarried women beyond the age of thirty seem to be especially prone to fibromata. When married after this time these tumors seem to have little influence in preventing pregnancy. In fact, the observations of Hoffmeier (1) that they are more prone to pregnancy than those under the same conditions who have not, seems to be true. Murray (8) reports three such cases within two years' experience, and there are few men of wide experience who have not had to deal with such cases.

Fibroids in primiparæ, then, are the exceptions to hysterectomy, and the mother's safety should be strained to the limit for the safety of the child, and every effort should be made to carry her on to full

term, and then Cæsarean section should be performed with myomectomy when possible, but generally hysterectomy is required.

Cæsarean Section.—Cæsarean section is the proper operation for all cases of fibroids at full term of pregnancy. Delivery should not be attempted, because the danger of delivery to both mother and child is far greater than that of Cæsarean section with hysterectomy or carefully selected cases of myomectomy, for hysterectomy must follow sooner or later, even should the dangers of delivery be passed.

The mortality of Cæsarean section hysterectomy is very little more than that of hysterectomy when the operation is done at the proper time. It should be done at term before labor begins, with all prepared and ready just as in the ordinary operation. When labor begins before time it should be done just as soon as it is clear that labor cannot be stopped. A clear understanding of this fact by the profession, and a consequent calling of the surgeon early, will do more to reduce the mortality of Cæsarean section hysterectomy than all else combined.

Porrocæsarean section seems to be attended by a much higher mortality than Cæsarean section with simple hysterectomy and should not be done except when it is absolutely necessary to remove the cervix as in cancer.

Numerous operators have done Cæsarean section by simple myomectomy with success, which is the best argument in favor of the operation. Fernwald (23) reports two such cases with recovery of mother and children. This operation should never be done, save in such instances as the mother's condition will not admit of the severer operation of hysterectomy. Myomectomy with Cæsarean section should be done where possible. Esch (24) reports such a case in which a myomatous nodule of 350 grammes was removed. Both mother and child recovered.

According to Routh's statistics (1903), of the 1,099 cases of Cæsarean section done after foetal viability, 110 were done for fibroids complicated by pregnancy. He states that the mortality of the operation has fallen from 75 per cent. to 20 per cent. in the previous ten years. The mortality is now about 16 per cent., and when the necessity for immediate operation is thoroughly understood and acted upon, there is no reason why it should not drop to 5 per cent.

Comparison of Surgical and Obstetrical Results of Treatment.—Keep in mind that the worst operative maternal mortality is 15.6 per cent. (Cæsarean section), against 25 per cent. to 55 per cent. (Stavelly), maternal mortality by obstetrical measures. By Cæsarean section the child mortality is less than 5 per cent. when done at term. By obstetrical procedures the child mortality is 77 per cent. A striking contrast. The difference in mortality between the surgical treatment of abortion and miscarriage and obstetrical treatment is so striking as to be overwhelmingly in favor of surgical treatment.

Deductions.—In conclusion I beg to submit the following deductions, after premising that there is no rule in surgery that may not have an exception:

1. All cases of fibroids complicated by pregnancy should be treated surgically and not obstetrically.
2. Myomectomy should be performed only in

such cases found suitable for this operation. It is otherwise dangerous.

3. Cesarean section should be done for all cases of fibroids complicated by pregnancy at term.

4. All cases of abortion or miscarriage which can not be stopped should be immediately submitted to hysterectomy.

5. All cases in which the size of the tumor, pressure symptoms, or any other cause endangers the life of the mother, should have hysterectomy performed.

6. Craniotomy is bad practice at any time and never justifiable on a viable child.

7. All these cases should be sent to the hospital for observation when threatened with abortion or miscarriage, and likewise all full term cases a short time before term, so that surgical procedure can be undertaken with all the care and deliberation of every day major operations.

When the above rules are conformed to, many mothers and children will be saved who are now lost.

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Nos. 302-3-4 TRUST BUILDING.

EXTERNAL HÆMORRHAGE IN ASSOCIATION WITH ECTOPIC PREGNANCY.

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The ripe human ovum is about the 1-150th of an inch in diameter, and in order that the evolutionary changes originated in it by the stimulus of fertilization may be duly maintained and completed, it is imperative that the maternal tissues immediately concerned in harboring it should furnish an adequate supply of those materials which are requisite and necessary for carrying on the processes of metabolism.

The fecundated ovum may and does occasionally develop and attain maturity in some structure outside the uterus, but the uterus is designedly its habitat, and its vital presence in this organ induces

here physiological changes such as no other structure is capable of exhibiting. The power of adaptation to circumstances is a quality of the highest biological importance, and sometimes the ovary as well as the Fallopian tube is afforded the opportunity of displaying this property, as the oosperm arrested permanently in either of these organs may make not only a desperate attempt to procure for itself as suitable a nidus as possible, but may therein struggle to complete its development and growth. The response, thus vicariously educed from these structures, is, however, of a very different kind to that evoked naturally from the uterus. In the latter case, the reactionary disturbance invades the entire organ in a very special and stereotyped manner, and produces changes of a physiological order which are again destined in due course to undergo dissolution, whereas, in the former, the reaction is of a somewhat erratic character, and causes changes which are essentially pathological.

The woman who becomes the subject of an ectopic pregnancy is at the onset of this untoward event usually in the best of health, and the vascular excitation induced by the presence of an active oosperm causes rapidly an exudation of lymph from the peritonæum in the immediate neighborhood, and speedily this lymph becomes organized. Thus it happens that, as a rule, before the end of the second or the third week of a tubal gestation the fimbriated extremity of the Fallopian tube is hermetically sealed and closed, and sooner or later thereafter the gestation sac itself contracts adhesions with neighboring and contiguous organs and structures. This, altogether, is a most salutary phenomenon, as the vicariously functioning organ which grows less and less resistant on account of the vital pressure exerted by the contained and enlarging ovum is by this means strengthened, and rupture of the gestation sac with its disastrous results is consequently of less frequent occurrence than otherwise it would be. Moreover, these adhesions may be and commonly are utilized as a medium for augmenting the supply of blood to the embryo, when, as pregnancy advances, this tends to become inadequate.

It is universally admitted that the various tissues of our bodies have very different nutritive affinities; each selects and appropriates from the blood those substances which are requisite not only for its own immediate use, but for the due fulfilment of its function. Let me here remind my readers what in this respect obtains in the case of the oviduct of the barn yard fowl: The cells which constitute the lining of this canal do not all function alike, and we are justified in believing that they do not all make the same demands upon the fluid which supplies them with pabulum. A certain portion of this oviduct is commonly spoken of as the uterus, as the cells located in this portion secrete a thickish white fluid which when deposited on the egg goes to form the shell. This shell consists chiefly of lime carbonate, magnesium carbonate, lime phosphate, and magnesium phosphate, and the cells located in the so called uterus are so endowed that they abstract and collect these salts from the blood in proportions specially suitable for incrustation. What is true of this specialized group of cells in the oviduct of the barn yard fowl, is true of all structures which function differently, each makes a specific demand upon

the nutrient fluid with which it is bathed. In the human female the ovary, the Fallopian tube, and the uterus play each such a very different part in the normal process of reproduction that their nutritive requirements must be very dissimilar, and we are justified in assuming that even when vicariously influenced these cannot be very materially altered.

Prior to the formation of any vascular system in the ovum, the oosperm obtains its pabulum from the maternal tissues by means of osmosis solely, and as the cells of the endometrium are specially endowed for carrying on this osmotropic reaction it is very evident that this structure is better fitted than any other for sustaining an ovum during at least the early days of pregnancy. Gaseous substances play undoubtedly a most important rôle in the processes of metabolism, and the uterus on account of its muscular elements has in the gravid state at all events a greater respiratory power than the tube or ovary in a like condition, in as much as the streaming of the blood through the organ is aided materially by muscular contractions, and the tendency to stasis is greatly lessened. Moderate pressure, well maintained, also exerts a beneficial influence upon the circulation and heightens the textural respiration. Now the evolutionary changes proceeding in the gravid uterus cause a marked increase in the tension of this organ. This is a very evident fact, since it is this growing increase in tension which in many cases enables the retroverted gravid uterus to straighten itself spontaneously. Increase in tension is therefore another factor which tends to augment the respiratory power of the gravid uterus.

Under ordinary circumstances the entire villous surface of the chorion becomes vascular towards the end of the third week of pregnancy, and the oosperm furnished now with a universal placenta, which is retained for about three weeks, has its assimilatory powers thereby increased. During this as well as the prevascular period the nutrient substances for the embryo are obtained and transmitted from the maternal tissues by osmotic attraction. Towards the end of the sixth week of pregnancy, the evolutionary changes proceeding in the embryo can no longer be efficiently maintained by osmosis alone, and a further most remarkable change is effected in the chorion whereby the embryonic nutritive phenomena become dominated by a chemotropic rather than an osmotropic influence. What happens is, that the villous processes constituted by about four fifths of the chorion are condemned to a state of inertia, and atrophying forthwith these rapidly disappear, whilst the remaining villi, being those destined to participate in the formation of the true placenta, become more irritable and are stimulated to greater activity.

When the oosperm is arrested permanently in some structure outside the uterus, especially the Fallopian tube, it experiences during the first six weeks of its existence so much difficulty in obtaining by osmosis sufficient nutriment for the maintenance of its well being, that it is compelled to unduly hasten not only the vascularization of the chorionic villi, but also that transmutation of these structures which is the prelude to the evolution of the true placenta. The acceleration of these embryonic changes arouses unduly and hastens cor-

relatively the activity of the maternal tissues, hence the capillaries located in the lining of an ectopic gestation sac begin to enlarge earlier and are therefore prone to rupture much earlier than the enlarging endometrial vessels of a normal pregnancy. The essentially important capillary change is limited to an area dominated immediately by the irritative influences of the true placental villi. Thus influenced, these capillaries, which are composed of a single layer of endothelial cells, undergo no structural alteration, but merely become enormously dilated, and this increase in capacity is attained solely at the expense of the simple endothelial walls, the cells of which become markedly attenuated and thinned. Commensurately with this thinning the resisting power of these vessels is very greatly diminished, and the maintenance of their integrity becomes entirely dependent upon the extrinsic support which is afforded them. If at any time this support chances to be inadequate then the badly supported vessels may rupture either spontaneously or on the slightest provocation—such as an increased determination of blood to the part caused by sexual excitation. When any one of these greatly enlarged capillaries ruptures it displays no inherent tendency to contract or retract as it possesses neither muscular nor elastic elements in its wall, consequently the resulting hæmorrhage will in the natural course of events only be staid when the pressure exerted outside equals that within the vessel. A portion of this extravasated blood may find its way to the external genitals, and external hæmorrhage constitutes one of the two all important symptoms of ectopic gestation, pain being the other.

In a few rare cases fertilization of the ovum and a greater or less amount of the subsequent development of this body may be effected in the ovary. If, however, the maternal capillaries concerned in the evolution of this variety of pregnancy should chance to rupture, it is practically impossible for any of the blood extravasated therefrom to find its way to the external genitals, consequently any external hæmorrhage which may be noted in association with an ovarian gestation must be derived from vessels located either in the Fallopian tube or the uterus. It will be found to emanate especially from the latter organ, as during the evolution of an ectopic gestation there is induced a correlative reaction in the uterus, and this causes such a marked increase in the vascularity of the endometrium that the capillaries ramifying in this structure are readily provoked to rupture. By this same influence of correlation a decidual membrane is sometimes formed in and expelled from the uterus. More or less blood may be extruded with this membrane, but the extrusion may nevertheless be effected without any breach in the continuity of uterine capillaries being thereby induced. The activity displayed by the mammary glands is another instance of this influence of correlation.

The fecundated ovum, when arrested permanently in some structure outside the uterus, is most usually arrested in some portion of the Fallopian tube. Anatomically and physiologically, however, this structure is badly suited for gestation, and it especially fails in affording those maternal capillaries which are directly concerned in nourishing the embryo that amount of support which is indis-

pensable for the due maintenance of their integrity. It thus seldom happens that the reactionary dilatation proceeding in these capillaries advances far before a breach in the continuity of one or more results. In its early days the oosperm lodged in the tube is grasped in a beltlike manner by this structure and presents two free poles, a proximal or uterine, and a distal or peritoneal. In the proximity of these poles the rapidly enlarging maternal capillaries receive the scantiest support, and as the reactionary dilatation is manifested earliest by and progresses most rapidly in the vessels located towards the uterine pole, it is here that, as a rule, the initial extravasation of blood takes place, and the early occurrence of external hæmorrhage in conjunction with a tubal gestation is thus accounted for. In the ordinary course of events, as I have already observed, this internal hæmorrhage will only be staid when the pressure outside equals that within the vessel, but unfortunately several factors militate against this attainment. Even before this equalization is effected the embryonic and maternal structures may have become more and more divorced from each other by the extravasated blood, and fresh ruptures are often thus induced. This pent up blood so imperils the embryo that the latter perishes early as a rule, but the disturbed maternal capillaries do not forthwith nor yet rapidly revert to a normal condition, and for a greater or less length of time after the death of the embryo, they may continue to be a source of trouble and danger to the mother. Hæmorrhages occurring at this late stage are, however, more easily staid naturally than those evoked during the life of the embryo, hence the period of greatest danger to the mother corresponds with that of greatest vascular activity. Whenever extravasated, a portion of this blood tends invariably, on account of the pervious condition of the uterine end of the tube, to make its way to the external genitals, and it is this which constitutes the chief portion of that external hæmorrhage which is an all important symptom of tubal gestation. In tubal, as we already observed regarding ovarian gestation, external hæmorrhage may be due to the rupture of endometrial vessels. The hæmorrhage so derived presents usually the appearances of fresh blood; it is generally very transitory, but it may nevertheless be somewhat profuse. The blood which reaches the external genitals after being extravasated into the tubal gestation sac presents invariably the appearances of old blood, and it is apt to flow persistently for weeks. Sometimes, it is the continuance of this external hæmorrhage alone which causes the patient to seek advice. As it seldom if ever happens that the embryo, so disadvantageously circumstanced, survives for any length of time an extravasation which aids in causing a prolonged external hæmorrhage, the persistency of the latter may be viewed as a suspicious indication of the death of the embryo, especially if the physical signs harmonize with this opinion. Coagulation of the blood in the gestation sac favors, but the constant escape externally of more or less blood therefrom militates against the establishment of that amount of pressure which is needful to arrest the hæmorrhage. The continuance of external hæmorrhage in association with a tubal gestation even after the death of the embryo is thus easily accounted for.

Imperceptibly by a process of vital thinning, a

tubal gestation may, along a line corresponding with the mesosalpinx, invade the substances of the broad ligament. The placenta may or may not be implicated thereby. If this structure be seriously involved a greater or less amount of blood may find its way into the substance of the broad ligament and rapidly thereafter the foetus will perish. In a few rare cases, however, the placenta is neither imperilled nor disturbed by this nor any other faction, and the gestation proceeds uninterruptedly to maturity in the tube and broad ligament conjointly. Under such circumstances any external hæmorrhage which is noted will emanate solely from the endometrial vessels. I have already operated in five cases of full time ectopic gestation, extracting the child in each by abdominal section. In two of these patients there was complete amenorrhœa during a period of nine months, in the remaining three external hæmorrhage was not an important symptom; it was of infrequent occurrence and of short duration, seldom lasting longer than a few hours.

When an ectopic gestation has actually arrived at or is likely to proceed uninterruptedly to maturity, then any external hæmorrhage which has been or may be observed during the evolution of such is always and solely uterine.

18 GORDON SQUARE.

STATE REGULATION OF THE MILK SUPPLY.*

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The objects to be attained by State regulation of milk supplies should be (1) to provide a healthy and wholesome food product; (2) to encourage the producer in his efforts to make a clean and healthful product. This control should be both restrictive and educative; restrictive in prohibiting certain methods of practice, which result in an unclean product, and educative because the methods of control are reasonable.

The reasons for such control are found on the one hand in the adaptability of raw milk as a food, and its high degree of usefulness, because of the character and quality of the nutrients contained in it; and on the other, because of its extreme liability, in the process of milking and handling, due both to its fluid character and other physical properties, to be contaminated with germ laden dirt and dust; when foreign matters are introduced they contribute not only undesirable flavors and odors, but the milk is an excellent medium for the development of the various organisms—disease and otherwise—associated with them.

Milk has justly, therefore, received more attention as a food supply than any other. The laws which have been enacted in the past have not, however, been altogether reasonable, and because many unnecessary, foolish, and impracticable methods of control have been adopted by State and municipal authorities, much misapprehension exists in the minds of both producers and consumers concerning the usefulness of any control, as well as the possibilities and probabilities of danger from the use of milk which has not been subjected to such control.

Whether milk shall be good or poor, from the standpoint of food value, as well as that of healthfulness, and whether it shall be properly produced and distributed, has been shown to be largely a commercial matter. In other words, abundant evidence is available to show that when consumers understand that good, rich, healthful milk costs more to produce than poor, dirty, and unhealthy milk, and are willing to pay for the extra expense involved in the care required, there are scores of dairymen ready to make the high quality milk, and will do so without any State regulation whatsoever. So far as production is concerned, it is purely a matter of business. The consumers, however, both rich and poor, too often base their values upon price per quart, without special reference to either richness or purity. So long as this condition of affairs exists, therefore, it is necessary that consumers ignorant of the basis of value shall be protected from the dangers that may lurk in milk which has not been produced under good sanitary conditions, or which has not been handled and distributed in such a way as to prevent contamination. The sovereign power of the State, therefore, must be invoked. This power should, however, be exerted quite as much for the sake of the producer as for the sake of the consumer. The producer has rights which unwise and unjust regulations infringe; he has undoubtedly suffered in the past and is now suffering from exaggerated notions in reference to the dangers of using milk, and methods of prevention, which have been incorporated into law.

It is surely right that the State should exercise proper supervision of the possible sources of danger, as well as to allow perfect liberty where danger does not exist, and mainly in the matter of production and sale, along the following lines: (1) The health of the animals; (2) the food and water supply of the animals; (3) the stabling of the animals and care of milk on the farm; and (4) the sale of milk of varying composition.

In the first three directions, the control has reference directly to the conserving of the public health; in the fourth it has reference entirely to the sale of milk as a commodity, and regulations should not be prohibitive, but permissible.

The State should also make such regulations for the retailer as shall guarantee proper care in transporting and storing of the milk and its distribution and the requisite cleansing and return of the vessels in which the milk has been transported, although in all cases the regulations should be so reasonable as to make it possible to have them complied with.

1. *The Health of the Animals.*—It is undoubtedly a duty which the State owes to both the producer and the consumer that the sale of milk from manifestly diseased animals, and whose product is a menace to health, should be prohibited. The self interest of the producer will, on the whole, encourage him to cooperate in any reasonable regulation on this point, as the intelligent dairyman knows that in the case of infectious diseases, as, for example, tuberculosis, he must suffer serious and continued loss if the infected animals are permitted to remain in his herd. Laws covering the control and stamping out of disease are easy of execution, be-

cause the reason is apparent, while those which seem to be drawn primarily to increase the expenses of the producer without a possible return to him always meet with opposition, and are generally evaded. Further, as already intimated, the fact that there is a supervision exercised by the State, in respect to diseases, will have the effect of increasing the confidence of consumers in the healthfulness of the milk and a consequent greater consumption.

Whether the complete eradication of tuberculosis can be accomplished is a question which often arises, but it is not one which should have weight when the health of the people is at stake. Efforts must be made, and all practicable methods known should be employed. It is the belief of many experts that the immunization methods are now the most promising. Intelligent citizens will also heartily cooperate in any efforts of this kind, knowing that it is for their self protection, while the ignorant should be protected in the interests of humanity. It must not be forgotten, however, that many charges which have been made against milk because of the diseased condition of the animals are not due to that cause at all, but are due to other causes which are beyond the control of the producer, and for which he should not be chargeable.

2. *Food and Water Supply.*—It is also a part of the duty of the State to regulate in a proper way the feed of the animal. Feeds may be of such a character as to encourage the flow of milk, while at the same time contribute such characteristics to it as to make it unwholesome even in its fresh condition. The feed may not cause any apparent injury to the cow, although its influence may be such as to prevent her from fully exercising her normal functions. From the feeds, too, may be absorbed ferments which cause deleterious change in the milk itself, making it unfit for human consumption, whether raw or cooked. Partially fermented food, swills, slops, vegetable garbage, etc., are in this class. Many of these, if not fed exclusively, but rather as a small part of the ration, would not cause imperfect nutrition—that is, may not be injurious, but rather helpful under certain conditions; hence laws should be enacted to prohibit exclusive use, which is often practised in city dairies, but to permit the legitimate utilization of harmless products.

The water supply, both as drink and for washing vessels, should also be a subject of supervision, as this is one of the main sources of infectious diseases contributed by milk: the germs of disease multiply rapidly in so favorable a medium.

3. *The Care of the Cow.*—Another source of danger to the milk supply is the stabling and milking of the cow, especially in the winter months, and State regulations should require that animals should be kept in a clean, light, and airy stable, should be bedded with clean bedding, and should be kept clean, conditions which are favorable for the health and cleanliness of the animals. Self interest of the producer enters here also to some extent, in that the animals themselves will respond more favorably to good care in these respects than if they are crowded into dark, dirty stables. The pails and cans used, and the milkers also, should be clean and healthy.

It does not follow, however, that the standards which have been set by men of wealth, who go into the dairy business for fun rather than for a living,

should be a guide in the regulations that shall be required. Most milk, especially that produced by regular dairy farmers during the season when the animals are not stabled, is probably drawn under good sanitary conditions. It is the product sold by small farmers, who make milk a side issue, and its sale a source of ready cash, and that produced in city dairies which needs, as a rule, the strictest supervision, and even here reasonable requirements in the matter of light and air in the barns and provisions for cleanliness of utensils and milkers will be readily complied with if the reasons for the changes are understood.

4. *The Composition of Milk.*—While it has been a prominent feature of all laws regulating milk supply to have included a statement as to the percentage of total solids and fat that milk shall contain, this regulation is unjust and should be abolished; the sale of milk of any composition should be permitted, provided the regulations as to health and sanitary conditions are complied with and its composition stated. This is for two reasons: (1) because milk is variable in its composition, due to the breed of the cow, her period of lactation, and season of the year when it is drawn, and while a minimum composition in respect to solids and fat prevents to some extent adulteration, it does become a hardship under certain of the laws which have been passed; and (2) clean milk, containing a lower percentage of solids and fat, is not a greater menace to health than rich milk. The State should require that milk should be pure, in so far as the addition of water or other adulterants is concerned, but should make it the duty of the officers who execute the law to determine such impurity, and not to require that all milk shall have a certain standard. This matter, too, will also to some extent regulate itself, and the self interests of the producer will assist in improving the quality of milk in this respect, if market conditions do not make it profitable for him to raise the grades the markets demand.

These regulations cover what it seems to me should be required of the producer.

State regulations which shall apply to the retailer have reference (1) to its transportation; (2) its storage; (3) its distribution; and (4) the proper cleansing of the vessels which shall be returned to the producer.

In this discussion of the State's control of milk, it is assumed that the producer's responsibility ceases when it leaves the farm. Its transportation and delivery, however, may, if uncontrolled, result in injuring the consumer and the producer; many faults that are charged to the producer do not belong to him. The milkman should, therefore, be required to provide a proper place of storage, clean, cool, and airy, and located so as to prevent the absorption of odors, and properly ventilated and sewered. It should be distributed in such vessels as to prevent the introduction into it of any outside contamination, as often happens in distributing, when dealing out of a can. Whether it shall be pasteurized, sterilized, or otherwise treated, is a matter which it seems to me belongs to the municipal authorities. The general opinion of experts, however, is that these methods, while reducing to some extent possible dangers, cannot result in making dirty milk clean or diseased milk wholesome, while they

do reduce the nutritive value, owing to changes in its constitution and in the destruction of natural and helpful ferments.

I am satisfied, too, that many of the dangers which are attributed to milk are absorbed by it after it reaches the consumer's home, and State and municipal regulations in reference to the contamination of milk will have but little effect if the sanitary condition of streets, of homes, and of tenements is not first made good.

The State should also regulate the cleansing of all vessels which are returned to the producer, because if cans and bottles are not thoroughly cleansed immediately, or very soon after they have been emptied of their contents, it is almost impossible for the producer to make them sweet and clean by any methods which are within his reach, and hence he furnishes milk of a high bacteria content, because he cannot afford new cans for each shipment.

Finally, the whole matter of milk control is largely one of education and fair dealing. The State can assist in securing it by limited and reasonable restrictive measures, the execution of which is in the hands of intelligent officers.

A CASE OF HYDROPHOBIA.

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D. H., a boy, three years old, living in Rocky Hill, was bitten by a strange dog November 22, 1906. The boy was well at the time, in fact had never been sick enough to have a doctor since birth.

The dog was a tramp dog which suddenly appeared in the village and ran through it, disappearing up toward Wethersfield. He had stopped at several houses for food. He snapped at a dog on the street, rushed into a house adjoining where D. H. lived, and snapped at an old lady. He then rushed into D. H.'s house and started to eat food on the floor. The boy ran up to him, when the dog turned and bit him in several places on the scalp, also in the right upper eyelid. The boy screamed and the dog dashed away, and what became of him eventually is not known.

The fact that the dog wanted to eat and did eat food at several places was taken as proof that he was not rabid. But in canine rabies the symptom hydrophobia is usually absent in the early stages. The dog swallows anything that comes in his way, glass, iron, wood, indigestible substances which are often found in the stomach on autopsy, and bites at everything, even himself.

The wounds on the head of D. H. were cauterized by Dr. Pratt and by Dr. Moser, the family physician. The wound in the eyelid, however, was not probed very deeply for fear of injury to the eye. There was rapid healing of the wounds, and the boy was in perfect health until the evening of January 3, 1907, or exactly six weeks from the time of being bitten.

His mother then put him to bed, and brought him his customary drink of water, but at the sight of it the child began to scream, and became wildly excited. He struck his mother and bit her and seemed to be beside himself. The mother thought of rabies at once, was frightened and sent for Dr. Moser, who found the child so irritable that he was unable to get near enough to examine him. The boy was thrashing about and throwing himself about on the bed. He seemed to be in a semidelirious condition, and all mention of drink increased his excitement. In these spells his back would stiffen, and his head would be drawn back as in opis-

thotonos. The next morning the doctor was able to get his temperature, which was 101° F., and his pulse, which was 150 and very feeble. He had not slept any, and was even more irritable. He screamed louder on suggestion of food or drink, and there was during his spells of excitement general spasticity.

Dr. E. B. Hooker saw him in the afternoon and I saw him in the night at 4:30 a. m.

Up to this time he had not slept at all and he had been mute, but now he talked some. His mother took him on her lap and we talked about other things which might interest him. His mind was clear, but he was in an irritable mood. Tests showed no Kernig's sign and no rigidity of neck muscles. There had been no vomiting. The lungs were clear, the heart was rapid, there was a gurgling or rattling sound in the throat. When, however, water was brought and a spoonful offered him, he became frantic; he struck out with his hands and feet and knocked the spoon away, yet in a minute he tried to take the spoonful of water, for he was plainly thirsty, but he could not seem to keep it in his mouth and pushed it away, and said he did not want it. All kinds of food or drink were suggested, but he would not be persuaded, though he took from me three little pills of calomel and swallowed them. He was put to bed again. He had spells of making queer noises with his lips and the rattling in the larynx was persistent. Tonic spasms of the back muscles were noted. He had periods also of a hallucinatory delirium. He seemed to think his brother and other people were in the room. He talked about a big flower as big as his head on the ceiling, saw a big jug with a handle just before him, said his feet and hands were tied, and various other things not so.

Dr. Hooker, Dr. Moser and myself saw him again in the afternoon of that day. At this time there were râles all over his chest, a very rapid and feeble pulse, and great prostration. The boy's mind, however, was perfectly clear. His mother had him on her lap, and he permitted us to move his head about and test for Kernig's sign. He still refused to drink, but was too weak to behave as violently as before. He died in the evening just fifty hours from the manifestation of the first symptoms. During the last few hours he had frequent convulsions. Froth collected on his lips, and finally his limbs became motionless, both legs and arms, presumably from an ascending paralysis.

The diagnosis of this case is not a matter of doubt. The manner of inoculation, the period of incubation, the rapid course of the disease, and the fatal termination at once make probable its nature. Then we have the classic signs of motor excitement, fear of water or of all ingesta, hallucinations, tetanoid spasms, laryngeal râles, druling saliva, weak heart action, and terminal paralysis, a group of symptoms which mark no other disease than rabies.

One lesson from this case is that at a time of known rabies among dogs, a bite from a dog running wild and snapping at whatever comes in his path must be regarded as an inoculation if the fate of the dog be not known, or it be not certain what malady he may have suffered from.

When it has once reached the stage of invasion, there is no treatment of hydrophobia except symptomatic. It merely adds to the anguish of the patient to attempt to feed him or to suggest even tempting drinks. All irritations must be kept away, and the patient must be soothed and diverted and kept quiet. Each case will require different treatment. Very big doses of morphine hypodermically were used in this case, and I even saw bromide and chloral by the rectum to be helpful.

The chief interest lies in prevention.

Rabies among dogs seems to resemble sporadic fever among men in certain features of its natural history. While there are always a few sporadic cases, at intervals of fifteen or twenty years epidemics occur when hundreds of dogs in a given region are infected in the course of a year or two and then the disease dies out. Such epidemics were recorded in Austria along about 1815, 1830, 1842, 1862, etc.

The only preventive is universal and prolonged muzzling. Here is some evidence. In 1885 in London, England, there were twenty-seven human deaths from rabies. In 1886 muzzling was enforced and there were no deaths. In 1887 the muzzling order was relaxed and the disease reappeared, causing ten deaths in London during the next two years, after which time the muzzling was again enforced with the banishment of the disease. In Berlin, Germany, in eight years previous to 1854, 330 rabid dogs had been killed, an average of forty per year. Muzzling was adopted that year with the result of a drop in the following eight years to only two cases per year among dogs. By extending the muzzling order to surrounding counties and finally by prohibiting the entry of dogs from Russia the disease was stamped out, and since 1885 no case has occurred. In Sweden in 1870 a muzzling order for the whole country was passed, and no dogs were allowed to be brought into the country unless quarantined for a certain period. No cases occurred for twenty years.

In the course of the past year or two in New England and New York State alone, hundreds of cases among dogs have occurred and probably a score or more of people have lost their lives, while many have had to undergo treatment at various Pasteur institutes.

It is evident that the States should combine both for purposes of careful investigation as to the extent of the epidemic, and for effective legislation of uniform character throughout a large area of the country in order to stamp out the disease among dogs and to safeguard human life from this preventible and frightful disease. The dog infected with rabies rushes off and sometimes goes twenty miles before he dies, thus carrying the disease into distant regions. Only concerted action through a long period of time can guarantee immunity from this most dreadful malady.

122 HIGH STREET.

ACUTE SUPERIOR AND INTERIOR POLIOENCEPHALITIS.

By J. B. TURNER, M. D.,
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CASE.—Mrs. M., aged fifty-one years, was referred to me by Dr. George Holland, of this city, on January 16th of this year, with the following history: Her mother died of phthisis pulmonalis at forty years of age. Her father died of "inflammation of the brain" at sixty-five years of age. The patient herself had had typhoid fever thirty years ago, and was subject to attacks of lumbago for years. Urine contained neither albumin nor sugar. Her appetite was good. Her daughter told me she had been a very hard worker and worried a good deal. She had had an attack of ptosis of right upper lid in December, 1905, that lasted

four weeks, with diplopia for the rest of the year. She was treated at the Philadelphia Polyclinic in the service of Dr. Schneideman at the time, and fully recovered.

When seen by me she had a marked ptosis of the right upper lid and partial ptosis of the left upper lid, with partial involvement of all the external muscles of both eyes, in fact, crossed ophthalmoplegia but not internal, as she had an amount of accommodation commensurate with her age. Distant vision was good, and her pupils reacted to light and accommodation. The present attack started sixteen days before I first saw her. Ptosis started in the right eye and was followed by ptosis in the left eye, one week later. Patella tendon reflex was normal. There was no involvement of pharynx or larynx. Potassium iodide in ascending doses and sodium salicylate were prescribed.

I saw her again two days later, on January 18th, and there was some improvement in the ptosis of the right eye. Four days later, on January 22nd, eye symptoms were about the same, but her voice was very weak, and she had difficulty in making herself understood; efforts made in trying to talk tired her, so that she would have to rest and then begin again.

On January 23rd Dr. C. A. Veasey saw the patient with me, and the following notes were taken:

No pain in throat, partial ptosis in right eye, while the left eye appeared normal. Slight divergence of eyes, first eye moving about five degrees to temple and very slightly upwards. Left eye moved five degrees to the right and upward 12 degrees, but no other movement. Facing window pupils measured 3 m.m. in width, and both react to light and accommodation. There were crossed diplopia, left image being higher, images erect, left eye turned upward 12 degrees. Patient could pucker lips in attempt to whistle. Tongue was in natural position and could be protruded. Vocal cords and cartilages were normal. Uvula seemed to be drawn slightly to the left. She had probably complete sensation of mucous membrane of mouth, and there was no anæsthesia of face. Corneal sensation was perfect, and form fields were normal.

January 26th. On the morning of this day dysphagia developed, and patient could not swallow solids and only small quantities of liquids. In the evening of the same day the voice was nearly inaudible. Patient had to be fed with œsophageal tube. On January 27th, accommodation was tested and found to be normal for her age. Eye symptoms were about same. Patient becoming weaker, Dr. Wharton Sinkler saw her and concurred in diagnosis and prognosis. January 28th, patient died, just four weeks after onset of disease and three days after beginning of bulbar symptoms.

Gowers states that eye symptoms usually exist alone, the combination with bulbar palsy being seldom met with except in the chronic form. Wernicke, who first accurately distinguished this form, reported three cases, two due to alcoholism and one to sulphuric acid poison. This case gives no clue to cause nor to history of alcoholism or syphilis, nor to arteriosclerosis or anæmia. She was in good health when the attack came on, her appetite kept good as long as she could swallow. She had safely passed the menopause. Although there was no rise of temperature at any time, it seems that this was a case of inflammation beginning in the nucleus of the third nerve and traveling downward. The dysphagia, aphonia, and serious symptoms occurring within three days of her death would indicate hæmorrhage. Gowers remarks that this form of the malady is rare, pathological observations are few, and our knowledge of the cause is therefore meagre.

PROGRESS OF THE CASE.

BACKWARD AND DEFECTIVE CHILDREN.*

BY HARLAN SHOEMAKER, A. B., M. D.,
Philadelphia.

As many grades of defects exist in backward and defective children as there are children afflicted. No two have the same degree of either mental or physical deficiency, nor do any two suffer like consequences from them, either in severity or permanency of their derangement. The field is very broad and ramifies into every phase of the child's life. No concrete rule for its correction will apply, nor can any statistics cover the individual case. Each case must be made as careful a study, as each physical defect needs its specific remedy. Children may be defective mentally, morally, and physically.

When any one makes the assertion that 60 per cent. of the children are defective it must be specifically stated to what degree and in exactly what manner, because the ability to assimilate knowledge or overcome physical defects varies with the nature of the affliction.

If we set certain standards of physical excellence, not quite the absolute normal, then every observer is a law unto himself and all statistics are vitiated. If I must quote something larger than my predecessors, and the last one gives 60 per cent. as the limit of defectives, I should like to have him, or any one, find a normal child for me. They do exist, but they are so few that their numbers can scarcely be based on percentage. It is not the intention to make this paper statistical, and those desirous of statistics in this phase of Philadelphia life are referred to the mayor's yearly message to councils in which the statistics of children include the entire city. They are of more interest than those of only one school section.

But not to be radical, there do exist backward and defective children in our public and parochial schools in sufficient numbers to make their problem worth solving to the community at large and to the everlasting benefit of the individual. In the foreign and poorer districts of this city any school of fifteen classes could supply material to make a class of twenty-five defective pupils without special stress laid upon a medical examination to determine their existence.

All defective children are not necessarily backward, although their defect may handicap them considerably. I recall now a young Russian Jewess with a most astonishing visual deficiency who had successfully kept up with her class until she reached the eighth grade. After this defect was corrected by glasses furnished from the voluntary contributions of her teachers, the child stood first in her class.

This leads us to discriminate between those children who can be relieved at once of their defects, and those who will need a long supplemental training to overcome them. The greatest number fall into the first class, and exist in every child devoid of proper home attention.

It will not do to be too lenient even with the best of intelligent people. Through a physical examination insisted upon by one of our large private schools, when his eleven year old son wanted to go into athletics, a certain friend of mine, a physician, told me

he had brought to his notice for the first time that the boy had a heart lesion. In another instance, a well to do woman finds that her thirteen year old daughter has lost two permanent teeth through decay.

How many in this audience are free from physical defects? So when statistics are quoted I invariably ask: What is the deficiency? Eyes, tonsils, adenoids, teeth, some other more refractory error of development, or a clouded brain?

The minority of defective children belong to a class in which the physician can do little. They are psychical prodigies and deserve a long course of pedagogical training. This training may be guided by the physician with great profit to the child.

I know an instance of a deaf mute being taught to speak in the class room of a Philadelphia public school. If one case can be treated successfully outside of a special institution, think of the inestimable value to the individual and the great saving to the State if each school could boast of a special class with a trained teacher to take charge of it. Where would we get the teachers? Where do the public institutions get their teachers? They train them, and so could we. It is possible, with the courtesy of our hospital clinics, to instruct any young enthusiastic teacher to observe and train any defective child, whether its defect be of speech or mind.

One of the greatest errors lies with the medical profession itself. We are all liable to fall into the error of believing our patient to be no more than an animated object of our specialty. The ophthalmologists never examine the throat, at least I have evidence that some do not. The nose and throat specialists invariably overlook the teeth, while the neurologists are quite liable to let their efforts be confined to remedying the disease without reference to the life and education of the child. In fact, the nervous child is invariably withdrawn from school, and no effort made to suit the education to the individual's particular condition. The Bureau of Compulsory Education could show some very amusing certificates to substantiate this fact.

It is evident at once that no community has ever produced better conditions for its defectives than it has already produced for its normal healthy children. They have been quite neglected in the rush to push the bright boy forward, so the needs of special institutions, both educational and penal, have grown apace.

It is time that the public gave special attention to the prevention of this demand, rather than taking care of the steady increase of paupers and felons. The school nurse who prevents one pair of blind eyes relieves the State of a whole family of paupers or worse.

Preventive medicine is the greatest of all, if it does not come a generation too late. The United States census statistics of 1890 shows conclusively, where large averages are struck, that inherited defects are transmitted to succeeding generations more frequently by those afflicted in childhood than by those afflicted in adult life.

The curtailment of procreation has been advanced as a means to stop the tide of racial degeneration. However, as no civilized community has successfully prevented prostitution, or even controlled venereal disease—the greatest cause of all physical

and mental deficiency—this larger factor can hardly be argued as a means toward an end.

The number of defectives steadily increases. They are now far above the estimate of the most courageous of us. Some are hopeless and need institutional treatment; others are more in need of the stimulus of healthy surroundings under favored conditions, an institution or even a special school is the last place in which they should be. Even if the parents were willing to part with them, all the defective children could not be gathered into existing institutions. Already the few we have turn their inmates back to the homes as soon as possible. Special schools are certain to be inaccessible for most, and are too great a tax on the public when we realize the enormous number of healthy children either on half time or not in school at all. A special graded class in the nearest public school is the most rational means of dealing with defective children. The room is not lost to the school, but utilized for more judicious work. It is practicable and accessible.

There should be no stigma attached to an ungraded class doing special work. Certain mental defectives could sit in this room throughout the entire session, while others should be sent there for training along specified lines of development. They would receive an added impulse by a change of teachers. However, great care should be observed that no child be sent as a means of humiliation or punishment.

With only five hours of the child's life reinforced at home by the mother's instinct, much may be done. An institution has an advantage in those instances where poverty and mismanagement at home are attributable for the deficiency. The continuous observation, improved food, regular hours for sleep, play, and work, coupled with improved hygienic surroundings and special medical attention, are quite ideal. Every child should enjoy them. But even in institutions the conditions are not always as asserted; cruelties, bad food, and neglect are frequently charged. Epidemics occur where large numbers are herded together in the most up to date asylums. Bad habits are formed from bad associates. The child's heart longing is never satisfied. Their natural philosophical turn allows them to suffer without tears and die with a cheerful answer on their lips. The influence of the most ordinary mother and home is good. So long as the great mass of people prefer to struggle they should be stimulated to it and only aided when it is needed.

Those who fall below the average must be helped up. In the special class their hours should be short. The children should be thrown in contact with normal children at recess; no unnatural barrier or false environment should be brought around a child, so that when it is turned out cured or only partially cured, it would expect all the special attention of the special teacher, and finding the world cold and uninterested in its cause, would throw itself entirely upon charities for support. Here lies the greatest fault of the institutional system of correcting defectives. Once its life begun, the institution's greatest stress comes at the parting of the ways, and if those ways never part, the individual becomes a public charge for life. To the public it makes little difference in just what institution the subject is confined,

penal or protective. How much better it would be to keep these children in touch with the world if a special class will develop their latent faculties!

The interested teacher is a very good judge of mental deficiency. She sees the child during its hours of work and play. However, in order to protect the size of the classes and alleviate physical defects as far as possible, no child should be allowed in a special class of defectives without an order from the medical authority, or some specialist connected with an institution of repute.

Where several classes of the same grade exist, the segregation of defective children, through ranking of student ability, unconsciously occurs. Thus some teachers have a very high percentage of the defectives. This makes their work harder and less creditable.

In our large cities there has long been in vogue a system of reward of merit by which classes are frequently resealed. Those who have attained the best grade are invited to take the front seat. In a number of classes which I have examined I have not infrequently found all the defectives at the back of the room—children standing by their seats and peering as though into eternity in their endeavors to see the board. True it is, they all have the privilege of taking a front seat, if there is one to take, but a child will strain a long time before it will move, and, furthermore, in some class rooms in the foreign sections of this city the aisles between are blocked by boards laid from seat to seat to accommodate those extra twenty-five children the seating capacity of the room does not permit and the law of this glorious commonwealth does not allow.

You are forced to wonder if the theatres are not imposed upon after all. Or didn't our forefathers have an easy time of it on the hard benches of the little red school house? A child may become as much attached to a seat as a grown person. At all events, let us reverse our present system and order our near sighted and backward children out into the light and observation of the teacher.

There are causes other than the home life and hereditary taints that produce backward children, or aid in retarding the development of normal ones. I recall a room, possessing two large south windows, which is so dark as to necessitate artificial light. Only one out of fifty children who had spent six months in this room was able to read the normal line of Snellen's test letters. The home may, but the school never should, add to a child's infirmities.

Where immigration has flooded certain sections, bringing with it all the unsanitary conditions attendant upon overcrowding, where ignorance, superstition, and poverty exist, there is very little left to appeal to.

Among the Russian Jews a number of gross defects have been remedied, through an appeal to the family pride by a letter, stating that their child was suffering from a physical deficiency which hindered its progress in the class. This simple, though effective, means brought a number of good results.

The school nurse has been instrumental for the most good towards eradicating physical defects. She has even gone so far as to place flagrant cases in the hands of the Society for the Prevention of Cruelty to Children in order to force the attention of the family to the physical defects of their children. The

State compels attendance at school. It also regulates the public health, and there is no reason why it should not interfere in those cases of physical ailments in children which, unattended, may produce a public charge. These two cards, one, the record of a child with defective speech and hearing, with adenoids and enlarged tonsils, in which a fair recovery was had by an immediate operation; the other, that of a child in the same condition, but in which the numerous efforts made have been unavailing to arouse the family to the needs of their child or even to allow others to meet them, are quite illustrative of the conditions presumed.

Several special classes are taught in the schools to-day, probably music and drawing are the oldest. All the scholars are taught to sing, but only the girls are taught to sew. In the foreign section the boys are neatly segregated to one side of the room, where they study or hunt trouble; 60 per cent. of their fathers are tailors. Standards of judgment for Italian and Russian children, even though they have been born in this country, must be had, as they have all their ancestors' characteristics back of them.

Clement Dukes found in the Manchester district of England that all boys fell well under the average of weight and height. We have not gotten quite up to the weighing and measuring of our children in the public schools. The English statistics show several tables of seven or eight thousand children measured over a series of twelve years, which gives an excellent estimate of the rate of physical development.

There is no more accurate manner of rapidly determining the advisability of allowing a suspected tuberculous subject to remain in school. These children are so anxious to come out of the tenement into the school room that they often risk their lives; several just recently have died the same day they were last in school. However, an acute illness, even of several weeks' duration, does not retard the child if recovery has been without complications, and all statistics of backward and defective children are robbed of their accuracy if the acute diseases are included.

Conclusions.—From observations based on ten thousand school children in the public and parochial schools under personal and constant examination for the past three years, I conclude that the backward and defective children would derive the greatest benefit by:

First.—The relief of all physical defects so far as possible.

Second.—Placing a teacher in charge of a limited number of children.

Third.—In compelling a home report, from personal observation of the teacher in charge of the actual work, in order that cruelties and neglect may receive proper investigation, or that a teacher may not unwittingly be trying to force an infant mind.

Fourth.—In making the session shorter.

Fifth.—In demanding a concession from the parents, which may be implied by admission to the special class, for the correction of all physical defects in their children.

Sixth.—The employment of manual training, which may create dexterity, even though the power to originate is lacking.

Seventh.—Physical culture and outdoor gymnastics, when possible.

It is true that in certain parts of this country the immigration exceeds the birth rate. The public schools must make more Americans than are born here. It is in our schools that sympathy for free institutions is engendered, that freedom is taught, and a fair show must be given to all those advancing in their struggle for existence.

1618 SPRUCE STREET.

Therapeutical Notes.

For Strophulus in Young Infants.—M. Comby recommends the following dusting powder for babies with gum rash:

R	Menthol,	1.0 gramme;
	Starch,	15.0 grammes;
	Bismuth subnitrate,	15.0 grammes;
	Talc,	15.0 grammes;
	Lycopodium,	15.0 grammes.

V

Bulletin général de thérapeutique, April 8, 1907.

Iodine in Granular Pharyngitis.—In cases of middle ear catarrh associated with granular pharyngitis, W. L. Ballenger of Chicago, *Journal of the American Medical Association*, employs the following formulas:

R	Tincturæ iodi,	m. xlviii;
	Glycerini,	q. s. ad f5i.

M. Sig.: Apply to pharynx with swab once daily.

R	Iodoformi,	gr. i;
	Potassii iodidi,	gr. x-xx;
	Morphinæ sulphatis,	gr. i;
	Glycerini,	f5i.

M. Sig.: Apply to pharynx with swab once daily.

R	Tincturæ iodi,	gr. v-xx;
	Potassii iodidi,	gr. x-xxx;
	Olei甘theriae,	m. v;
	Glycerini,	f5i.

M. Sig.: Apply to pharynx with swab once daily.

Hydrogen Dioxide for Eye Inflammations.—Lavage, with weak solutions of hydrogen dioxide (3 to 4 volumes), used three or four times a day, have long been employed in the treatment of purulent ophthalmia. A. Jacqueau, of Lyon, also treats all corneal affections systematically with instillations of the half strength (6 volumes) solution, and has obtained good results. He found that hydrogen dioxide is remarkably efficacious in conditions of grave keratitis. For instance, in two cases of traumatic ulcer of the cornea complicated with hypopyon, a cure was obtained in less than a month. It is to be noted, in this case, however, that the pus in the anterior chamber was evacuated by the Sämisch incision, and that the actual cautery had been several times reached the cornea. On the other hand, in another case similarly affected with ulcer of the cornea and hypopyon filling half of the anterior chamber, after the exclusive use for three days of the dilute solution of hydrogen dioxide, the pains ceased, the pus had almost completely disappeared; and twenty-five days after the commencement of treatment the patient was discharged and returned to his work. This method is still useful after the ulcer has perforated the cornea. In a patient suffering with an extensive and deep, traumatic ulcer, with hypopyon, perforation occurred at the time of

marking the instillation, and bubbles of oxygen appeared in the anterior chamber, thus demonstrating the entrance of the solution into the chambers, but in spite of this incident cicatrization rapidly took place. *La Semaine médicale and Bulletin de la thérapeutique*, April 8, 1907.

Cotarnine Hydrochloride for Uterine Hæmorrhages. Migeon (*Journal général de thérapeutique*, April 8, 1907) states that cotarnine hydrochloride being an opium derivative, has the advantage of being at once a vasoconstrictor and an analgesic agent. It acts simultaneously upon the uterine vessels and upon the pains. He has obtained better results from its employment in the excessive menstruation of young girls, with or without dysmenorrhœa, than from any other remedy. He does not recommend, in such cases, going above the daily dose of 0.30 gramme (or gr. v.) for fear of stopping the menstrual flow. He advises preliminary treatment for one week before the date of menstruation, giving half the dose, or 0.15 to 0.20 gramme, during the day, in three or four tablets. In symptomatic hæmorrhages, attending uterine lesions, metritis, deviations, etc., this agent seemed to be the best of the vasoconstrictors. Upon leucorrhœa, it has no action. Its use does not prevent or take the place of curettage, if this is indicated. In interstitial and submucous fibromata, the profuse bleedings are treated with the agent, with the most satisfactory results. In five cases the bloody discharges between the menstrual periods completely disappeared. In two other cases in which the hæmorrhages recurred, he was obliged to increase the dose to six or seven tablets (each 0.30 gramme, or gr. v.). The remedy seems to have no influence in causing atrophy or the disappearance of the fibroma; but the latter is arrested in its evolution, and if an operation should be decided upon, the uterus is placed in the best condition for operating. In cancer of the uterus, it diminishes the hæmorrhages, but its action upon the pain is problematical.

The Physiological Action of Euphorbium Resin.—The *Euphorbium resinifera*, of Morocco, contains 18 per cent. of gum and 38 per cent. of resin. The milk juice exudes and coagulates upon the spines, or modified stipules, of this leafless plant, and this exudation, when collected, is commercially known as euphorbium. Two resins are recognized, one amorphous, bitter, and acrid, with a formula apparently of $C_{10}H_{16}O_2$; the other, less acrid, with a formula of $C_{13}H_{22}O$. The juice is extremely irritating to the skin and mucous membranes, and may cause vesication. L. Penière, in a note to the Académie des Sciences (*Les Nouveaux remèdes*, March 24, 1907), has used this agent hypodermically, and declares that it exercises a remarkable action upon the nutrition of the tissues. He administers it in a fine emulsion, in almost infinitesimal doses. He finds that it reduces congestion and determines an ischæmia of the red globules, while, on the contrary, it increases the circulation of the white cells, precipitates them, and brings about high tension of the lymphatic vessels all the way to the ganglia. Applying this observation to practice, Penière has found that, for example, in the treatment of uterine fibroids the injection of euphorbium into the uterine neck causes a prompt cessation in the loss of blood

at the same time that a change takes place in the interior of the fibroid tumor. He was struck with the arrest of development from this treatment; not only did the tumor cease to grow, but it also entered into regression and tended to disappear. The use of euphorbium tends to make operative interference superfluous in uterine fibroma, according to the reporter's observation.

The Serum Treatment of Bacillary Dysentery.—Vaillard and Dopter, in a recent communication to the Académie de médecine (*La Tribune médicale*, April 13, 1907), presented a report of a second series of cases treated by them with the serum obtained from a horse which had been immunized by the dysenteric bacillus. This experience extended over the preceding year, and the report was based upon a total of 243 cases, 220 of which were treated exclusively with the serum. In the former number were forty-three patients, who were treated in institutions for the insane, the remainder being adults and children, in different epidemic centres. Of these 200 cases, ninety-nine were of the very grave form; twenty-five patients appeared likely to certainly die, yet in fact only ten deaths occurred, even including those who were almost dying when the injection was given (of whom there were six). The mortality rate, therefore, appears to have been greatly reduced by the treatment. With regard to the therapeutical effects, the reporters insisted upon the alleviation of the symptoms, which almost immediately following the injections, and upon the rapidity of the cure. In a few hours the abdominal pains, the tenesmus, and cramping pains are relieved, while the sometimes enormous number of stools are rapidly reduced to one or two in twenty-four hours. The general condition also progressively improves. These effects are the more striking in cases where patients have been unsuccessfully treated by the usual remedies. Similar results have been recorded by other physicians, who have had supplies of the serum sent to them. Of the group treated in institutions for the insane, it is to be said that the epidemics of dysentery are generally of grave character, because of the patients many are infirm, crippled, or cachectic. The results in these cases really were less satisfactory than in the others, but here also the deathrate was lowered. The effects of the serum are more prompt and decisive when given nearest to the onset of the symptoms. The sooner the injection is given the quicker and surer is the recovery. It is recommended to make the dosage proportionate to the intensity of the disease, and if the quantity given seems insufficient, the injections may be repeated on several days consecutively. Under these conditions they hold that serotherapy, when rationally utilized, is capable of controlling the most obstinate and grave cases; it is the only truly specific remedy which we have against bacillary dysentery. In the discussion following this paper, Vidal mentioned an extremely grave case in which the usual treatment had failed when serum treatment was tried. From the first injection the symptoms were sensibly improved. After fifteen days of treatment and the use of 200 c.c. of serum, the cure was complete. The unusual length of time required was attributed to the fact that the serum treatment was not employed at the beginning of the illness.

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THE EMOLUMENTS OF MEDICAL PRACTICE.

There are individuals who denounce physicians as harpies, alleging that members of the medical profession in general exact fees that are extortionate. These persons are not numerous, but they have tongues "of forty parson power." They are for the most part rich men, and most of them have inherited wealth instead of having acquired it. They make a great point of insisting that physicians ought not to charge them higher fees for professional services than they would charge a poor man. Of course the contention is absurd, but a medical man's statement to that effect would have little weight with the public. It is a matter for congratulation, therefore, that so forcible a writer as Mr. Edgar Allen Forbes has demonstrated, in the May number of the *World's Work*, the inadequacy of physicians' remuneration in general, at the same time testifying to their disinterested devotion to their patients' welfare.

Mr. Forbes shows that physicians as a class are much underpaid. He admits that those of great eminence enjoy handsome incomes, but he rightly contends that their gains are by no means on a par with those of men of the same eminence in some other callings, particularly that of the law. We think that Mr. Forbes admits too much when he says that there are a few New York practitioners who receive remuneration to the amount of \$100,000 a year, though this is a point on which one may easily be mistaken. During the latter years of the civil war and for several years after it the general government collected an income tax. It was understood

that a New York physician then reported to the commissioner of internal revenue an annual income of \$70,000 from the practice of medicine, but it was hinted also, perhaps out of jealousy, that he was overstating his income for the purpose of exciting talk and thus advertising himself. We mention the incident for what it may be worth.

It is seldom that a successful physician is able to bring up a family of moderate size in a style commensurate with that which many commercial men find it easy to furnish for their children, and who ever heard of a medical man who grew rich on his practice alone? It cannot be denied that there are a few conscienceless men in our profession, but they almost always overreach themselves and they invariably sink in the estimation of their fellow practitioners. In the long run, nothing is to be gained by extortion. Every physician who is capable—to say nothing of his benevolence—knows this, and every one who is not sharp enough to recognize it soon has it pounded into him. "Is the doctor a Shylock?" asks Mr. Forbes. Emphatically he is not, is his conclusion.

THE ASSOCIATION OF AMERICAN PHYSICIANS.

The twenty-second annual meeting of the Association of American Physicians, a report of which is to be completed in this journal, was one of the best attended meetings which the association has held in recent years. The papers read were all of a high order of merit, and they were actively discussed for the most part. The remarks by Dr. David L. Edsall, of Philadelphia, on ward infections in hospitals, and the papers on opsonins were the most noteworthy features of the programme. Dr. Edsall's sound sense of observation has led him to a most important association of phenomena, and he points out the fact that small epidemics of infectious disease may pass through a hospital ward from the neglect of some essential feature of sanitation. Not only are patients sick of one disease subjected to secondary infections of greater or less severity, but the nurses, who always are extremely indignant if any one suggests that they are careless, may be seized with such an infection as typhoid fever.

The discussion on opsonins in medicine indicates that the majority of observers are not adhering to Wright's technique; in no other way can the divergent results of reported observations be interpreted. In studies for the confirmation of a new observation it is absolutely essential that the original technique be followed accurately in every detail; otherwise erroneous results will be obtained and illogical conclusions will be drawn, as was seen following the introduction of the diazo reaction of Ehrlich. Per-

haps we are mixing up the two different subjects of opsonic index and the bacterial "vaccine" treatment of infections. The latter is an established fact. There can be no doubt of the efficacy of the treatment of subacute and chronic infections with bacterial "vaccines." Observers must remember, however, and many American workers seem not to have remembered it, that Wright alleges the greatest efficiency for the method in subacute and chronic cases, not in acute cases. And the method has not been put forth as one of treating pulmonary tuberculous disease in general, but rather of treating such disease of bones, joints, and lymphoid tissue.

Time may prove that the opsonic index as a guide to the proper administration of bacterial "vaccines" is not so trustworthy as Wright believes. At present, however, it is the only known method of control. It is time consuming and requires the nicest accuracy and the utmost patience for its performance. The only criticism that can possibly be made of the meeting is one relating to the length of the programme. Forty-seven papers to be read in three sessions of three hours and a half each, allowing time for discussion, make too congested a programme. If, as happened on this occasion, only four of the men fail to appear, there is considerable difficulty in finishing the programme on time.

SEXUAL DIFFERENTIATION.

Professor Albert Sippel, of Frankfort on the Main, comes to a very interesting conclusion: "There are male and female ovula in the ovary. In other words, the sex is already predestined in the ovulum of the ovary; the germ cell of the mother alone is the source of the child's sex, and upon it the male germ cell has no influence." The German writer propounds this inference in the *Zentralblatt für Gynäkologie* for April 20th. About a year ago this author reported the case of a man who in his first marriage begot healthy boys and girls, but in his second wedlock healthy girls, the four boys showing deformities, which were not of the same character. In the beginning of this year Dr. Ernst Schirmer, of Marburg, described in the same journal a similar case of one man and woman having healthy boys, while the girls showed the same deformity, hemicephalia. Schirmer therefore concluded that the male and female embryos had come from certain sexually pretypified ovula, located at different places, either in the same ovary or the males in one and the females in the other. Schirmer, furthermore, thought it possible that ovarian tissue, changed by disease, or the mechanical influence of a rupture of a Graafian follicle might detrimentally influence the ovula in course of formation. Sippel now shows that Schirmer's conclusions are not absolutely con-

vincing, as the paternal as well as the maternal germ cell could have been the cause of the deformity, while in his own case the maternal germ cell must have been malformed, the father having produced healthy children in his first marriage. Besides, the germ cells cannot be produced sexually separated in different ovaries, as women with only one ovary have given birth to male and female infants.

The theory of the predisposition of the ovarian ovum had been proposed anew by Bernhard Schultze, in opposition to Hofacker-Sadler's idea, which attributes the sex of the embryo to the reciprocity between male and female parent. Schultze modified his views in conceding that, although the sex was predestined in the ovule, the semen was sometimes more attracted by a male, sometimes by a female ovule.

Besides the conclusion as to the predestination as to sex, Dr. Sippel implies that the malformation of the embryo is to be attributed solely to causes originating from the mother, and that the basis of such deformities of the ovule is to be found in the ovary and is common to all ovules of the same deformed state. This last conclusion is certainly very apt to be challenged, while the statements of the predisposition of the sex will renew the interest of embryologists in this question.

Leopold Schenk's theory, as is well known, consisted in the selection of the sex of the embryo by the mother in partaking of or avoiding certain kinds of food. Although severely criticised by such men as Virchow, Gusserow, Pflüger, Munk, and Roux, Schenk asserted that the foundation for special capacities and features of character could be laid in the embryo by special nutrition to the mother. His cardinal conclusions were that it was possible by certain aliments to determine the sex of the child and to secure only normal offspring.

Perhaps it would be interesting to note the description of the constitution of the cell substance of the fertilized ovum, as given by J. George Adami, in Osler's *Modern Medicine*, reflecting the generally accepted view of to-day: "The cell substance of the fertilized ovum is contributed by the female cell and the centrosome by the male, while the chromatin substance is contributed by both."

INSANITY AND SUICIDE.

Many studies have shown that at least seventy-five per cent., if not more, of all suicides are due to mental disease of one kind or another, and in the great majority of all these cases the disease has been in progress for some time. Hence its early recognition implies a limitation of the number of suicides, which in the United States is steadily increasing. Statistics show that for 1890 the ratio of suicides

was twelve to 100,000 of the population, in 1900 sixteen, and in 1904 twenty, with a total of 16,000 deaths by suicide. The thousands upon thousands of attempts at suicide which did not end fatally are not included in these figures. San Francisco seems to hold our suicide record, over 72.6 suicides per 100,000 inhabitants being the figures for 1904, while Hoboken comes next with thirty-eight per 100,000. St. Louis, Milwaukee, and Chicago are close behind. Dr. Charles W. Pilgrim has made an excellent study (*American Journal of Insanity*, January) of the subject.

It is only within comparatively recent times that the attempt has been made to ascertain the more exact relation of suicide to the definite mental diseases. In addition to the study of Dr. Pilgrim's, already cited, another, by Dr. Helene Friedericke Stelzner (*Arbeiten aus der psychiatrischen Klinik zu Berlin*, 1907), while serving as voluntary assistant in Ziehen's psychopathic department of Berlin's great Charité Hospital, is of more than usual interest. In this contribution the method of ordinary statistical presentation is departed from, and a careful personal analysis is made of the individual histories. She has thus studied 200 cases of suicide among insane women. Of these, sixty-five were suffering from some form of melancholia, the diagnosis being made in the light of Ziehen's teachings, climacteric, hallucinatory, simple, and periodic forms contributing. Dr. Pilgrim states that, according to his observation, involuntional melancholia is the most important type of melancholia, when viewed in relation to suicide, for fully eighty per cent. of these patients are definitely suicidal.

Next in frequency, the psychopathic constitution shows the suicidal tendency. Hysteria makes the largest showing in this class in Dr. Stelzner's list, contributing thirty-two cases in the 200. In these the motive is more or less readily ascertainable. It is usually attendant on a severe emotional shock, and is largely related to women's love affairs. The hysterical attempts at suicide are usually accompanied by very theatrical and exaggerated actions. Paranoia, acute and chronic, accounts for thirty-five cases. In Ziehen's classification acute paranoia includes many of the acute confusional states of toxic or exhaustive origin of Kraepelin, and the motives are not readily found by reason of the attendant confusion. In the chronic cases, however, many of which may undoubtedly be classified as those of paranoid dementers in Kraepelin's sense, the desire to escape from the persistence of the persecutory delusions was the characteristic motive. In the hebephrenic dementia præcox cases, six in number, pathological impulsiveness was characteristic. As a rule the patients had no reasons to offer in expla-

nation of their attempts. The imbeciles, three in number, showed great triviality of motive, even simple quarrels with their neighbors or their relatives being given in explanation of their acts. Seven cases of general paresis are included. As the studies were of women only, this number is but a small percentage of paretic suicides. A study of suicide in male paretics is highly desirable. Alcoholism in women showed few cases; in men it is supposed to be a very important factor.

This is but a very partial reference to these excellent presentations of this highly important subject. They analyze for the first time a large mass of material from the inside, as it were, and when the knowledge of psychiatry is further advanced with general practitioners, and even with professed psychiatrists themselves, we may look for a material understanding of the motives which lead to insane suicides, and shall be able to take more rational steps to prevent the catastrophe.

FICTION AND THE FIGHT AGAINST TUBERCULOUS DISEASE.

The campaign for the open air life in the treatment of tuberculous disease has at last enlisted a powerful agent in the story writer. The American short story is popularly reputed to be the best short story in the world next to that made in France. Certainly the rapid increase in the number and the almost marvellous growth in the circulation of American periodicals have given a field for the short story writer in this country which is not equaled elsewhere. In *McClure's Magazine* for April a well told tale, under the title *In One Round*, hinges upon the cure of a case of consumption by resort to outdoor life. Such stories as these reach a class which it is difficult to reach through technical literature, and where they are so graphically told as in this instance carry conviction to the reader. The National Association for the Study and Prevention of Tuberculosis would do well to offer substantial prizes for popular short stories accentuating the benefits accruing from outdoor life and making it a condition to the award of the prize that the story must first be printed in some popular magazine of general circulation, thus insuring the association the benefits of the editorial judgment as to the readability of the article and insuring double remuneration for the author.

To all who are interested in the fight against tuberculous disease, a more expanded story, describing the life of a colony of consumptives in the Arizona desert,¹ will prove of value. It aims to present a picture of camp life in the desert as it really is, and

¹*Thus Laboring Life* A Tale of the Arizona Desert. By George Alexander Fischer. New York: B. W. Dodge & Co., 1907.

contains many practical ideas and suggestions. The value of camp life in the desert to the consumptive is well known, but many who undertake it fail through ignorance of the conditions involved. The author points out the necessity for the establishment of camps under the control of the government, where those of small means who are afflicted by tuberculous disease may obtain proper care and treatment in connection with the outdoor life. From the economic point of view alone he thinks that this would be a good investment. He also points out to the philanthropist that in this field he can do much to relieve suffering and save life by the expenditure of a comparatively small sum of money. The value of camp life to the nervous wreck is also brought out. The author writes very vividly of the great Southwest, and weaves fact and fiction into an interesting story.

DR. KNOPF OUTRAGEOUSLY MISREPRESENTED.

Various daily newspapers published on May 8th what purported to be a report of the remarks of Dr. S. A. Knopf before the National Association for the Study and Prevention of Tuberculosis, in which he was made to say: "It is my practice and your sacred duty when you see a dying consumptive before you, to give the sufferer morphine in plenty, that the end may come quickly and painlessly." No physician could for a moment have credited the accuracy of this statement or of the deductions made from it in the sensational reports printed in the daily press, and we felt confident at the time that there was no justification for the publication of such statements. Our confidence in Dr. Knopf's judgment and conscientiousness has been amply supported by the receipt from him of an explicit denial of the allegation, accompanied by a letter from Dr. George Dock, of the University of Michigan, who presided at the meeting referred to in these reports. Dr. Dock says: "I heard clearly what you said. I am sure I know what you meant, and am sure that everybody in the room must have heard what you said. Your words could not possibly be converted into the meaning given." As Dr. Dock pertinently says, the publication of such an outrageous lie is a most shocking thing in its possible effects on thousands of invalids all over the country and on their friends, while the personal injury inflicted upon Dr. Knopf by the dissemination of such a statement is so great that severe punishment should be visited on the persons responsible for it.

ALL HONOR TO THE QUEEN OF SPAIN.

It is reported that the young Queen of Spain insists on nursing her newly born son herself. By so doing she is setting a shining example to women in

all countries and in all social conditions. Nothing can take the place of the mother's milk, and women who unnecessarily decline to give suck to their offspring are too often accessory to the early death of their children—and "accessory" is a mild term.

News Items.

Change of Address: To: William H. Lowmery, 10
Sylvan, 100th Avenue, New York.

The Canadian Club. The New Hampshire journal of the annual dinner of the club held at the Hotel Astor, New York city, January 22, 1906.

The Ladies' Aid Society of the Presbyterian Hospital in Philadelphia is holding a meeting on the evening of May 27, at which Dr. Richard C. O'Connell of Boston delivered a paper on social work at the Massachusetts General Hospital.

Charitable Bequests.—By the will of Bernard Baruch, Mt. Sinai Hospital, the Orphans' Home at Tenth and Bainbridge streets, the Jewish Hospital, and the Jewish Foster Home and Orphans' Asylum are residuary legatees.

The Richmond, Va., Academy of Medicine and Surgery.

The subject of the discussion at the meeting of the Association, held on Tuesday evening, May 14th, was Hydrophobia. Discussion opened in a paper on the subject by Dr. A. G. Hoew.

Society of Physicians of the Village of Canandaigua, N. Y.—The programme for a meeting of this society, held on Thursday, May 9th, as guest of Dr. P. M. Donovan, included a paper on Public Health Problems, by Dr. O. J. Hallenbeck, and A Scheme for Keeping Case Records, by Dr. C. C. Lytle, of Geneva.

The Medical Society of Washington County, Md.—The programme arranged for a meeting of this society, held at Hagerstown, on Thursday, May 9th, included a discussion on Diphtheria Antitoxine, the discussion being opened by Dr. J. W. Humrichouse. Dr. Mary Laughlin also reported a case of Intussusception.

Philadelphia Personals.—Dr. P. Gibson, of Homer, La., is registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

Dr. Samuel McC. Hamill was elected an associate member of the Association of American Physicians, at its recent meeting in Washington.

The International Medical Association for the Prevention of War.—A notice signed by Dr. William Benham Snow, of New York, as president, and Dr. George Brown, of Atlanta, as secretary, has been issued, announcing that a meeting will be held in the Hotel Holmhurst, at Atlantic City, N. J., on June 5th at 8 p. m., to formally organize an American section of the association, and inviting American physicians to become members.

Personal.—Dr. John J. White, of the Borough of Manhattan, has been appointed a medical officer in the Fire Department of the Greater City of New York, with the rank of Battalion Chief, and a salary of \$3,300.

Dr. Achilles Rose has been elected a corresponding member of the *Medical Society of Athens*, in recognition of his labors in calling attention to incorrectness in medical onomatology.

The National Medical Association, composed of physicians, dentists, and pharmacists, will hold its annual meeting at Baltimore, on August 27, 28, and 29, 1907. The officers of the association are: President, Dr. N. F. Mossell, of Philadelphia; general secretary, Dr. John A. Kenny, of Tuskegee, Ala.; chairman of executive board, Dr. F. A. Johnson, of New York; secretary of executive board, Dr. A. R. Collins, of Washington, D. C.

A Pioneer in X Ray Work Dies.—Wolfran C. Fuchs, who died in Chicago recently at the age of forty-one years, was one of the first to establish an x ray laboratory in the United States. Some two years ago the thumb of one hand and the first two fingers of the other began to show ill effects from exposure to the x rays. Amputation failed to put a stop to the trouble, and it eventually led to his death.

The Late Dr. William K. Otis.—The following resolution was adopted at a meeting of the American Society of Genitourinary Surgeons:

Resolved, That in the death of our president, Dr. William K. Otis, we have lost an honored associate, active, talented, and devoted to the interests of his profession. More still, we have lost a sincere and true friend who endeared himself to us all and whom we shall greatly miss; *Voted,* That this resolution be sent to Dr. Otis's family with assurance of our sincere sympathy and regard.

The White River, Vermont, Medical Association.—The annual meeting and Ladies' night of this association will be held at White River Junction, on Tuesday afternoon, May 21st. The following programme has been arranged for the occasion: The Examination of the Eyes of School Children, by Dr. E. H. Carleton; Vaccination and Whooping Cough, by Dr. H. N. Kingsford; address by the Honorable Mason S. Stone, State Superintendent of Education; election of officers and other business; president's address.

The American Society of Superintendents of Training Schools for Nurses held its thirteenth annual meeting at the Rittenhouse Hotel, Philadelphia, on Wednesday, May 8th and Thursday, May 9th. Mayor Reyburn made the address of welcome. The society inspected the new hospital of the Jefferson Medical College and the University Hospital, where they were entertained at tea. Miss Anna L. Anine, New York State inspector of schools for nurses, read a paper on The Demand and Supply of Pupils in the Nurses' Training Schools.

The Medical Society of the Borough of the Bronx.—At a meeting of this society, held on Wednesday, May 8th, Dr. William A. Boyd reported an unusual case of nephritic infection and a symposium on children was held as follows: Examination of Children from a Medical Standpoint, by Dr. F. W. Loughran; Examination of Children from a Surgical Point of View, by Dr. J. L. Amster; Examination of Eyes in Children, by Dr. F. D. Skeel; Examination of Ears, Nose, and Throat in Children, by Dr. C. Graef; Skin Diseases in Children, by Dr. A. Rostenberg.

The Buffalo Academy of Medicine.—A symposium on Hereditary Syphilis was presented by the *Section in Medicine*, at a meeting of this academy, held on Tuesday, May 14th. The order was as follows: (a) *Ætiology and General Pathology*, by Dr. N. G. Russell; (b) *General Course and Symptoms*, by Dr. Albert T. Lytle; (c) *Nose, Throat, and Ear Manifestations*, by Dr. George F. Cott; (d) *Eye Manifestations*, by Dr. Arthur G. Bennett; (e) *Skin Manifestations*, by Dr. Grover W. Wende. These papers were illustrated by stereopticon views.

Scientific Society Meetings in Philadelphia for the Week Ending May 25, 1907. *Monday, May 20th*, Northeast Branch, Philadelphia County Medical Society. *Tuesday, May 21st*, Dermatological Society; Academy of Natural Sciences; North Branch, Philadelphia County Medical Society. *Wednesday, May 22nd*, Philadelphia County Medical Society. *Thursday, May 23rd*, Pathological Society; Entomological Section, Academy of Natural Sciences; Section Meeting, Franklin Institute. *Friday, May 24th*, South Branch, Philadelphia County Medical Society; Northern Medical Association.

The Clinical Society of the New York Postgraduate Medical School and Hospital.—The programme for a meeting of this society, held on Friday evening, May 17th, included the following papers: Demonstration of Skiagraphs of Bone Lesions of Syphilis, by Dr. Martin W. Ware; Prognosis of Syphilis, by Dr. Sigmund Pollitzer; discussion by Professor Roosa, Professor Weber, Professor Porter, Professor Hammond, Professor Lusk, and others; Surgery of the Gallbladder, by Dr. Charles R. L. Putnam; discussion by Professor Lloyd, Professor Dunham, Professor Torek, Professor Halsey, Professor Chase, and others.

Carrier Pigeons as Aids to a Physician, says the San Francisco *Examiner*, are reported from the north of Scotland. The doctor has a scattered practice, and when on long rounds he takes several pigeons with him. If one of his patients needs medicine immediately he writes out a prescription and by means of the bird forwards it to his surgery. Here an assistant gets the message, prepares the prescription and dispatches the medicine. If after visiting a patient the doctor thinks he will be required later in the day he simply leaves a pigeon, with which he can be called,

Pennsylvania Hospital.—The annual meeting of the contributors to the Pennsylvania Hospital was held on Monday afternoon, May 6th. During the year 18,908 patients were treated in the out-patient department, in addition to those treated in the wards. Mr. Edward Y. Hartshorne was elected treasurer, and the following named gentlemen were elected managers: Benjamin H. Shoemaker, T. Wistar Brown, Charles Hartshorne, James T. Shinn, John B. Garrett, John W. Biddle, John T. Lewis, Jr., John S. Jenks, Archibald R. Montgomery, Henry H. Collins, Joseph B. Townsend, Jr., Francis R. Cope, Jr.

The Sanitary Condition of American Warships.—According to the *Army and Navy Journal* Surgeon General Rixey, of the Navy, has received reports from a large number of medical officers afloat which show that the warships to which they are attached are in admirable sanitary condition. The ventilating appliances on nearly all the ships are excellent, improvements being needed in only a few instances. The sick bays are described as first class, being spacious, clean, and thoroughly equipped to meet all requirements. Special commendation is given to the isolation wards, which are fitted with elaborate facilities for taking care on ship-board of cases of contagious disease requiring separation from other patients.

The Williamsburgh Medical Society, of Brooklyn.—The following programme was presented at a meeting of this society, held on Monday evening, May 13th: Presentation of Cases and Specimens: Case of Cerebral Rheumatism, by Dr. Jacob Londoner; Some New Methods of Treatment After Laparotomies, with Presentation of Cases, by Dr. Russell S. Fowler. Papers of the Evening: The Modern Therapy of Cystitis, by Dr. Martin W. Ware, of Manhattan; discussion by Dr. Henry H. Morton, Dr. George M. Muren, and others; Some Practical Consideration of Injuries to the Elbow Joint, by Dr. James P. Warbasse; discussion by Dr. H. Beeckman Delatour, Dr. Walter C. Wood, Dr. J. Bion Bogart, Dr. Warren L. Duffield, and others.

The Queens-Nassau Medical Society.—The annual meeting of this society will be held at Mineola, N. Y., on Tuesday, May 28, at 1.30 p. m. The following programme has been arranged for this meeting: A paper on Municipal Control of Communicable Diseases in Rural Communities, by Dr. B. H. Waters, of the New York City Department of Health; The Control of Communicable Diseases in Rural Communities, by Dr. Joseph H. Bogart, of Roslyn; Treatment of the Adnexa, by Dr. W. Travis Gibb, of New York. Election of officers for the ensuing year. The officers for the present year are as follows: President, Dr. Irving F. Barnes, Oyster Bay; vice-president, Dr. John H. Barry, Long Island City; secretary-treasurer, Dr. James S. Cooley, Glen Cove.

A Diphtheria Epidemic Traced to Milk.—According to the *Boston Medical and Surgical Journal*, an epidemic of diphtheria, which has recently occurred in the towns of Hyde Park, Milton, and Dorchester, has been satisfactorily traced to contaminated milk. All of the cases, although in different localities, were found to be due to the milk of a single producer on the routes of two milkmen. The cases all occurred within a week, and investigation showed that the child of the dairyman was the first victim. Through this child the contamination resulted, and although it is probable that but one day's supply became affected, a disastrous epidemic, numbering approximately forty cases resulted, with several deaths. No further spread of the disease is expected.

The Medical Association of the Greater City of New York.—A meeting of this association will be held at the New York Academy of Medicine on Monday evening, May 20th, at 8.30. The following programme has been prepared for the occasion: Report of the Committee on the Death of Dr. Robert Farries, Dr. Robert N. Disbrow, chairman; The Role of the Gonococcus in Disease, by Dr. Robert W. Taylor; discussion opened by Dr. Herman J. Boldt; A Few Plain Truths About Syphilis, by Dr. L. Duncan Bulkley; discussion to be opened by Dr. James Pedersen; On the Transmission and Cure of Cancer, by Dr. William Seaman Bainbridge; discussion to be opened by Dr. James Ewing. This is the last meeting of the present season. The next meeting will be on Monday, October 21.

The New York Academy of Medicine.—The following order was arranged for a meeting of this academy, held on Thursday, May 16th: Paper: The Sins of Omission and

the *Section in Ophthalmology*, by Dr. G. H. Badger; discussion by Dr. E. A. Ayers, Dr. W. M. Polk, Dr. E. B. Cragin, Dr. J. Riddle Goffe, Dr. Brooks Wells, and Dr. J. J. Ladinsky. For more *MEETING A New Theory As To Its Cause*, by Dr. L. N. Denslow.

The *Section in Ophthalmology* will hold a meeting on Monday evening, May 20th, with the following order: Presentation of Instruments and Specimens; Presentation of Patients; Papers: (a) Postoperative Incision of the Capsule, Its Indications and Technique, by Dr. Rudolph Denig; (b) Extraction of Cataract in the Capsule. Indications and Technique, by Dr. Wilbur B. Marple.

The *Section in Medicine* will hold a meeting on Tuesday evening, May 21st, with the order as follows: Reports of Cases: (a) The Clinical and Autopsy Records of a Case of Paraplegia in Consequence of Aneurysm of the Arch of the Aorta. (Demonstration of Specimen), by Dr. Bond Stow; discussion; (b) A Case of Acromegaly Associated With Very Grave Diabetes Mellitus, by Dr. Heinrich Stern; discussion. Papers: (a) Some Sources of Error in Gastric Diagnosis, by Dr. Charles S. Fisher; discussion; (b) A Clinical Study of Gastrosucorrhoea, by Dr. Henry S. Patterson; discussion by Dr. W. A. Bastedo and Dr. F. V. Goodridge.

The *Section in Obstetrics and Gynecology* will hold a meeting on Thursday evening, May 23rd, with the following order: Presentation of Specimens; Report of Case of Antepartum Death of Fetus from Knot in the Cord; Paper: Remarks Upon Certain Features of the Pathology of the Female Genital Organs, by Dr. James Ewing.

The conjoined *Sections in Rhinology and Otolaryngology* will hold a meeting on Wednesday evening, May 29th, with order as follows: Papers: Meningitis in its Relation to Rhinology; (a) Meningitis as an Intracranial Complication in Diseases of the Accessory Sinuses of the Nose, by Dr. Lewis A. Coffin; (b) Meningitis as an Intracranial Complication in Diseases of the Middle Ear, by Dr. Arnold Knapp; discussion opened by Professor Gustave Killian, of Freiberg, Germany, and Dr. Emil Gruening.

At a meeting of the *Section in Genitourinary Surgery*, held on Wednesday evening, May 15, the following programme was presented: Reports of Cases: (a) Urinary Infiltration Following Operation for Urethral Abscess, by Dr. Follen Cabot, Jr.; (b) Encysted Hydrocele of the Cord, by Dr. A. Fanoni; Presentation of Specimens: Two Specimens of Ureteral Calculi with Skiagraphs, by Dr. Joseph Wiener.

Society Meetings for the Coming Week:

MONDAY, May 20th.—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Hartford, Conn., Medical Society.

TUESDAY, May 21st.—New York Academy of Medicine (Section in Medicine); Tri-Professional Medical Society of New York; Medical Society of the County of Kings, N. Y.; Buffalo Academy of Medicine (Section in Pathology); Binghamton, N. Y., Academy of Medicine; Clinical Society of Elizabeth, N. J., General Hospital; Ogdensburg, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine.

WEDNESDAY, May 22nd.—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society.

THURSDAY, May 23rd.—New York Academy of Medicine (Section in Obstetrics and Gynecology); Brooklyn Pathological Society; Hospital Graduates' Club (anniversary).

FRIDAY, May 24th.—New York Society of German Physicians (annual); Academy of Pathological Science, New York.

The Mortality of Baltimore.—The report of the Health Department for the week ending May 4th showed a total of 186 deaths, as compared with 215 the corresponding week of last year, 201 in 1905, and 207 in 1904. The annual death rate in 1,000 of population was: Whole number, 15.65; white, 12.04; colored, 34.67. The principal causes of death were: Typhoid fever, 6; measles, 4; diphtheria, 2; influenza, 1; consumption 21; cancer, 8; apoplexy 6; heart diseases, 16; bronchitis, 2; pneumonia, 30; Bright's disease, 20; congenital debility, 11; lack of care, 2; old age, 5; suicides, 4; accidents, etc., 14. The nativity of the decedents was as follows: United States, whites, 93; foreign, 29; unknown, 5; colored, 59. Nine deaths occurred at

the City of Baltimore, 20th, 1907, and 1906, and 1905. Births reported were: Total, 294; white, 220; colored, 74; male, 147; female, 147. The following table shows the number of infectious diseases were reported, as compared with the corresponding week of last year.

	1906	1907
Diphtheria	2	1
Scarlet fever	2	1
Typhoid fever	28	1
Measles	3	1
Mumps	1	1
Whooping cough	6	1
Chick-pox	4	1
Consumption	2	1

Infectious Diseases in New York:

The following table shows the number of reported cases of infectious diseases in New York City, for the week ending May 11, 1907, and for the corresponding week of last year.

	May 11, 1907	May 11, 1906
Typhoid fever	44	38
Scarlet fever	1	3
Measles	80	74
Whooping cough	27	14
Whooping cough	20	14
Diphtheria	197	56
Tuberculosis of the lungs	28	42
Other respiratory infections	170	180
Totals	700	2,061

The Health of Philadelphia.—During the week ending

May 4, 1907, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases	Deaths
Epidemic fever	121	16
Scarlet fever	51	1
Chick-pox	53	0
Diphtheria	95	11
Cerebrospinal meningitis	17	14
Measles	59	0
Whooping cough	13	2
Tuberculosis of the lungs	158	69
Pneumonia	93	76
Erysipelas	10	1
Cancer	21	24
Mumps	1	0
Septicemia	3	0
Petechia	2	0
Actinomycosis	1	0

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 14; diarrhoea and enteritis, under two years of age, 13. The total deaths numbered 566, in an estimated population of 1,500,595, corresponding to an annual death rate of 19.60 in a thousand population. The total infant mortality was 112; under one year of age, 90; between one and two years of age, 20. There were 33 still births, 19 males and 14 females. The total precipitation was 0.89 inch. The temperatures varied between 43 and 76 degrees.

Statement of Mortality of Chicago for the Week Ending May 4, 1907, compared with the preceding week and with the corresponding week of 1906. Death rates computed on United States Census Bureau's figures of midyear populations—2,107,620 for 1907, and 2,049,185 for 1906:

	May 4, 1907	April 27, 1907	May 5, 1906
Total deaths, all causes	761	678	590
Annual death rate in 1,000	18.90	16.77	15.00
Sexes			
Males	414	369	349
Females	320	318	244
Ages			
Under 1 year of age	161	141	123
Between 1 and 5 years of age	69	87	48
Between 5 and 20 years of age	15	48	41
Between 20 and 60 years of age	324	258	261
Over 60 years of age	165	146	129
Important causes of death			
Apoplexy	14	19	9
Bright's disease	59	43	42
Bronchitis	21	22	20
Consumption	81	77	70
Cancer	29	30	25
Convulsions	13	10	27
Diphtheria	11	13	8
Heart diseases	58	63	32
Influenza	4	7	1
Intestinal diseases, acute	38	30	36
Measles	9	5	5
Nervous diseases	35	27	21
Pneumonia	170	118	117
Scarlet fever	16	15	17
Suicide	9	8	5
Typhoid fever	35	31	29
Whooping cough	8	6	0
All other causes	150	171	142

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

May 11, 1907.

1. Some Recent Studies on Heredity.
By EDMUND B. WILSON.
2. Bacteriology of the Respiratory Tract. With Especial Reference to Influenza Bacilli. By DAVID J. DAVIS.
3. The Gradual Cure of Hysterical Paralysis.
By HOWELL T. PERSHING.
4. The Underlying Principles of Tuberculin Therapy.
By F. M. POTTENGER.
5. Conservative Surgery of Arms and Legs,
By JOHN EGERTON CANNADAY.
6. Buttermilk Feeding. By HOWARD CHILDS CARPENTER.
7. The Problems of Car Sanitation,
By THOMAS R. CROWDER.
8. Chronic Articular Rheumatism and Arthritis Deformans,
By A. HOFFA and G. A. WOLLENBERG.
9. The Development of Cardiac Murmurs During Attacks of Biliary Colic,
By DAVID RIESMAN.
10. Torsion of the Great Omentum. With Report of a Case.
By W. W. RICHARDSON.

2. Bacteriology of the Respiratory Tract.—Davis undertook experiments to determine the frequency of occurrence of influenza like bacteria in the sputa and throats of persons afflicted with the various infectious diseases, and also of comparing such bacilli for the purpose of determining possible variations which might lead to a subdivision of the influenza group. In sixty-eight cases of whooping cough, influenza like bacilli were isolated sixty-one times; in twenty-three cases of measles, the influenza bacilli were isolated thirteen times; in eleven cases of varicella, the bacilli were isolated seven times; in three cases of epidemic meningitis, influenza like bacilli were found once; in twelve cases of bronchitis, eight times. These bacilli are therefore found in whooping cough in nearly every case some time during the course; often as soon as the whoop begins or slightly before, and again not until some time after the spasms occur. In measles they occur very commonly and early in the disease, that is, within the first three or four days. There also generally appears to be an increase in the number of streptococci in both these diseases over that in the normal. Otitis media complicating infectious diseases is due to a variety of organisms, of which the influenza bacilli may be one, but organisms of the streptococcus and diphtheria group are more frequently responsible. Some of the latter organisms are true diphtheria, others appear to be pseudo forms. The conclusions the author draws are the following: Influenza like bacilli are very commonly found in the upper respiratory tract in various infectious diseases and especially in whooping cough. Occasionally they occur in normal throats. Various organisms occur in the discharge in otitis media, the streptococci being the most common; occasionally influenza bacilli are found. The *Micrococcus catarrhalis* is a common inhabitant of the respiratory mucosa in infectious conditions, and in some cases exist in nearly pure culture. It does not appear to produce specific lesions. The influenza like bacillus from whooping cough is pathogenic for man; its specificity is doubtful. Present data permit us to consider these bacilli as secondary invaders in all the diseases in which they are found. A primary invasion at times should be considered a possibility. Influenza like bacilli are readily taken up in the test tube by unwashed leucocytes and to a less extent by washed leucocytes. This spontaneous phagocytosis is not affected by varying the concentration of the salt solution between 0.6 per cent. and 1.4 per cent. Injection of these bacilli into animals causes the production of specific agglutinins and probably also an increase in opsonins in the serum. Because of the occurrence of spontaneous phagocytosis and ag-

glutination in such sera the determination of the opsonic index for these bacilli is rendered unreliable.

4. The Underlying Principles of Tuberculin Therapy.—Pottenger is of the opinion that tuberculin therapy is in accord with the modern theories of immunity. Theoretically tuberculin is capable of increasing the natural defenses of the organism when given in the proper doses at proper intervals, and clinical experience in its administration warrants a more general use of it in combating tuberculous infection.

5. Conservative Surgery of Arms and Legs.—Cannaday states that the conservative treatment of severe injuries to the arms and legs is essentially modern, and we should not do primary amputations (except in case of a limb held by only a few shreds), but wait for shock to pass and for the patient to regain strength. We should avoid the use of antiseptic solutions for irrigation and use instead normal salt solution. Bones should not be permanently sutured, and we must not be in too great a hurry nor attempt too much in the beginning. Moist gangrene calls for radical treatment. Drainage is usually necessary and the rubber tube is to be preferred. Good functional results may be obtained against great apparent odds, and a saved limb is preferable to an amputation stump.

6. Buttermilk Feeding.—Carpenter reports the cases of twelve infants whom he has fed on buttermilk. The infants varied in age from one month to fifteen months old. The average gain in weight of the five babies treated in the Philadelphia Hospital was $7\frac{1}{2}$ ounces a week, while of the seven babies treated at the dispensary was $8\frac{3}{4}$ ounces a week; the average gain in weight of the entire twelve infants fed on buttermilk was 8 ounces a week. This gain is particularly of interest for the reason that every one of these twelve cases were seriously ill at the time they were put on buttermilk. One advantage of buttermilk in dispensary practice is its inexpensiveness, costing in Philadelphia only 5 cents a quart. Fresh buttermilk is a most excellent temporary food for infants suffering from intestinal indigestion, enteritis, and marasmus, states the author, who has observed no unpleasant effects from its administration; infants almost invariably take it well. A few of these infants, when first put on buttermilk, vomited slightly; but in every case this ceased in a day or two, with one exception. The author concludes that, whatever success has attended the use of buttermilk, it is not so much due to the absence of fat as to the great ease with which the proteid of buttermilk is digested. Several who were unable to digest 0.75 per cent. of calcium casein digested perfectly the 2 per cent. to 3 per cent. of casein lactate in the buttermilk.

8. Chronic Articular Rheumatism and Arthritis Deformans.—Hoffa and Wollenberg, in speaking of treatment, state that all the measures of physical therapy have been tried unsuccessfully. The authors have repeatedly performed arthrectomy, especially of the knee, but with no good results beyond slight improvement in the symptoms. On the other hand, they obtained good results, that is to say, they enabled patients to walk even when contractures were far advanced, by supporting apparatus applied after stretching the contractures and fixing the legs in the stretched position. The leather must extend over the knee joints in such a way as to give them a real support. Then the patients receive side supports, and by means of these and of special stretching apparatus one can gradually stretch the legs entirely straight. The supports of the knee are made movable only when the disease has improved so far that the swelling of the joints has considerably decreased, and the pains have entirely disappeared. They advise, however, not to do this too early, as otherwise relapses may readily occur. They have found that it is best to assist the apparatus treatment by a

course of mud baths. When the leg is stretched, the atrophied muscles are strengthened by daily massage, and finally the patients can put away their machines entirely after some years without fearing any relapse.

9. The Development of Cardiac Murmurs During Attacks of Biliary Colic.—Riesman has observed two patients, in whom a systolic murmur, not previously present, was heard during or soon after an attack of biliary colic. The author says that there are various ways in which a murmur may be produced in cholelithiasis and jaundice. By a true endocarditis, such as may readily be caused by any septic process in the hepatic region, as empyema of the gallbladder or suppurative cholangitis; by anemia; by altered chemism of the blood apart from anemia; by dilatation of the heart and other changes in the myocardium, as e. g., paralysis of the papillary muscles. The transitory character of the murmur, together with the absence of any signs indicating grave infective lesions in the region of the liver, renders it unlikely that the murmur is due to an acute endocarditis. Anemia can hardly be a factor of importance; the murmur comes on too early, long before any signs of grave impairment of health manifest themselves. It can scarcely be that the jaundice is responsible for the murmur in such cases, otherwise such murmurs would be more common. What the factors are in the rather dubious emotional jaundice, the author is unable to say. If the pain in the heart is the principal fact in the production of the murmur, then its presence indicates that the musculature of the heart is not entirely normal, and, therefore, it enforces some caution in the choice of the anæsthetic, perhaps in that of the operative technics itself. A prolonged operation might be dangerous. On the other hand, the discovery of the murmur might lead to the erroneous belief that an old endocarditis existed, a belief which would probably influence the decision of the physician or surgeon. It is evident from these considerations that the knowledge that a systolic murmur might arise *de novo* in cases of biliary colic, and that it is an index of a weakened myocardium—a weakness that may not be serious—will be of value in the management of a given case.

MEDICAL RECORD.

May 11, 1907.

1. A Disturbance of Vision Due to Exaggeration of Binocular Association. By PIERRE JANET.
2. Appendicitis in Infants and Children. With a Statistical Abstract of One Hundred Cases Operated on in Five Years. By JOHN F. ERDMANN.
3. Pityriasis Rosea: with a Report of Several Cases of this Disease Mistaken for Cutaneous Syphilis. By FRED WISE.
4. Insufficiency of the Gastric Muscle. By M. GROSS.
5. Vulvovaginitis in Children with Especial Reference to the Gonorrheal Variety and Its Complications. By HERMAN B. SHEFFIELD.
6. Is an Herpetic Origin of Pleurisy Possible? By W. GERRARD JAMES BUCHANAN.
7. *Uterus of the Opium-eater*. Some Notes of Comparative Anatomy and Embryology, with Deductions. By JOHN P. FURNISS.
8. The Treatment of Stuttering. By F. W. SCRIPTURE.

1. A Disturbance of Vision Due to Exaggeration of Binocular Association.—Janet reviews the history of a patient suffering from a disturbance of vision due to exaggeration of binocular association. The explanations the author gives, are the following: It is said that there exist in man two different visions, binocular vision with convergence, and monocular vision in which the two eyes functionate independently of each other, but one is not disposed to speak ordinarily of these two visions when there exists but a single eye. At first one thinks that a one eyed person can have only monocular vision. This is probably true for those who lose an eye in early infancy, but those who become blind as adults preserve

the cerebral mechanism of binocular vision in all conditions in which that vision is used ordinarily, and they use only the cerebral mechanism of monocular vision in unusual conditions. Ordinarily the preservation of that association of the two eyes scarcely annoys them, perhaps because the subject troubles himself little about the incorrect movements of the blind eye. What is the cause of this obstinacy, as it were, in using binocular vision in spite of the loss of one eye? One might say at first that it is one of the fixed ideas, or, if one chooses, one of those fixed psychological states such as we see continually in the hysterical. The author believes that it is this consciousness, more or less confused by the defect of convergence and by the defect of accommodation in the left eye, which, in a subject who is very neurasthenic and obstinate in seeking to obtain an impossible binocular vision, causes trouble in the fixation and accommodation of the right eye.

2. Appendicitis in Infants and Children.—Erdmann reports one hundred children operated upon by him for appendicitis since January, 1902. Forty-one had foreign bodies, including ten with pinworms. Twenty-four had perforated, with or without general gangrene; fifty were gangrenous, with or without perforation and pus. Thirty out of seventy-eight seen since January, 1904, had pus, either localized or general, and with or without gangrene and perforation, while only five were interval cases. Thirty-seven cases were drained. Of the sixty patients operated upon in which the sex is recorded, thirty-five were male and twenty-five were female. Of ninety-five patients the actual age was recorded as follows: One at one year, one at twenty-one months, one at two years, three at three years, seven at five years, four at six years, ten at seven years, seven at eight years, eight at nine years, nine at ten years, fourteen at eleven years, eleven at twelve years, five at thirteen years, four at fourteen years, and ten at fifteen years. There were seven deaths in this series, a percentage of seven. The following were the causes of death: Pneumonia, two; subphrenic abscess, exhaustion, etc., one; general suppurative peritonitis, four. The children dying of general suppurative peritonitis were aged ten years, twenty-one months, and eleven and a half years, respectively; the age of the fourth was not given. All were in a most profound septic condition; one, ten years old, dying within ten hours; the infant in twenty-six hours, and the eleven and a half year child, a boy ill seven days, who was cyanotic, etc., with an abdomen distended, as the two others had been, dying in about eight hours. The author states that he is a firm believer that once an appendicitis has occurred the patient is always in danger until the organ is removed, and he advises that the patient seen in all such cases be submitted to operation.

3. Pityriasis Rosea.—Wise, in considering the question of differential diagnosis between this disease and the early syphilides, asks: Cannot the diagnosis of syphilis be made and confirmed by the various concomitant symptoms to which syphilitic infections give rise? In the majority of cases the answer to this query would be in the affirmative. But there still remains a large number of patients, who, aside from their cutaneous lesions, present not a single additional symptom, or group of symptoms, that would tend to point the way to the correct diagnosis of their maladies. The scaly and circinate syphilides, for which the rash of pityriasis rosea is most likely to be mistaken, commonly appear at the end of the first, or beginning of the second, year of syphilis. By this time, the usual concomitant symptoms have disappeared, the chancre itself often healing, without leaving a trace behind. It is in this class of cases, chiefly, that errors in diagnosis most often occur. It is well to bear in mind, therefore, that the nature of a

cutaneous disease should be primarily determined, whenever possible, from the lesions seen on the skin, and on the skin alone; in many instances, such a diagnosis would necessarily be a tentative one, to be subsequently strengthened by any corroborative evidence which may be present (for example, on the mucous membranes), and which may tend to confirm the original impression made upon the mind of the diagnostician. This mode of procedure, if persisted in, will soon enable the practitioner to gain a clearer and more correct conception of the various cutaneous diseases which he may encounter in his practice.

4. Insufficiency of the Gastric Muscle.—Gross states that insufficiency of the gastric muscle is rarely of a serious nature, and then only if a mechanical impediment is superadded at the pylorus. As a rule this affection is favorable to a spontaneous cure and complete recovery; it readily yields to a removal of the causative factor. Insufficiencies of a light degree undergo spontaneous cure if they are given the opportunity to do so. But even in advanced cases an alleviation of the manifestations can be attained by enjoining partial or, if necessary, complete rest, by finding out the cause, etc. The same applies to the compensatory disturbances of mechanical dilatation. Irrigation or douches will be indicated in appropriate cases, and then a few sittings will nearly always suffice to achieve a satisfactory result. Mechanical, electric, and hydropathic measures will be crowned with success in a number of cases, although often rendered superfluous by a systematic hygienic dietetic régime, where such can be carried through. But here, as well as in many other sections of pathology, the physician will be obliged to leave a great deal to the slow but unmistakable influence of *vis medicatrix nature*; a more negative treatment—prevention of untoward influences—being likely to lead to better results than exaggerated interference.

BRITISH MEDICAL JOURNAL.

April 27, 1907.

1. Clinical Remarks on the Value of Blood Examination, By H. B. SHAW.
2. Remarks on Maniacal Chorea, By J. M. FINNY.
3. On the Value of an Abnormal Rise in the Average Level of the Diaphragm as a Guide to the Volume of the Blood in Active Circulation, By T. S. WILSON.
4. The Possibility of Actinomycotic Infection by the Vagina, By H. E. S. THOMPSON.
5. A Plea for the Use of Oatmeal in the Dietary of Children, By C. WATSON.
6. On the Present Position of the Treatment of Tuberculosis by Marine Climates, By W. EWART.
7. Lesions of Spinal and Cranial Nerves Experimentally Produced by Toxines, By D. ORR and R. G. ROWS.
8. An Investigation of the Regeneration of Nerves, with Regard to Surgical Treatment of Certain Paralyzes, By B. KELVINGTON.

2. Maniacal Chorea.—Finny reports an instance of that rare and terrible disease known as maniacal chorea or chorea insaniens. It is a form of chorea in which mania supervenes and completely overshadows the motor disturbances. So wide is the difference in the symptoms that it is hard to realize that it is not really another and a new disease, but only an exaggerated variety of the chorea simplex of Sydenham. The patient was an unmarried woman, aged seventeen years, and the prominent features of the case were: Rheumatic pains in the legs for a fortnight, upon which chorea supervened. A mitral systolic murmur, lasting up to the ninth day, the day of death. The pulse quiet and regular up to the last three days, when it rose to 120 to 140. The temperature normal until the day before death, when it touched 103.5° F. The choreic movements were slight for the first two days, after

which they became so violent that two nurses were required night and day to prevent the patient falling out of the bed. The psychical phenomena were prominent, out of all proportion, and at first quite overshadowed the motorial. They differed, however, by the absence of incoherent speech and wild garrulity, from the forms one is accustomed to associate with the acute delirium of fever or acute mania. Occasional, though temporary, mental calm occurred once or twice a day, up to the last three days. Treatment by medicines totally failed to have any effect, the only help it gave being by securing some hours of sleep and muscular rest. The drug which seemed most useful was chloral. The duration of these cases may be very short; death occurred in the case here reported on the ninth day; in some it occurs even as early as the second day, although generally not until after some weeks. The mode of death seems to be due to the exhaustion resulting from the wild muscular movements, inanition, and want of sleep and rest. The difference in the severity of the choreic manifestations is due to the presence of a toxine and to the virulence or mildness of its action on the nerve elements of the cerebral cortex and of the lower nervous centres. In direct proportion as the psychical and higher centres of ideation and volition or the motor centres are those most invaded, so the symptoms each case may present will be either those of mania and other disordered mental states, or those of incoordinate muscular contractions and movements of the body or limbs. Bacteriological examination of the brain and spinal cord of the present case was negative.

3. Significance of the "High Diaphragm."—Wilson brings forward evidence in favor of the following propositions: 1. When, from any cause, the total volume of the blood in circulation is materially diminished, the total bulk of the intrathoracic viscera is correspondingly diminished by the relative emptiness of the thoracic bloodvessels, especially those of the lungs. This diminution in the bulk of the intrathoracic contents shows itself by an elevation of the diaphragm, which has to be maintained at a higher average level than the normal in order to adjust the cubic content of the thorax to the altered volume of the contained viscera. 2. That such a rise of the diaphragm may frequently be detected clinically, and, when present, is of value in diagnosis, and affords important indications for treatment. The position of the diaphragm can be recognized clinically by ascertaining the upper level of the gastric resonance in the left nipple line, or of the upper border of the liver in the right nipple line. In both cases percussion is best done with the patient recumbent. Of the two methods named, the percussion of the gastric resonance is easier and more reliable. A high position of the diaphragm is an important danger signal in some cases of severe enteric fever. It is a useful guide as to the extent to which rectal feeding may be pushed. It must also be borne in mind because in cases of suspected rupture of a gastric ulcer the absence of a liver dulness cannot, as is now well recognized, be relied on as an indication of free gas in the peritoneal cavity. In heart disease, also, the level of the diaphragm is a useful guide to the condition of the circulation. If the weakness of the heart muscle is the prime factor, we shall expect a high diaphragm unless, as in advanced age, the tissues are too rigid to yield easily; if, on the other hand, some obstruction to the circulation, such as valvular defect, is the chief cause of failure, there will be excess of blood in the veins of the thorax, and a normal or low diaphragm would be found.

5. Oatmeal for Children.—Watson states that there is ample clinical evidence that a dietary into which oatmeal largely enters is one which is specially valuable for the growth and nutrition of children. Experiments on young rats indicate that an excessive oatmeal

diet has a markedly stimulating effect on the thyroid gland of young animals, and there seems to be no reason to doubt that a more moderate and physiological use of the same food would be followed by a stimulation in a degree which would be wholly beneficial. Breakfast is the meal into which oatmeal should most largely enter, the best form of administration being porridge and milk, which should be followed by a glass of milk and some bread and butter. It is not advisable to supplement the meal by meat in any form; it is not necessary and tends to create a distaste for the oatmeal.

7. Nerve Lesions Produced by Toxines.—Orr and Rows, as a result of their investigations, reach the following conclusions: 1. Toxines readily travel up spinal and cranial nerves to the central nervous system. 2. While these nerves in their extramedullary portion possess a neurilemma sheath and are protected by its vital action, in their intramedullary part, having lost their neurilemma, they immediately undergo degeneration. 3. The first change is a primary degeneration of the myelin; axis cylinders and nerve cells are evidently affected later.

LANCET

April 27, 1907.

1. The Outlook of the Medical Profession: Scientific, Social, Financial, By J. G. GLOVER.
2. On the Lymphatic System of the Cæcum and Appendix, By J. K. JAMIESON and J. F. DOBSON.
3. A Series of Cases of Goitres Removed Under Cocaine Anæsthesia, By J. L. THOMAS.
4. Seven Cases of General Peritonitis Treated by Operation, with Five Recoveries, By B. M. BONE.
5. The Treatment of Chronic Suppuration of the Middle Ear Without the Removal of the Drum Membrane and Ossicles, By C. J. HEATH.
6. Recent Developments in the Therapeutical Applications of Arsenic, By J. SNOWMAN.
7. The Balneological Treatment of Urinary Diseases, By O. KRAUS.
8. Two Cases of Snake Bite, with a Suggestion for Treatment, By W. H. HAW.
9. A Case of Poisoning by Coalgas, By J. REID.
10. A Case of Desquamative Erythema, By A. NORRIS.

4. Operations for Peritonitis.—Bone reports seven cases of general peritonitis treated by operation, with five recoveries. Six out of the seven cases were due to appendicitis. The chief points in the treatment and after treatment of this series of cases were these: (1) Removal of the cause; (2) removal of the pus as far as possible by means of dry aseptic gauze swabs; (3) free drainage with tube and gauze wicks and plain strands of gauze; (4) care to be as gentle as possible in all manipulations; and (5) counteracting shock by all means possible. Strychnine and brandy were administered before and after the operation. Gastric lavage was employed before and after operation in cases where vomiting was present. Large quantities of saline solution were administered after operation per rectum every four hours, sometimes with brandy added. Nothing was allowed by the mouth for the first twenty-four hours after operation except a teaspoonful of albumen water every hour, and not this if any nausea was present. One sixth of a grain of calomel was administered at once after operation and one sixth of a grain every fourth hour until one and a half grains had been given. Turpentine enemata were used with the rectal tube passed high up to relieve flatus and distention. And, lastly, but by no means least important, the patients were placed in the Fowler position by means of a bolster beneath the knees and a back rest, the bolster being retained in position by two bandages tied to the bed-head on either side. Other points of great importance as influencing the result of operative treatment are rapidly combined with gentleness in manipulation and thor-

oughness of operation, and proper administration of a suitable anæsthetic. If the patient is very nervous ethyl chloride should be used at first, followed by ether or chloroform. It is of the utmost importance to keep the patient warm during the operation.

5. Chronic Suppuration of the Middle Ear.—Heath states that there is no longer any doubt of the fact that chronic suppuration of the middle ear, if promptly treated, is usually curable, with restoration of hearing and with healing of the perforated drum membrane. It appears also that practically every person who suffers from chronic suppuration of the middle ear has disease of the mastoid antrum, and although occasionally the discharge may cease with or without treatment on account of a favorable anatomical formation of the antrum and aditus, this fact does not invalidate the contention that while there is chronic suppuration there is disease of the mastoid antrum. These statements are founded on the experiences of over five hundred mastoid operations performed during the various stages of this disease, and in all those patients not in one instance was the mastoid antrum in a state of health.

6. Arsenic.—Snowman states that, at present, interest in the therapeutical developments of arsenic is concentrated in the combination known as atoxyl. Chemically this substance is metaarsenic anilid ($C_6H_5NO_2As$). It contains metallic arsenic in the proportion of 37.69 per cent., or one half the amount of arsenic present in arsenious acid. It possesses one fortieth part of the toxicity of arsenic or one twentieth of that of arsenious acid. It is an odorless, white powder with a slightly saline taste, and one part is soluble in five parts of water. The solution is stable and does not give the characteristic tests for arsenic. Atoxyl has now had a prolonged trial, and the clinical results justify the following conclusions: 1. It affords the means of increasing the amount of arsenic given without the risk of poisoning. 2. It possesses in full measure all the therapeutical properties of arsenic. 3. Its value is proportionate to the increase of arsenic which its administration permits. The favorite method of the exhibition of this drug is by hypodermic injection. The dose should start with 0.4 gramme and go up to 0.2 gramme. When it has been determined to give a course of arsenic over any prolonged period the most convenient plan is to inject 0.2 gramme of atoxyl twice a week. Intravenous and also intramuscular injections are employed, but subcutaneous injections are unirritating and quite efficient. The earliest cases treated by atoxyl were dermatological, including alopecia, xanthoma, psoriasis, and lichen. The very latest investigations into the action of this drug are concerned with the therapeutics of trypanosomiasis. It must be borne in mind that idiosyncrasy to this drug may exist. A case is recorded of an adult who suffered from amaurosis, œdema of the skin, and hyperkeratosis after the continued injection of atoxyl. Dragging pains in the extremities, quite evanescent however, have been frequently noticed.

8. Treatment of Snake Bite.—Haw reports two cases of snake bite occurring in natives of India. He makes the following suggestion as regards treatment: The great difficulty is to keep the venom out of the circulation. If this could be effectually done until such time as the venom is destroyed, it may be possible to save more lives than is now being done. The usual method of preventing the venom from entering the circulation is by means of the ligature, and one is advised to slacken it occasionally to allow of the poison being worked off in small nonlethal doses. If the circulation could be brought to a standstill at the seat of injection, it might be possible if this be done early enough, to prevent any venom at all entering. The venom would be imprisoned, as it were, and could be dealt with by potas-

sium permanganate and incisions. The writer suggests, therefore, that in cases seen early enough the part be frozen with ethyl chloride spray during the making of the incisions and the rubbing in of potassium permanganate. Where the subcutaneous cellular tissue is loose the part containing the imprisoned poison might be shut off from the general circulation by ligature should needles and thread be handy. All the operations would be painless. A tube of ethyl chloride would be a large addition to a snake bite outfit.

LA PRESSE MEDICALE

April 29, 1907.

1. Fatal Hæmatemesis Due to Cirrhosis.
By J. MOUSSSET and M. BEUTTER.
2. The Salicylic Ion. By P. DESFOSSES and A. MARTINET.
Nouvelles observations d'entéroanastomosis.
By AMÉDEL BAUMGARTNER.
3. Associated Grapes and Sebils.
By R. ROMME.

1. Fatal Hæmatemesis Due to Cirrhosis.—Moussset and Beutter report a case in which a man, fifty-two years of age, came under observation with symptoms of old hemiplegia. He gave a history of syphilitic infection five years before, for which he had undergone a short course of treatment. His circulatory system seemed to be in good condition. There was no albuminuria. The liver reached to the false ribs. The spleen was not perceptible. He was under observation from October till the following March, and occasionally complained of vague gastric symptoms. A great hæmatemesis then took place suddenly and caused the patient's death. Autopsy revealed that the liver was of normal size, but hard and very heavy, its surface irregular, rough, and hard. The hæmatemesis was ascribed to the cirrhosis.

3. New Operation for Enteroanastomosis.—Baumgartner describes the operation recently brought forward by Marshall Flint.

LA SEMAINE MEDICALE.

April 27, 1907.

The Radiotherapy of Syringomyelia.

By F. BEAUJARD and J. LHERMITTE.

The Radiotherapy of Syringomyelia.—Beaujard and Lhermite state that the use of the x rays entirely changes the clinical history of the disease, causes considerable improvement which lasts for some time, and wholly changes the prognosis.

BERLINER KLINISCHE WOCHENSCHRIFT

April 8, 1907.

1. Concerning Pseudoepidemic Cerebrospinal Meningitis.
By A. BAGINSKY.
2. Experiences with the Use of Alypin in Otology.
By K. BÜRKNER.
3. Comparative Investigations in Regard to the Effect Produced by Drinking Distilled Water in a Case of Chronic Nephritis.
By MARCUS.
4. Concerning the Clinical Signification of Allorhythmia Due to Digitalis.
By L. F. DMITRENKO.
5. A Quantitative Gustometer for Clinical Purposes.
By W. STERNBERG.
6. A New Preparation of Salicylic Acid.
By J. BODENSTEIN.
7. Concerning the Demonstration of the Spirochæta Pallida by the Silver Method.
By M. STERN.

1. Pseudoepidemic Cerebrospinal Meningitis.—Baginsky reports the clinical histories of five cases which presented the characteristic symptoms of cerebrospinal meningitis, but were not due to the meningococcus of the epidemic form of the disease. Various other microorganisms were present.

2. Alypin in Otology.—Bürkner considers alypin a valuable substitute for cocaine as an anæsthetic. It appears to be much less poisonous, and to render the parts less ischæmic. To produce an ischæmic effect when desired a preparation of suprarenal capsule may be added.

3. Effect Produced by Drinking Distilled Water in a Case of Chronic Nephritis.—Marcus says that the distilled water produced no injury whatever on the general condition of the patient, that the quantity of urine was almost doubled, that the specific gravity of the urine was diminished more than one half, that with the increase of the diuresis it brought about no decrease of the total amount of albumin excreted, but rather caused a slight increase, and that the refractometric exponents of the blood serum were raised.

4. Clinical Signification of Allorhythmia Due to Digitalis.—Dmitrenko discusses the theories which have been advanced to explain the irregular action of the heart under the influence of this drug, and reports a case.

6. A New Preparation of Salicylic Acid.—Bodenstein describes benzosalin, the methylester of benzoylsalicylic acid, as a preparation of salicylic acid, which produces no harmful effects, and at the same time exerts an excellent antirheumatic and antipyretic action. It appears as a tasteless white powder, insoluble in cold water, sparingly soluble in hot water, freely soluble in alcohol, ether, and chloroform. Its alcoholic-aqueous solution contains no free salicylic acid, and it is resolved into its components by heating with alkalies.

THE AMERICAN JOURNAL OF INSANITY.

April, 1907.

1. A Study of the Neurofibrils in Dementia Paralytica, Dementia Senilis, Chronic Alcoholism, Cerebral Lues, and Microcephalic Idiocy.
By SOLOMON C. FULLER.
2. Maniacal Conditions in Young Adults, with Abstracts of Cases.
By CHESTER LEE CARLISLE.
3. The Clinical Aspects of Paretic Dementia, with Special Reference to Differential Diagnosis.
By IRWIN H. NEFF.
4. Condition of the Heart in Dements.
By EDWARD FRENCH.
5. Application of the Cottage System to the New Hospital.
By G. A. SMITH.

1. A Study of the Neurofibrils in Dementia Paralytica, Dementia Senilis, Chronic Alcoholism, Cerebral Lues, and Microcephalic Idiocy.—Fuller remarks that great caution must be exercised in the interpretation of the alterations which the neurofibrils present in material from pathological sources, a caution which in the light of our present knowledge cannot be too strongly emphasized. The writer believes, from a study of 14 cases given in detail and 40 others which have been examined in the laboratory of the Westborough Insane Hospital, but not reported, and after due consideration of the objections which have been raised, that alterations in the neurofibrils which might well be considered pathological, may be demonstrated in the cerebral cortex of persons dying insane. The alterations in the neurofibrils when taken alone do not appear to have any greater value for diagnostic purposes than the mere disintegration of the tigroid masses in a Nissl preparation. The poverty in cell processes, the more or less universal tinging of the nucleus and destruction of the finer intercellular fibrils characterize the silver impregnation of the dementia paralytica cortex, whereas fair preservation of the dendrites and an equally diffuse destruction of intercellular fibrils, but without special preference for the finest elements, is the rule in dementia senilis. The alterations in the remaining groups of cases reported suggest that these changes may be due to a variety of causes, such as œdema, faulty nutrition or development, and the direct action of intoxications introduced from without. Alterations in the neurofibrils, such as granular disintegration, fragmentation, localized swellings, rarefaction, and complete destruction, were to be found in varying stages of intensity in all of the author's cases. Just as the ensemble in a Nissl preparation is of value in determining a dementia paralytica or in differentiating a

luectic meningeal or perivascular infiltration, in almost to the same degree may the sum of the findings in a silver impregnation for neurofibrils be employed in making an anatomical diagnosis of dementia paralytica, or in differentiating it from a disease with a dystrophic substratum such as dementia senilis.

3. The Clinical Aspects of Paretic Dementia, with Special Reference to Differential Diagnosis.—Neff observes that paretic dementia is an organic brain disease, with superimposed mental symptoms. The clinical inconsistencies frequently observed in paretic dementia and the presence of analogous symptoms in other organic brain diseases make it seem improbable that in paretic dementia we have a definite mental entity directly related to the disease. The variability of the mental symptoms thus expressed has its analogy in other brain affections. In common with our knowledge of other organic brain diseases with attendant mental changes, we may regard the paretic syndrome as capable of being produced by numerous causes. Heredity of indirect type is probably a not infrequent predisposing element to the disease. The clinical differentiation is often impossible. The late appearance of the so called characteristic mental and physical signs may prohibit a concise diagnosis. The diagnosis should only be made by a correlation of the mental and physical signs. There is no one pathognomonic clinical symptom. The differential diagnosis, clinically, is often a matter of extreme difficulty: the distinction from arteriosclerosis of the nervous system, brain syphilis, chronic alcoholic insanity, with organic brain changes, cerebral tumors, and brain sclerosis, may be impossible. Such a differentiation is particularly difficult in the early or incipient stages of these diseases. If we consider paretic dementia as an organic brain disease, the mental changes being secondary, we can more easily recognize and appreciate the vagaries of the malady. By comparing the mental symptoms observed to those occurring in other organic brain diseases we are more clearly impressed with the fact that in a case of paretic dementia there can be no well defined clinical picture. Of necessity we must have multiform mental and physical signs.

REVUE DE CHIRURGIE

April, 1907.

1. Hydatid Gaseous Cysts of the Liver. By F. DÉVÉ.
2. Cavernous Angioma of the Face. By D. J. GRAYWELL.
3. Spontaneous Hernia of the Semilunar Fold of Spiegel. By L. THÉVENOT and GABOURD.
4. Subastragalous Luxations. By A. BAUMGARTNER and A. HENGINER.
5. A Study of the Luxations of the Semilunar Cartilages of the Knee. Pathological Anatomy, Diagnosis and Treatment. By C. DAMBRIN.
6. Volvulus of the Small Intestine and of the Initial Portion of the Large Intestine. By M. GUIBÉ.

1. Hydatid Gaseous Cysts of the Liver.—Dévé states that the term suggests a condition analogous to that which occurs when air enters the pleural, pericardial, mediastinal, or peritoneal cavity. The condition was first referred to by Laennec as the result of the perforation of a hydatid cyst into the stomach, intestine, or lung, while Kunde subsequently described the opening of such cysts into the lung, observing that air passed from the lung into the hepatic cyst and agitated the fluid which it contained. The author divides these cysts into four varieties: (1) Those which perforate into the bronchi; (2) those which open into the stomach or intestine; (3) those which are closed, and which at no time have communicated with the digestive or respiratory organ or with the external world; and (4) those which have become gaseous by reason of an external surgical opening, which may be termed post-operative cystic pneumatosis.

3. The Hernia of Spiegel.—Thévenot and Gabourd define this variety of hernia as inclusive of those cases in which the aponeurotic space is penetrated which extends from the external border of the rectus abdominis to the line of insertion of the muscular fibres of the transversalis. The tissues in such cases have less than the normal resisting power. The hernia may be caused by unusual muscular effort, especially by the strain of coughing. The sac may contain an abundance of fat, the cæcum, the colon, the small intestine, even the stomach. Adhesions are often formed between sac and contents. The symptoms consist of vague intestinal and digestive disturbance, the mass being painful on pressure, the symptoms disappearing when the tumor is reduced. Compression and twists of the intestinal contents with intestinal occlusion or strangulation are to be feared as complications. The prognosis is better in men than in women, especially when obesity supervenes, as is often the case. A radical operation is indicated for those who are young. For those who are old and fat with badly nourished tissues and weak heart and lungs a radical operation offers a bad prognosis. If strangulation occurs in such cases an operation is mandatory, otherwise the author advises the use of a suitable bandage.

5. Luxation of the Semilunar Cartilages of the Knee.—Dambrin concludes that the extirpation of a luxated cartilage is usually preferable to its fixation, since it is easier, more benign, and more effective. He thinks it is indicated in the great majority of cases. Cases which are exceptions to that rule are (1) those in which there is partial anterior or lateral rupture, (2) those in which there is simple relaxation of the insertion without detachment. In such cases careful fixation will suffice to retain the cartilage in position. The author's investigation shows the remarkable results of arthrotomy in the treatment of recurring luxations of the semilunar cartilages.

6. Volvulus of the Small Intestine and of the Initial Portion of the Large Intestine.—Guibé considers local distention as the most distinctive sign of volvulus, but if it remains constant it is often difficult to distinguish volvulus from other intestinal lesions. Thus in general peritonitis the diffused meteorism absolutely obscures the local distention, when the distended loop is a small one. If, on the other hand, the distended loop is a very long one, it may be mistaken for general peritonitis. Should the cæcum be the seat of volvulus and descend into the minor pelvis the diagnosis of the exact condition would be impossible. In some cases meteorism by stasis develops so rapidly that local meteorism does not have time to develop. In other cases the presence of an abdominal tumor recognized perhaps for a long time, may prevent the recognition of a volvulus which may develop in connection with it. If the diagnosis of the cause of obstruction is sometimes so difficult, still more difficult is the diagnosis of the exact seat of the lesion.

ARCHIVES OF PÆDIATRICS.

April, 1907.

1. On the Use of Living Lactic Acid Bacilli in Combatting Intestinal Fermentation in Infancy. By C. H. DUNN.
2. The Twenty-three Hour Treatment. By W. P. NICHOLSON.
3. A Note on the Reducing Power of Urine. By I. A. ABT.
4. On Certain So Called Bad Habits in Children. By J. THOMSON.
5. Presentation and Remarks on Some Foreign Bodies. By T. M. RORCH.
6. Lobar Pneumonia with Unusual Temperature. By F. HUBER.
7. Primary Intestinal Tuberculosis in a Nursing Baby. By E. M. SELLERS.

1. On the Use of Living Lactic Acid Bacilli.—Dunn believes there is a distinction between infectious diar-

rhœa and intestinal indigestion of the fermentation type, that this distinction has usually a clinical parallel, and that a diagnosis between the two conditions can be made upon clinical grounds. Infectious diarrhœa is characterized by persistent fever and by mucus and blood in the discharges. In fermental diarrhœa fever is absent or of brief duration, the discharges are green in color and of foul odor. Tissier's treatment for the fermental diarrhœa consisted in purgation, water diet, and restoration of the normal intestinal flora. The latter was accomplished by him by administering pure cultures of lactic acid bacillus. The author believed such treatment rational, the lactic acid bacillus being harmless. He experimented in thirty-five cases, using buttermilk as a vehicle for the bacilli. Favorable results were obtained in twenty-three cases, the weight increasing, and the dejecta becoming changed. In three cases the symptoms improved, but there was no gain in weight. In nine cases no effect was produced.

2. The Twenty-three Hour Treatment.—Northrup's paper contains the following summary: 1. The twenty-three hour treatment consists in living twenty-three out of the twenty-four hours in the best obtainable cool flowing fresh air. 2. It is especially favorable in convalescence from acute illness, in delicate infants, and young children who are not thriving. 3. The quality of cold or cool flowing fresh air is essential. Cold air may be stale. Air may be oxygenated and free of odors, and yet be warm. 4. Cold fresh flowing air has uniform effects upon young patients. It facilitates sleep, the subjects remaining quiet while in the open air, and sleeping most of the time. It also stimulates the appetite and improves assimilation. 5. Patients who are kept in the open air catch cold less frequently than those who are kept in warm rooms. Much will depend, however, upon the care which is given by the nurse. In the author's winter experience at Sea Breeze Hospital not a single case of pneumonia resulted from this plan of treatment.

3. The Reducing Power of Urine.—Abt's conclusions are the following: 1. The administration of urotropin will cause the urine to reduce copper solutions after the drug has been administered for a considerable period. 2. Urotropin does not ordinarily cause the reduction of the bismuth test solutions. Such urine has no action on polarized light, and does not show a fermentation test. 3. The continued use of urotropin may cause albuminuria with the presence of blood and casts. 4. Nephritis prevents the reduction of Haine's solution by diminishing the permeability of the kidneys for urotropin. 5. A patient with normal kidneys secreting acid urine will eliminate urotropin very rapidly, and this can be demonstrated by the reducing action of the urine on copper solution.

7. Intestinal Tuberculosis in a Nursing Baby.—Snow observes that clinicians are agreed that the early symptoms of infantile tuberculosis are obscure and that a diagnosis is seldom made before death. The diagnosis in his reported case should have been made: 1. By examining the stools for tubercle bacilli; until the last few days of life the stools were normal, but there were tubercle bacilli in the fœces at the autopsy. 2. By examining the contents of the skin pustules which contained tubercle bacilli.

ANNALS OF SURGERY.

May, 1907.

1. Severe Burn of Top of Head at Seven Months of Age. *Followed by Necrosis of Entire Osseous Cap of Cranium.* By W. W. KERN.
2. The Surgical Treatment of Trifacial Neuralgia. By F. MARTIN.
3. Hæmophilic Knee Joint Operation. Recovery Under the Use of Thyroid Extract. By J. T. RUGH.
4. Stab Wounds of the Heart. By R. H. HARTE.

5. Hernia of Stomach Through the Diaphragm Into the Thorax. By G. S. GORDON.
6. Carcinoma of the Cardiac End of the Stomach. By G. McCONNELL.
7. A Critical Review of a Recent Series of Operations Upon the Stomach. By G. E. BREWER.
8. The Lesions Associated with Gunshot Wounds of the Stomach. By W. MARTIN.
9. Duodenal Fistula. Its Treatment by Gastrojejunostomy and Pyloric Occlusion. By A. A. BERG.
10. Ileocaecal Intussusception Due to Myoadenoma of the Ileum. By M. SALZER.
11. The Surgical Treatment of Splanchnoptosis. By B. B. DAVIS.

2. The Surgical Treatment of Trifacial Neuralgia.

—Martin refers to the extensive work of McLane Tiffany in this field, and to the fact that he improved the Hartley-Krause operation by omitting the osteoplastic flap, taking away sufficient bone to enable him to have good access to the middle fossa. The author states that he has done the peripheral operations if the trouble has been limited to one or more nerves, but the relief obtained has only been temporary. When the cases required radical procedures he at first used the Hartley-Krause method, but subsequently used a lower route, dividing the zygoma, discarding the osteoplastic flap, going lower into the temporal fossa, and biting away enough bone to make his opening sufficiently large. If the middle meningeal artery is cut, he ties it in the dura and then strips the latter from the middle fossa to the second division of the fifth nerve. The third division is then sought, the dura split between the two roots, the upper layer of the ganglionic layer sheath raised, and the ganglion uncovered. His results thus far have convinced him that total removal of the ganglion is attended by permanent cessation of pain. The keynote to the successful performance of the operation is the avoidance of hæmorrhage. The majority of deaths have been in cases in which the hæmorrhage was profuse.

4. Stab Wounds of the Heart.—Harte quotes the general impression that all wounds of the heart and pericardium are necessarily fatal. He believes this is not correct and that many nonpenetrating wounds of the heart have resulted in recovery. Until the end of the nineteenth century the treatment of heart wounds consisted in rest, ice, cardiac sedatives, blisters, etc. J. B. Roberts suggested the propriety of attempting to suture stab wounds of the heart, in 1881, but the suggestion was not received with favor. Experimental research shows that the heart will tolerate much injury, that such injuries heal kindly in about two weeks, that interrupted sutures are better than continuous, and that superficial stitches are less likely to tear out than deep ones. The diagnosis of heart wound is not always easy, and may require an exploratory operation. In doing such an operation the pleura must not be injured, if that can be avoided. The pericardium being exposed it should be carefully opened with blunt scissors, clots removed, and the bleeding controlled by pressure until sutures can be introduced. Suture material should be fine chromicized catgut with a sharply curved needle.

7. Operations Upon the Stomach.—Brewer gives as indications for treatment in benign lesions of the stomach the following: 1. Intelligent medical treatment in all primary cases of simple round ulcer. Operation should be advised if relief is not obtained after six weeks of treatment. 2. Operation in all cases of indurated chronic ulcer and in all cases of recurrent symptoms after a primary cure. 3. Operation in all cases of pyloric stenosis, excepting those which are due to gummatous infiltration. He notes the contrast between the brilliant results after operation for chronic indurated ulcer and benign stenosis of the pylorus with the almost unvarying failures after dietetic and medi-

cal treatment. He admits the tendency to unnecessary operations in a field which promises so much as does this, and to the resort to surgical procedure before an accurate diagnosis has been established. He reports seventeen cases, in five of which no definite anatomical lesion was found. In the remaining twelve patients there was but one fatal result, the other eleven improving immediately, and nine have remained well during a period of several months.

8. Gunshot Wounds of the Stomach.—Martin offers the following conclusions: 1. Perforations of the stomach alone should show a low mortality. 2. Uncomplicated gunshot wounds of the stomach are very infrequent. 3. The associated injuries are usually of graver significance than the gastric injury. 4. It is misleading to speak of the mortality resulting from gunshot wounds of the stomach without considering the injuries which complicate such wounds. 5. The mortality of gunshot wounds over the area of gastric vulnerability has been much reduced during the past five years, and is now only about 25 per cent.

THE EDINBURGH MEDICAL JOURNAL.

May, 1907.

1. Exophthalmic Goitre in Its Relation to Obstetrics and Gynaecology, By Sir HALLIDAY CROOM.
2. Some Points in the History and Technique of the Submucous Resection of the Nasal Septum, By W. G. PORTER.
3. The Treatment of Gallstones in the Gallbladder and Cystic Duct, By GEORGE A. PETERS.
4. The Integrative Action of the Nervous System, By W. G. SMITH.
5. On the Use of the Opsonic Index in the Diagnosis of Tuberculosis, By I. S. STEWART and L. C. PEEL RITCHIE.
6. Phagocytosis of Erythrocytes, and the Question of Opsonin in Paroxysmal Hæmoglobinuria, By J. EASON.
7. Two Cases of Periodic Fever, Resulting from Animal Bites, By A. H. CARTER.

1. Exophthalmic Goitre in Its Relation to Obstetrics and Gynaecology.—Sir Halliday Croom concludes: 1. That exophthalmic goitre is a comparatively frequent disorder of women. 2. The thyroid is enlarged during pregnancy. 3. That exophthalmic goitre and pregnancy are a very rare combination, as shown by the fact that out of 15,000 cases he has not met with one in hospital practice, and with only twelve in private and consulting practice. 4. That the influence of pregnancy upon exophthalmic goitre is very uncertain, and that in the majority of cases it aggravates it. 5. That the effect of exophthalmic goitre on pregnancy is practically nil; and that, so far as his own observations and those he has collated from other sources abroad go to prove, most pregnancies complicated with exophthalmic goitre follow a regular even course; and that of the accidents which occur, the most frequent is hæmorrhage, and occasionally abortion. 6. That the relation between pelvic disease and exophthalmic goitre is rare, and that the effect of exophthalmic goitre on the reproductive system is in recent cases to cause irregular menstruation, mostly in the direction of menorrhagia, while in very advanced cases it may cause amenorrhœa. From these conclusions it must be apparent that girls suffering from exophthalmic goitre need not be precluded from marrying or pregnancy. If pregnancy occurs, there is no reason, except in advanced cases, to interrupt the pregnancy, even in spite of the fact that the children of women with exophthalmic goitre may be expected, according to some authorities, to develop neuropathic manifestations.

5. On the Use of the Opsonic Index in the Diagnosis of Tuberculosis.—Stewart and Ritchie observe that a single estimation of the opsonic index is an unsatisfactory method of diagnosis, as both tuberculous and non-

tuberculous cases fall within and without normal limits. If a negative phase appears after inoculation, the presence of tuberculosis may be diagnosed. The absence of a negative phase indicates the absence of a tuberculous infection. The method which the authors advocate, consisting in the injection of a minute dose of tuberculin R. in conjunction with the observation of the tuberculoopsonic index of the blood before and after inoculation, compares favorably with all that has been said of the reliability of the old tuberculin test. It has, however, the distinctive advantages of being applicable to any and every case, of interfering in no way with the patient's ordinary avocation. The tuberculin employed is a bacillary product, and is free from such toxines as the old tuberculin contained. The dose given is a small one, being within the therapeutic limits. If treatment with tuberculin R. is instituted, the diagnostic inoculation forms the first of the series of therapeutic injections. In a few cases, Koch's latest preparation, *Tuberculin B. E. (Bazillen Emulsion)*, which is of a similar nature to tuberculin R., has been employed for diagnosis, and has been found to give equally good reactions. The reaction is a specific one, that is to say, the ingestion of tuberculin affects only the tuberculoopsonic index, and not the index for other organisms, such as, for instance, staphylococci.

Letters to the Editors.

A CASE OF CYSTIC DEGENERATION OF THE CHORION.

395 EAST EIGHTH STREET.

NEW YORK, April 24, 1907.

To the Editors: I beg to report the following case because of the rarity of its occurrence, the probability of its resulting in carcinoma of the uterus, and the difficulty of diagnosis:

Mrs. D., aged fifty-two, healthy, eleven normal deliveries, two miscarriages, youngest child twenty years old. Menstruation ceased five months ago. For the past six weeks she has had, at short intervals, cramp-like pains in the abdomen with slight continual hæmorrhage from the genitals.

On the day I saw her she was taken suddenly with severe pains in the abdomen, rhythmic in character, in fact labor pains, accompanied by profuse hæmorrhage. On examination I found a large, pendulous, fat abdomen, with the uterus extending to the umbilicus. It was regular in shape and contracted with each pain. I could palpate nothing within the uterus. She had no tenderness or rigidity anywhere.

On vaginal examination, I found the vagina full of blood clots, but the cervix was hard and undilated. The uterus was regular in shape, and neither the fornices nor Douglas's pouch contained anything abnormal. Except for the large uterus, corresponding to a five months pregnancy, there were no signs of pregnancy—no pigmentation on the abdomen, no change in the breasts—in fact, the patient herself never suspected pregnancy.

About two hours after my examination the patient expelled from her uterus a mass weighing one pound and a quarter, and measuring about 5 inches long by 4 inches wide, and covered by decidua which presented irregular indentations. It was solid throughout, except for a slight hollow in one pole of the mass, which I found on tearing through the decidua. There was no trace of an ovum. The mass was composed entirely of cysts of about the size of small grapes. Each cyst contained a serumlike fluid. Through the mass bloodvessels and strands of fibrous tissue could be seen to pass.

After the expulsion of this mass the patient still bled considerably. A hot douche controlled the bleeding.

On the third day she had a temperature ranging between normal and 103° F. and 104° F., which lasted till the eighth day. I thought curetting would be advisable, but refrained because of the extreme friability of the uterine walls in such cases. However, this proved unnecessary, as she made an uneventful recovery. On the twelfth day I found the uterus slightly enlarged, but it presented no pathological features.

HENRY M. FRIEDMAN.

COLLEGE REQUIREMENTS.

282 SOUTH MARSHFIELD AVENUE.

CHICAGO, May 1, 1907.

To the Editors: I have read the very interesting article in the *Journal* in reference to the entrance qualifications and fees now in vogue at the leading medical colleges. The whole trouble began by accepting high school and literary college diplomas in lieu of examinations. In many instances the diploma certifies to a falsehood, and if all the matriculates had to pass on their practical merits it would soon be proved that the entrance qualifications were purely and simply unjust. One thing then led on to another, so that to-day the fees are suitable for the plutocratic graduates of literary colleges.

L. M. YOUNG.

Proceedings of Societies.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Seventh Triennial Session, held in Washington, on Tuesday, Wednesday, and Thursday,

May 7, 8, and 9, 1907.

The President, Dr. REGINALD H. FITZ, of Boston, in the Chair.

THE HISTORICAL DEVELOPMENT AND RELATIVE VALUE OF THE LABORATORY AND CLINICAL METHODS IN DIAGNOSIS.

The Evolution of the Idea of the Experiment in the Study of Medicine.—Dr. WILLIAM OSLER, of Oxford, England, read a paper in which he said that there was no accurate knowledge of the beginning of scientific experiments. The old Greeks anticipated almost all modern discoveries, but the value of experiments was not appreciated. Although theoretical conceptions were had, facts were few. The Greeks were our first great anatomists. The Hippocratic art of observation was extended to the dead house, and toxicology developed as drugs were used to kill criminals.

Among the ancients there was one man who could walk into the laboratories of to-day and be perfectly at home. Claudius Galen was the first to realize medicine as a science, one from which principles and laws could be drawn. In experiments upon the heart and arteries he almost demonstrated the circulation of the blood, and for many centuries his anatomy and physiology guided the profession and experimental work was at a standstill. The Arabians laid the foundation of modern chemistry, but little physiological work was done. It was the art of Hippocrates that was developed later. There was no desire for change or improvement, but gradually an independent spirit arose. In Santorinus we had the pioneer in accurate work on experimental lines with instruments of precision. Harvey was quietly working on the circulation of the blood in the seventeenth century. The work of Harvey and Santorinus was not appreciated by their countrymen, and did not stimulate thought as it should have done. Before the close of the seventeenth century experi-

mental medicine became vague. In the latter part of the eighteenth century the science of medicine received a great impetus. In John Hunter we had a genius who developed pathology, and from his contemporary, Jenner, the foundation of immunity was established. How slow we were to appreciate the work of Galen, Loewy, and Hunter. A single generation had received a new outlook upon physiology, chemistry, and pathology, and experiments were responsible. With the advances in physics and chemistry it was difficult to secure competent men. In a large hospital we needed a clinical laboratory in charge of a thinker and worker. It would be a clearing house for all clinical thinkers. Clinicians must go to the chemist, the physiologist, and the pathologist. The new conditions must be met, and we should find a way to unite practice and experimental medicine. We constantly experimented on ourselves with our food and drink. The treatment of disease had always been experimental. The deviation from what we thought was a general rule emphasized the experimenting. Progress was possible only by animal experiments. The history of our profession was full of the heroism of its members.

Neurological and Psychiatric Diagnosis.—This paper was by Dr. LLEWELLYS F. BARKER, of Baltimore. He said the clinic was the mother of the laboratory. The anatomical laboratory was 300 years old, but other laboratories were created in the last century. The diagnosis of nervous and mental diseases made little progress until the laboratories had unravelled the mysteries. The relation of symptoms to lesions was not correlated rapidly. The peculiar and complex structure of the nervous system was appalling to the investigator. It was easy to interpret a lesion of the lung. No lesion was visible in mental diseases, but fortunately there were some minds to whom these problems appealed, and to such men we were indebted for our progress in this matter. Romberg and Magendie were pioneers. The obligatory attendance upon psychiatric clinics had caused a growth of this section of medicine. The experimental work upon the cortex and autopsies of the brain and spinal cord were valuable contributions. The invention of the ophthalmoscope by Helmholtz had been of the greatest importance. The localization of brain lesions had become more exact. The nature of infection which led to nervous diseases had been cleared up by clinical laboratories. New methods of examination had been devised. Each year we learned to see more, feel more, and hear more. In searching for every phase of psychiatry the symptoms were becoming more objective, and hospital histories were becoming less matters of judgment and depended more on observation. The greatest progress was probably in determining the psychic processes. The study of orientation, the inquiry into memory, and work along these lines were far superior to the old clinical conversation. The certainty with which it was now possible to make a diagnosis was due to close observation. The so called psychoanalytic method was an important step. Much light might be thrown on the paranoiac states by the study of the suppressed complex or painful memories.

Chemical and Biological Diagnosis.—This was the title of a paper by Dr. ALFRED STENGEL, of Philadelphia. The work of the laboratory man, he said, must be checked by the clinical man, and vice versa. The laboratory investigators might make errors. We had learned from clinical and biological investigations what were simple expressions of certain functional processes, but they were only as a building stone to a great edifice. The introduction of chemistry into medicine began with the discovery of oxygen by Lavoisier. We had learned much of oxidation by the diseases of oxidation. The suggestion had been made that proteid metabolism

should be studied to learn the composition of protoid food, and it had been considered that the excretion of urea was an important index, but, without knowledge of its intake, this was fanciful and based upon error.

It had been discovered that the great defense was the pairing of the substances in the body with the substances introduced. This had led to the discovery of the auto-intoxications of which we have knowledge. In acid intoxication a liberated acid might unite with the fixed alkalis of the body. This might occur in diabetes, in gastrointestinal diseases, and in diseases of the liver. Mainly through the obstetrician, the importance of the nitrogen and ammonia had been brought on. The relative quantity of nitrogen and the relation between urea and nitrogen might furnish important data. Usually such patients were vomiting under a low nitrogen intake. In uncontrollable vomiting the urea was retained and the ammonia and nitrogen lowered.

The estimation of hydrochloric acid was of little value compared with the motility of the stomach. The presence of large amounts of albumin in stools was important. Fat in the stools was of little value unless it was known that the fat was not split up. The physiological chemist had taught us most of what we knew regarding the pancreas. The value of the methods introduced by biologists could not be gainsaid. The agglutination reaction had been put upon a practical basis in typhoid, paratyphoid, dysentery, and glanders.

Of the opsonins, hardly a definite opinion could be expressed. In the determination of syphilis, the opsonic method had not been positive, but the possibility of this means of diagnosis in the future seemed assured.

Physical Diagnosis was the title of a paper by Dr. RICHARD C. CABOT, of Boston, who said there should be no distinction between laboratory methods and bedside methods. The purely chemical man and the purely clinical man were imperfect, but a union of the two were needed. The immortal soul of this distinction might survive, but he hoped this congress would not draw a hard and fast line between them.

Was there a tendency to greater accuracy in our methods in physical diagnosis? He would say not. There might be a useless bulk of information. Some of our methods were too accurate, such as the leucocyte count of four figures, for example, 8,342. The last three figures were useless and it was pseudoscientific. We had befogging details and there was a false sense of science. What we wanted was to know what we had done. This could not be too accurate. Greater directness of approach to facts was a step in the right direction and toward the elimination of error. There was a tendency toward functional instead of anatomical diagnosis. We had made more progress toward functional diagnosis, and this should be our aim. We must get away from the motto: "Whenever you get a lesion treat it." Visual inspection and palpation, both very old, were the best. The examination by the x ray had come to stay. A measurement of blood pressure was furnishing a direct clue, but most of us got the pressure from our finger. The sphygmograph was more accurate. Cytoscopic methods were of one value to physicians and probably more to the surgeon. The examination of the sputum had made a direct advance. The very great use of the examination of the abdomen of the patient while in a hot bath needed amplification. The attempt to make a distinction between the laboratory man and the clinician must cease.

Dr. GEORGE BLUMER said he did not believe in a distinction between laboratory and clinical methods, and the ideal method would be one where the physician went into the laboratory and did his own work. It would be necessary to change our methods of training to accomplish this. We could at least teach the student how to do this. To most men the clinical method was

more valuable than the laboratory method. It was a question in his mind if we were such good observers as our grandfathers.

(To be continued.)

Book Notices.

Medical and Therapeutic Literature. Original Contributions by American and Foreign Authors. Edited by WILLIAM OSLER, M. D., Regius Professor of Medicine in Oxford University, etc., assisted by THOMAS McCRAE, M. D., Associate Professor of Medicine and Clinical Therapeutics in the Johns Hopkins University. Volume I. *Evolution of Internal Medicine—Predisposition and Hereditary Diathesis—Caused by Physical, Chemical, and Organic Agents, by Vegetable Parasites, by Protozoa, by Animal Parasites—Nutrition—Constitutional Diseases.* Illustrated. Philadelphia and New York: Lea Brothers & Co., 1907. Pp. xxxiv-17 to 937. (Price, cloth, \$6; leather, \$7; half morocco, \$7.50.)

It is announced that this great work is to be completed in seven volumes of about 900 pages each. It will undoubtedly prove to be one of the most important of the medical publications of our time. The introduction to this volume, entitled *The Evolution of Internal Medicine*, is by Dr. Osler himself. It is one of those charming surveys of the history of medicine which the learned author is peculiarly fitted to write. He modestly places it among the pages of prefatory matter numbered with Roman numerals. It makes twenty pages. Adding those to the 891 (exclusive of the index) that follow, we get 911 pages of real text. It may seem strange to some readers that, of those 911 pages, 284 are the work of authors who are not physicians. It would be wrong, however, to infer that it was an error on the part of the distinguished editors to assign such subjects as diseases caused by protozoa, diseases caused by animal parasites, mosquitoes, and metabolism to such men as Calkins, Howard, Stiles, Chittenden, and Mendel. Those men may not have brought out therapeutical details to the extent that many general practitioners might desire, but they have furnished us with condensed and authoritative presentments of the present state of our knowledge and conceptions of the subjects with which they deal. It would be equally wrong to impute extraordinary brevity to Dr. Stiles for his devoting only three lines (on page 626) to the treatment of affections caused by mites and ticks, for he deals again with the treatment at greater length (on page 629). In reality all these articles by nonmedical men team with information that the advanced practitioner of medicine cannot do without.

The opening article of the text proper is by Dr. J. George Adami, and it is entitled *Heredity and Predisposition*. It must be acknowledged that those subjects are extraordinarily difficult to handle. There are, we believe, few men living who could deal with them so clearly as Dr. Adami has done. Dr. Adami is strict in his interpretation of the word inheritance. "There is no such thing," he says, "as inherited smallpox, inherited tuberculosis, or hereditary syphilis." He explains his meaning by adding: "At most the disease would be transmitted from parent to offspring by means of the germ cells; it would not be strictly inherited." As regards inherited morbid tendencies, he says: "Certain families are notoriously more prone to certain infections than is the generality of the community. This is especially marked in connection with tuberculosis, and this when due deductions are made for house infection, subjection to similar environment, etc. We recognize, in short, a tuberculous diathesis. In other families the exanthemata, such as measles and scarlet fever, are specially apt to take a severe form."

Part II, entitled Diseases Caused by Physical Agents, has been written by Dr. Alfred Gordon. He deals in a very interesting way with light, x rays, electricity, air (including rarefied and compressed air), and heat and cold. In Part III Dr. David L. Edsall, under the heading Diseases Due to Chemical Agents, treats strictly of the diseases caused by chemicals, excluding acute poisoning, but including chronic lead poisoning, chronic arsenic poisoning, and chronic poisoning with mercury, phosphorus, silver, zinc, copper, tin, manganese, carbon monoxide, illuminating gas, and carbon bisulphide. We note as a minor blemish that the running title "Carbon Monoxide Poisoning" is carried beyond the pages to which it legitimately belongs.

In Part IV, entitled Diseases Caused by Organic Agents, Dr. Alexander Lambert treats of alcohol, opium, and cocaine, and Dr. Frederick G. Novy deals with poisonous fish, molluscs, crustaceans, meat, milk and its derivatives, and vegetables. These articles are good, though Dr. Novy does not give the treatment of the forms of poisoning of which he writes. In subsequent chapters of the same part Dr. Hideyo Noguchi treats of snake venoms, and Dr. Alonzo Englebert Taylor of autointoxications. Part V, entitled Diseases Due to Vegetable Parasites Other than Bacteria, is by Dr. James Homer Wright. It includes an excellent chapter on actinomycosis.

Diseases Caused by Protozoa is the title of Part VI. The introductory chapter, full of interesting information, is by Professor Calkins. There is an excellent chapter on mosquitoes, by L. O. Howard, Ph. D. Mosquitoes, of course, are not protozoa, but some of them harbor pathogenic protozoa and convey them to man, so that it is appropriate to treat of them in connection with the protozoan diseases. Dr. Charles F. Craig handles the subject of the malarial fevers very satisfactorily; in particular, his descriptions and pictorial representations of the plasmodia are very lucid. It is by inadvertence, we suppose, that Dr. Craig states that in 1712 Torti distinguished the pernicious malarial infections by their yielding to "quinine," for the alkaloid had not then been isolated. The special subject of "black water fever" is dealt with by Dr. J. W. W. Stephens. As regards the treatment of the disease, he says: "The result of experience is undoubtedly against the administration of quinine," but he seems to admit that its use is advisable under certain circumstances. The several varieties of trypanosomiasis are treated of by Colonel David Bruce, of the Royal Army Medical Corps, and amœbic dysentery by Dr. Richard P. Strong. Both chapters are of the greatest interest.

The whole of Part VII is contributed by Charles Wardell Stiles, Ph. D., D. Sc. It is on the other diseases due to animal parasites. Naturally the zoology of the subject is given with considerable detail, but the author does not neglect its practical aspects. Part VIII is devoted to nutrition. It is entirely the work of Russell H. Chittenden, Ph. D., LL. D., Sc. D., and Lafayette B. Mendel, Ph. D., who confine their attention to a general consideration of metabolism in health and in disease. Their essay is very comprehensive and clear.

Part IX deals with constitutional diseases. The early chapters, on diabetes mellitus, diabetes insipidus, and gout, are by Dr. Thomas B. Fletcher. They are of a very high order; indeed, we do not remember ever to have read more valuable writings on these subjects. The chapter on diabetes mellitus, we think, is the gem of the volume. An interesting chapter on obesity, by Dr. James M. Anders, follows; Dr. George F. Still deals satisfactorily with rickets; and Dr. Robert Hutchison concludes the volume with an excellent chapter on scurvy.

From what all English speaking physicians know of the editors and of their skill in selecting their writers,

as well as from a critical examination of the first volume, *Modern Medicine* may confidently be expected to take a place among the great medical books of the world.

BOOKS, PAMPHLETS, ETC., RECEIVED

The Drink Problem in its Medicosociological Aspects. By Fourteen Medical Authorities. Edited by T. N. Kelynack, M. D., M. R. C. P., Honorary Secretary of the Society for the Study of Inebriety. With Two Diagrams. New York: E. P. Dutton & Co., 1907.

Lehrbuch der Arzneimittellehre und Arzneiverordnungslehre unter besonderer Berücksichtigung der deutschen und österreichischen Pharmakopöe. Von Dr. H. v. Tappeiner, Ord. Professor der Pharmakologie und Vorstand des pharmakologischen Instituts der Universität München. Sechste, neu bearbeitete Auflage. Leipzig: F. C. W. Vogel, 1907.

The Sixth Annual Report of the Board of Trustees of the New York State Hospital for the Treatment of Incipient Pulmonary Tuberculosis, Ray Brook, N. Y. For the Year Ending December 31, 1906. Transmitted to the Legislature January 28, 1907. Albany: J. B. Lyon Company, 1907.

A Practitioner's Handbook of Materia Medica and Therapeutics. Based Upon Established Physiological Actions and the Indications in Small Doses. To Which Are Added Some Pharmaceutical Data and the Most Important Therapeutic Developments of Sectarian Medicine as Explained Along Rational Lines. By Thomas S. Blair, M. D. Philadelphia: The Medical Council, 1907.

Stereoskopbilder zur Lehre von den Hernien. Von Prof. E. Enderlen, Basel, und Prof. E. Gasser, Marburg. Jena: Gustav Fischer, 1906.

Praktikum der Bakteriologie und Protozoologie. Von Dr. Karl Kiskalt, Privatdozent, Oberassistent am hygien. Institut der Universität Berlin, und Dr. Max Hartmann, Privatdozent der Zoologie an der Universität Berlin. Mit 80 teils mehrfarbigen Abbildungen im Text. Jena: Gustav Fischer, 1907.

Les Formes postérieures de l'appendicite. Par P. Vignard, chirurgien des hôpitaux, P. Cavaillon, prosecteur à la faculté, et A. Chabanon, interne des hôpitaux de Lyon. Paris: A. Poinat, 1907.

Die Behandlung der angeborenen Hüftgelenksverrenkung. Von Dr. F. Calot, Chirurg am Hospital Rothschild. Uebersetzt von Dr. P. Ewald, I. Assistent an der chirurgisch-orthopädischen Klinik von Prof. Dr. Vulpius in Heidelberg. Mit 206 Abbildungen. Mit einem Vorwort von Prof. Dr. Oscar Vulpius. Stuttgart: Ferdinand Enke, 1906.

Miscellany.

The Owner of the Prescription.—That perennial question, the ownership of the prescription, is being agitated in some of the German newspapers, owing to the publication of a legal opinion in which it was declared that the prescription was the property of the physician, the patient having only temporary rights in it and the apothecary none at all. If, however, the patient at the time of receiving the prescription from the physician stipulates for the right to own it, then it becomes his property; but this property right does not carry with it the privilege of selling the prescription to another or of incorporating it in a book of formulas. We think that the practice, so universally observed in English speaking countries, of the apothecary retaining the original prescription and furnishing a copy to the patient, if asked for, is the best one. In the case of a controversy arising as to the correctness of the apothecary's work in putting up the prescription his ability to produce the original and prove his case by it might be an important factor. A case to decide the ownership of the prescription has never been taken to the State courts of last resort in this country, and in the absence of decisions of this kind pharmacists would do well to insist on retaining the original prescription and furnish a copy only when demanded. Explicit orders of the physician should, however, be obeyed. If

the apothecary is instructed to return the prescription to the patient, then all he has to do is to make an exact copy of it and file it for reference. *American Drug gist*, April 8, 1907

The Pathological Society of Philadelphia.—Founded as it was in 1857, the life of the Pathological Society of Philadelphia is coincident with that of the cellular pathology of Virchow, and its proceedings have been profoundly influenced by that master's teachings. The activities of this society are well and widely known; its published transactions forming twenty-seven volumes, which are of great value. These volumes contain not only records of isolated observations of rare and common conditions in morbid anatomy and pathological histology, but also summaries of investigations, reports of original work, and general résumés of pathological subjects of the first order. In celebrating its fiftieth anniversary it was quite fitting that the society should provide for addresses reviewing former progress in pathology, predicting future lines of endeavor in experimentation, and indicating the practical application of scientific facts to clinical medicine. At the scientific session, held on Friday, May 10th, at ten a. m., Dr. Frederick G. Novy spoke of the rôle of Protozoa in Pathology, Dr. A. E. Taylor of the Dynamic Point of View in Pathology, and Dr. Simon Flexner of the Newer Pathology. Dr. Osler's address at the Pennsylvania Hospital at four o'clock was largely a résumé of the assistance which the practice of medicine had received from the studies of pathologists and an expression of ideals in regard to the teaching of students. He referred to the present turmoil in the realm of therapeutics, and made one epigrammatic statement which we believe deserves frequent quotation and widespread publicity; that the physician is the *teacher* and not the *servant* of the public. Comment we deem unnecessary; the fact, we believe, cannot be successfully denied. The exhibition meeting with which the celebration began, on the evening of Thursday, May 9th, was a carefully prepared repetition of the annual exhibition meetings which the society has held for a number of years. All the laboratories in Philadelphia in which original work and teaching are done were represented. It would perhaps be unjust to call attention to any one exhibit among such a wealth of excellent illustrations of the various branches of pathology. The social features of the celebration were provided for by a luncheon at the University Club, at two p. m., on Friday, May 10th, and a subscription dinner at the Bellevue-Stratford Hotel at half past seven o'clock on Friday. One hundred and fifty members and guests sat down to the table. Dr. George E. de Schweinitz acted as toastmaster, and responses were made by Dr. S. Weir Mitchell, Dr. William H. Welch, Dr. Reginald H. Fitz, Dr. J. Collins Warren, Dr. Simon Flexner, Dr. Alfred Stengel, Dr. Abraham Jacobi, Dr. A. E. Taylor, and Dr. George Dock. The Pathological Society of Philadelphia will undoubtedly give as good an account of itself fifty years hence, as it gave on this, its semicentennial. We extend our congratulations for its past and our best wishes for its future.

Official News.

Public Health and Marine Hospital Service
Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending May 10, 1907:

Places.	Date.	Cases.	Deaths.
Florida—Hillsboro County.....	Apr 26 27	2	
Georgia—Augusta	Apr 28 30	4	
Illinois—Augusta	May 2		Present.

Iowa—Des Moines	Apr.	23 30	1
Iowa—Pella	Apr.	19 May 2	30
Illinois—Springfield	Apr.	7 May 2	1
Indiana—Ellettsburg	Apr.	20 27	1
Indiana—Indianapolis	Apr.	21 28	4
Indiana—Logansport	Apr.	1 30	1
Indiana—Porter	Apr.	22 29	1
Indiana—Marengo	Apr.	1 30	4
Indiana—Michigan City	Apr.	1 30	1
Indiana—South Bend	Apr.	20 27	1
Iowa—Ottumwa	Apr.	6 27	16
Kansas—Kansas City	Apr.	27 May 4	2 Imported.
Kansas—Lawrence	Mur.	1 31	6
Kentucky—Lexington	Apr.	7 May 2	1
Louisiana—New Orleans	Apr.	20 27	10*
Massachusetts—Chelsea	Apr.	20 27	1
Massachusetts—Lowell	Apr.	20 27	16
Michigan—Ann Arbor	Apr.	20 27	1
Michigan—Saginaw	Apr.	20 27	1
Minnesota—St. Paul	Feb.	1 28	1
Minnesota—Wadena	Apr.	20 27	3
New Jersey—Hoboken	Apr.	27 May 4	1
New York—New York	Apr.	20 27	1
North Carolina—Greensboro	Apr.	20 27	5
Ohio—Cincinnati	Apr.	26 May 3	1
Ohio—Cleveland	Apr.	19 26	1
Ohio—Toledo	Apr.	20 27	4
Texas—Bell County	May	3	3
Texas—Houston	Apr.	20 27	9
Texas—San Antonio	Mar.	30 Apr. 6	2
Texas—San Antonio	Apr.	20 27	2
Washington—Spokane	Apr.	20 27	16
Washington—Tacoma	Apr.	20 27	2 Imported

*Smellpot Insalau*Philippine Islands -Manilla . . . Mar. 16-23 . . . 7

Smallpox—1 origin

Brazil—Para	Apr. 6-13	2	
Canada—Toronto	Apr. 6-13	3	
Canada—Toronto	Apr. 20-27	3	
Chile—Coquimbo	Apr. 6	2	
Chile—Iquique	Apr. 6		Present
China—Hongkong	Mar. 9-23	53	34
China—Nanking	Mar. 23-30	2	
China—Shanghai	Mar. 23-30	3	24
China—Tientsin	Mar. 23-30	2	
France—Paris	Apr. 13-20	11	1
France—Toulon	Mar. 1-31	12	5
Germany—General	Mar. 16-30	37	
Gibraltar	Apr. 14-21	1	
India—Bombay	Mar. 26-Apr. 9		
India—Calcutta	Mar. 23-30		8
India—Madras	Mar. 30-Apr. 5		
India—Rangoon	Mar. 16-30		3
Italy—General	Apr. 4-18	35	
Madeira—Funchal	Apr. 14-21	60	1
Mexico—Jalapa	Apr. 19-26		1
Mexico—Mexico	Mar. 23-Apr. 6		
Mexico—Vera Cruz	Apr. 20-27		1
Peru—Lima	Mar. 31-Apr. 6		
Russia—Odessa	Apr. 6-13	11	Present
Siberia—Vladivostok	Mar. 21-28		1
Spain—Valencia	Apr. 14-21	1	
Straits Settlements—Singapore	Mar. 16-23		
Turkey in Asia—Bassorah	Mar. 30-Apr. 6		

Yellow Fever Foreign.

Brazil—Manaos	Apr. 6-13 . . .	1
Ecuador—Guayaquil	Apr. 6-13 . . .	7

Cholera—Foreign

India—Bombay	Mar. 26-Apr. 9	2
India—Calcutta	Mar. 23-30	57
India—Madras	Mar. 30-Apr. 5	13
India—Rangoon	Mar. 16-30	13
Straits Settlements, Singapore	Mar. 9-16	

Plague—Insular

Hawaii--Honolulu	Apr. 29-May 6...	8	4
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Plague - Forearm

Country	City	Date	Present	Present
Brazil	Para	Apr. 6-13	3	3
Chile	Antofagasia	Apr. 6	21	21
Chile	Santiago	Apr. 6		Present
Chile	Tabahuanca	Apr. 6		Present
China	Hongkong	Mar. 16-23	3	3
Egypt	Alexandria	Mar. 28-Apr. 11	2	2
Egypt	Assiout Province	Mar. 28-Apr. 11	10	2
Egypt	Beni Souef Province	Mar. 28-Apr. 11	2	2
Egypt	Girgeh Province	Mar. 28-Apr. 11	6	3
Egypt	Keneh Province	Mar. 28-Apr. 11	68	48
Egypt	Minieh Province	Mar. 28-Apr. 11	12	4
India	Bombay	Mar. 26-Apr. 9		1,262
India	Calcutta	Mar. 26-30		166
India	Rangoon	Mar. 16-30		163
Peru	Eten	Mar. 30-Apr. 6	6	7
Peru	Lambayeque	Mar. 30-Apr. 6	7	3
Peru	Lima	Mar. 30-Apr. 6	6	1
Peru	Paiza	Mar. 30-Apr. 6	11	1
Peru	Santiago de Cao	Mar. 30-Apr. 6	1	1
Peru	Trujillo	Mar. 30-Apr. 6	8	1

Public Health and Marine Hospital Service:

Official List of Changes of Stations and Duties of Commissioned and Noncommissioned Officers of the United States Public Health and Marine Hospital Service, for the seven days ending May 8, 1907.

BURKHALTER, J. T., Passed Assistant Surgeon. Granted leave of absence for twenty-five days, or so much thereof as may be necessary, on account of sickness, from April 20, 1907.

CURLEY, C. P., Acting Assistant Surgeon. Granted leave of absence for four days, from May 7, 1907.

EBERT, H. G., Assistant Surgeon. Assigned to duty on the Revenue Cutter *Perry*, effective May 15, 1907.

FOSTER, J. P. C., Acting Assistant Surgeon. Granted leave of absence for ten days, from May 5, 1907.

FOX, C., Passed Assistant Surgeon. Relieved from duty at San Francisco Quarantine Station and directed to proceed to St. Michaels, Alaska, and assume charge of the Service at that port.

GRIFFITHS, T. H., D. Acting Assistant Surgeon. Order granting leave of absence for twenty-one days, from April 12, 1907, amended to read sixteen days only.

HAMILTON, H. J., Acting Assistant Surgeon. Granted leave of absence for nine days, from May 4, 1907.

HURLEY, J. R., Assistant Surgeon. Directed to proceed to San Francisco, Cal., for duty on the Revenue Cutter *Albatross*.

OAKLEY, J. H., Passed Assistant Surgeon. Directed to proceed to Seattle, Wash., for special temporary duty, upon completion of which to rejoin his station.

SCOTT, E. B., Pharmacist. Granted an extension of annual leave for five days, from April 23, 1907, on account of sickness.

STEGE, E. M., Assistant Surgeon. Granted leave of absence for ten days, on account of sickness, from April 24, 1907.

STEVENSON, J. W., Acting Assistant Surgeon. Order granting leave of absence for two months, without pay, from February 8, 1907, amended to read one month and fifteen days, without pay.

TROTTER, F. E., Passed Assistant Surgeon. Granted leave of absence for ten days, from May 8, 1907.

VOGEL, C. W., Passed Assistant Surgeon. Granted leave of absence for five days, from March 27, 1907, under paragraph 191 of the Service Regulations.

WARREN, B. S., Passed Assistant Surgeon. Granted leave of absence for seven days, from April 30, 1907, under paragraph 191 of the Service Regulations; granted an extension of leave of absence for three days, from May 6, 1907.

WASDIN, E., Surgeon. Granted leave of absence for one month, or so much thereof as may be necessary, on account of sickness, from May 10, 1907.

Appointments.

Dr. William M. Bryan, of Virginia, commissioned (recess) as Assistant Surgeon, Public Health and Marine Hospital Service, May 4, 1907.

Dr. James R. Hurley, of California, commissioned (recess) as Assistant Surgeon, Public Health and Marine Hospital Service, May 4, 1907.

Dr. Anthony J. Lanza, of the District of Columbia, commissioned (recess) as Assistant Surgeon, Public Health and Marine Hospital Service, May 4, 1907.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers of the Medical Department of the United States Army, for the week ending May 11, 1907:

BARNEY, CHARLES N., First Lieutenant and Assistant Surgeon. Granted leave of absence for ten days.

DEVEREUX, J. R., Captain and Assistant Surgeon. Granted leave of absence for thirty days.

LAMBERT, SAMUEL E., First Lieutenant and Assistant Surgeon. Ordered to accompany Major E. R. Morris, surgeon, from Fort Logan, Colo., to the Army General Hospital, Washington Barracks, D. C.; upon arrival at Washington, ordered to report to Major William H. Arthur, surgeon, president of the examining board, for examination for advancement, instead of reporting at the Presidio of San Francisco, Cal., as directed in previous orders.

LYSTER, WILLIAM J. L., Captain and Assistant Surgeon. Granted leave of absence for ten days.

MCCAW, WALTER D., Major and Surgeon. Now at Ancon, Canal Zone, will proceed at once to Fort Meade, South Dakota, for temporary duty.

NOBLE, ROBERT E., Captain and Assistant Surgeon. Relieved from duty at Fort Casey, Wash., and ordered to repair to Washington and report to the chairman of the Isthmian Canal Commission for duty with the commission on the Isthmus of Panama.

SCOTT, GEORGE H., First Lieutenant and Assistant Surgeon. Granted leave of absence for thirty days.

SNYDER, HENRY D., Major and Surgeon. Leave of absence extended eight days.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending May 11, 1907:

BACHMANN, R. A., Passed Assistant Surgeon. Detached from the *Franklin* and ordered to the *St. Louis*.

BARBER, G. H., Surgeon. Detached from the *Baltimore*, when placed out of commission, granted leave of absence for one week, and thence ordered to the *Kearsarge*.

BOGERT, E. S., JR., Surgeon. Upon expiration of leave ordered to the *Milwaukee*.

BROWN, E. M., Passed Assistant Surgeon. Detached from the Bureau of Medicine and Surgery, Navy Department, and ordered to duty at the Naval Hospital, New Fort Lyon, Colo.

CURL, H. C., Surgeon. Ordered to additional duty at the Naval Medical School Hospital, Washington, D. C.

ELLIOTT, M. S., Surgeon. Detached from the *St. Louis* and ordered to duty at the Navy Yard, Norfolk, Va., in connection with fitting out the *Olympia*, and to duty on board that vessel, when placed in commission.

KITE, I. W., Surgeon. Detached from the *Kearsarge* and ordered to the *Franklin*.

MEANS, V. C. B., Surgeon. Upon discharge from treatment at the Army and Navy General Hospital, Hot Springs, Ark., ordered home and granted sick leave for three months.

PAGE, J. E., Surgeon. Detached from the *Milwaukee* and ordered to continue treatment at the Naval Hospital, Mare Island, Cal.

WAGGENER, J. R., Medical Director. Having been examined by a retiring board and found incapacitated for active service on account of disability incident to the service, is retired from active service, May 6, 1907, under provisions of Sec. 1453 R. S.

Births, Marriages, and Deaths.

Married.

ELIOT GRANDY.—In Manila, Philippine Islands, on Tuesday, March 5th, Dr. Henry W. Eliot, United States Army, and Miss Flora Grandy, of Burlington, Vermont.

KERR-MAYGINNES.—In Kansas City, Missouri, on Wednesday, May 1st, Mr. William Kerr, of Chicago, and Dr. Kate Mayginnnes.

Died.

BRENNAN.—In New York, on Friday, May 10th, Dr. John W. Brennan, aged seventy-seven years.

BUTTLES.—In New York, on Thursday, May 9th, Dr. Marvin Stephen Buttles, aged seventy-three years.

HARDEN.—In Waverly, N. Y., on Monday, May 6th, Dr. Rufus S. Harden, aged eighty-seven years.

HUMES.—In Boston, on Tuesday, May 7th, Dr. Albert H. Humes, aged fifty-two years.

MARCELLUS.—In Charlottesville, Virginia, on Monday, May 6th, Dr. Thomas M. Marcellus, aged fifty-six years.

PFEIFFER.—In Camden, N. J., on Tuesday, May 7th, Dr. Ferdinand P. Pfeiffer.

RIDGE.—In Kansas City, Missouri, on Tuesday, May 7th, Dr. Isaac M. Ridge, aged eighty-one years.

ROGERS.—In Napoleonville, Louisiana, on Sunday, May 5th, Dr. Fulton Rogers, aged sixty years.

TULLER.—In Carlsbad, New Mexico, on Wednesday, May 1st, Dr. William Newton Tuller.

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WHOLE No. 1486.

Original Communications.

AFROTHERAPY IN COLD WEATHER, WITH PARTICULAR REFERENCE TO TUBERCULOUS DISEASES, AND DEMONSTRATION OF A NEW MODEL OF A WINDOW TENT.*

By S. A. KNOFF, M. D.,
New York,

Associate Director of the City and Pulmonary Diseases of the
Health Department, Visiting Physician to the River-
side Sanatorium of the City of New York, etc.

Why is it that the majority of tuberculous patients feel better in winter than in summer? Why is it that the statistics of cures which come to us from sanatoria are so much more favorable for the winter months than the summer? The answer is, that cold stimulates all the functions of the body to greater activity. Cold air contains more oxygen to the cubic inch than warm air does, and it increases the number of red blood corpuscles. According to Kellogg¹, the volume of air is reduced one five-hundredth part for each degree of reduction in temperature; thus, when we compare a winter day with the thermometer at 20 degrees F. with a hot summer day where it registers 90 degrees F. we have a difference of 70 degrees F. and the air is reduced to one seventh of its volume. Even if the temperature is only at the freezing point, the body takes in one seventh more oxygen than on a hot summer day. How much more life giving oxygen must enter into the lungs of our tuberculous friends when they sleep out of doors at 20 degrees, 30 degrees and even 40 degrees F. below zero in the Adirondack Mountains, in Liberty, in the Berkshire Hills or at Sea Breeze on Coney Island (Fig. 1). There the little scrofulous and tuberculous children are happiest in their outdoor play when it is cold enough for the average New Yorker to shut himself up in the over heated dry atmosphere of his apartments.

Concerning the endurance of outdoor life by consumptives, particularly outdoor sleeping in winter, Dr. Lawrason Brown of the Adirondack cottage sanatorium (Fig. 2) very kindly sent me an interesting letter a few days ago from which I quote the following:

"About 60 per cent. to 75 per cent. of all of our patients sleep out and more would do so but they have not the opportunity. More, of course, sleep out in the summer than in the winter, but the figures I have given you pertain to the winter. No difference is made about the degrees of temperature. The coldest that we have

* Read before the Section in General Medicine of the New York Academy of Medicine, March 19, 1907.

¹ J. H. Kellogg, Good Health. *Journal of Outdoor Life*, July, 1905.

had here this winter is 28 degrees F. and 30 degrees F. below zero. The patients have slept out right through it, though some have been uncomfortable until they have taken the necessary precautions. I do believe that when the thermometer falls much below zero, say over 15 degrees F. to 20 degrees F., very special precautions have to be taken in order to be comfortable in bed."

From the Loomis sanatorium, Dr. Herbert M. King was good enough to favor me with the following items. In the sanatorium proper (Fig. 3), where both early and more advanced stages are received, 50 per cent. slept outdoors during this winter and in the annex where, as far as possible, only the incipient and early stages are admitted 100 per cent. slept outdoors. All patients who slept on the veranda managed to be outdoors during the day-time, so that they averaged twenty-two hours of outdoor life out of the twenty-four.

The lowest temperature at the Liberty sanatorium during the winter 1907 was 15 degrees F. below zero on January 24th.

At our New York State sanatorium (Fig. 4), patients do not sleep outdoors, but in rooms with windows wide open. Dr. M. P. Burnham, who is in charge of this institution believes that one factor of the well being and rapid improvement of tuberculous patients in winter is to be explained by the absence from dust. The snow in covering up the ground's surface covers at the same time a great number of bacteria, which are blowing about during the summer months of the year and are inhaled, and that this brings about different degrees of mixed infections which are of course not conducive to the healing of the tuberculous lesions. Dr. Burnham reports to me that the coldest temperature at Ray Brook was 38 degrees F. below zero.

From the Massachusetts State sanatorium (Fig. 5), Dr. Edward O. Otis, the visiting physician, kindly sent me the report made to him on this subject by Dr. Dunham, his resident physician.

"About 10 per cent. of our patients (upwards of thirty-five in number) have slept out of doors during the winter. The average time of taking the cure during the day in cold weather is nine hours. Our coldest temperature was 18 degrees F. below zero.

It is to be borne in mind that our sanatorium is on a pavilion plan and situated on the top of a hill, and in the wards where our patients sleep there is a strong sweep of wind, from whatever direction it may happen to come, consequently the patients are practically sleeping out of doors all the time while in these wards. Furthermore, we have had more days this winter when the temperature has been below zero than in any other winter since the sanatorium opened."

From Dr. Vincent Y. Bowditch, the medical director of the Sharon Sanatorium, near Boston, Mass., which was established without any regard to climatic advantages and which nevertheless has done such admirable work, I received the following instructive reply:

"In answer to your question I will say that about twenty per cent. of the Sharon Sanatorium patients

hours' rest every afternoon when the same methods were followed as at night, with windows and doors wide open. The coldest temperature of any one night was 14 degrees F. below zero. It was a very noticeable fact that those who did this spoke without questioning of their increased feeling of appetite for breakfast after sleeping in the open air all night, a canvas shelter above them being the only form of protection for the beds. It should go without saying that such treat-



FIG. 1.—Tuberculous children at play in midwinter, at Sea Breeze, Coney Island.

have slept out on a new sleeping balcony the greater part of the time since the autumn; and had I been able to make arrangements for all the others, by far the larger number of them would have done the same from preference. All of them were sleeping with windows and doors open in their bedrooms. It was astonishing to me to find how the patients not only become accustomed to this but prefer it, many of them requesting to follow the same method as the others although at the time it was impossible for me to comply with their request.

"As to the average number of hours of taking the cure during the day in cold weather, the only time that the patients were indoors was during the morning dressing hour and at meal times. Most of the patients were sitting out on the piazza or about the place the rest of the time up to bed time, except for the two

ment is meant for selected cases and should not be practised indiscriminately upon all without cautious trial; but there is no doubt about it, that the majority of patients infinitely prefer this method after they have once begun it."

Dr. D. R. Lyman, the resident medical superintendent of the Gaylord Sanatorium at Wallingford, Conn., wrote me as follows:

"Every patient in the place has slept out of doors throughout the entire winter. The lowest temperature recorded was 13 degrees F. below zero, and the winter in general was one of the coldest for several years. Having been forced to put all beds on the porch in order to use a room as dressing room for two or three people, we have been forced to put patients out of doors from the time of their arrival. If their dressing



FIG. 2.—Veranda for outdoor life in midwinter for bed patients at the Adirondack Cottage Sanatorium, at Trudeau, N. Y.

for sleeping is inspected by some one in charge I find that there is very little danger of their catching cold.

"I think the average hours out of doors for all patients here will certainly not be under twenty. Of course, as you remember, all of our patients have sheltered porches for their beds and warm rooms in which to dress.

"We did not attempt to use our tents in winter, as I do not believe that they compare with the shacks or the porch system.

"The Gaylord Farm Sanatorium is a strong exponent of the benefit of sleeping out of doors."

Not only in pulmonary and bone tuberculosis but also in pneumonia and certain nervous and mental afflictions the profession has at last learned to appreciate the value of the invigorating influence of cold pure air. The admirable work done by Dr. Northrup and his followers, particularly in the treatment of pneumonia in children, is telling evidence of the truth of Burney Yeo's statement made years ago, that the temperature in winter, and particularly its variations, is conducive to the highest development of the vital forces necessary to combat disease.

The tuberculous patient desiring to be cured of his affliction has at his disposal four methods by which to utilize the cold air in winter and derive great benefit from it. There is first the well known rest, or Liège, cure on the reclining chair in the open air, which may be alternated in suitable cases with drives if the country is not dusty or with sleigh rides. Then there are walking, driving, or mild winter sports for the ambulant cases. Thirdly, there are judicious

respiratory exercises for selected cases, and, lastly, sleeping out of doors all night.

The rest cure on the reclining chair is best carried out in winter on a veranda with southern exposure so arranged as to be protected against cold winds. In sanatoria the specially constructed rest cure galleries, sheds, or the lean-tos, are particularly adapted to this purpose. Whenever the patient takes his rest cure in winter he should always place his chair where his body can be bathed by the rays of the sun

while his head remains in the shade. To make the prolonged rest cure on the chair or in bed less irksome, one should always see to it that the bed, or the reclining chair, is placed where the patient has a pleasant outlook. In the construction of sanatoria the greatest attention is to be paid to the placing of the veranda where the most pleasant views can be obtained.

The half tent which I show you here (Fig. 6), or a wicker beach chair, transformed into a similar device, serve as a sort of individual rest cure gallery. In the absence of a veranda they can be placed in the grounds, in the yard, or on the roof. The re-



FIG. 6.—Rest cure gallery and wicker beach chair in midwinter at the Gaylord Farm Sanatorium, at Trudeau, N. Y.

clining chair should be comfortable. I prefer one with the characteristic knee bend and adjustable back such as you see placed in the half tent. During the rest cure in winter the patient should be warmly clad and have plenty of covering on his chair and furs in intensely cold weather. His feet must always be warm. To attain this end he should have furlined shoes, and if necessary a hot water bottle or hot sand bag. It must be borne in mind that there is no benefit whatsoever derived from the cold air cure when the patient is chilled.

It is best to have the patient become gradually accustomed to this Liège cure in winter. This Liège,

torium, corroborate my opinion, and so does the experience of all those who have examined the value of respiratory exercises carefully and without prejudice.

Apropos of pulmonary gymnastics in tuberculosis, let me quote the following strong statement from a recent editorial in our State medical journal:³

Those who have advised against deep breathing, and have counseled pulmonary rest, have erred in comparing tuberculosis of the lungs with tuberculosis of the joints. The joints are not vital organs, and may be completely removed without harm to the system; but the body depends upon the oxygen supplying function



FIG. 1. Winter view of the New York State Hospital for Incipient Tuberculosis at Ray Brook, N. Y.

or rest, cure should always be alternated every hour or two with short walks, and breathing exercises with or without movements of the arms as the condition of the patient may indicate. Even the febrile patient should not lie for hours on his back with shallow breathing if he wishes to avoid hypostatic pulmonary congestion. He should change his position frequently and take deep inspirations every half hour or so. During drives or sleigh rides the patient must, of course, be comfortably warm and should avoid conversing, so as to breathe, as far as possible, only through the nose. The ride should never be so long as to overtire the patient. The walking exercise should begin preferably on graded walks of varying inclinations. The duration of such a walk should, of course, be prescribed by the physician. The patient should be warmly clad during the walk; but not so heavily as to hinder his movements. In the selection of patients for walking or mild sports, and in the duration and kind of exercise permissible, the thermometer must be the main guide, and whenever feasible the rectal temperature should be taken.

Respiratory exercises I have prescribed, practiced, and taught for years, and the older I grow the more enthusiastic I become concerning their prophylactic and therapeutic value, when judiciously directed and carried out. Recent most careful clinical observations, made under the direction of Dr. Edward O. Otis,² at the Massachusetts State Sana-

of the lungs as necessary for its vitality and resistance; and in tuberculosis the local disease is of minor consequence in comparison to the general vitality.

I would wish to add that in my experience the seemingly slight local harm or temporary pain which the breathing exercises cause in some cases has been more than amply compensated by a general improvement, owing to the increased supply of oxygen, the greater facility of getting rid of tenacious mucus, and the consequently diminution of the dyspnoëic condition often so very distressing.

There is one more important therapeutical effect gained by the practice of wisely directed and carefully watched breathing exercises which is often overlooked, and which I have never seen mentioned in any of the classical treatises on this subject.

Even in incipient and early cases of pulmonary tuberculosis a distinct irregularity of the respiratory movements can often be observed. With the gradual invasions of the pulmonary tissue by the tuberculous process the respiratory muscles seem to lose their coordinating power. These phenomena are followed by asymmetry and shrinking of the thoracic muscular wall from disuse. This shrinkage is particularly noticed when there is at the same time retraction as the result of a preceding pleurisy. I know of nothing better to counteract the early tendency to loss of the coordinating power of the thoracic muscles and the subsequent atrophy than carefully graded breathing exercises aided by mas-

² *Boston Medical and Surgical Journal*, July 19, 1906 and *Transactions of the National Association for the Study and Prevention of Tuberculosis*, 1905.

³ *New York State Journal of Medicine*, March, 1907.

sage of all the anterior lateral and posterior muscles of respiration.

I have described the respiratory exercises to which I give preference so often in my textbooks, essays, articles, and lectures,⁴ that I will not burden this little address with the repetition of their description. Besides the deep inhalation and exhalation with the various movements which these exercises demand, I am fond of adding in suitable cases to the

Considering that the amount of tidal air, that is to say, the volume which is inspired and expired in quiet respiration, is only 500 c.c. the complementary air, the volume which can be inspired after an ordinary respiration, 1,500 c.c., and the supplemental or reserve air, the amount which can be forcibly expelled after an ordinary respiration, amounts to 1,240 or 1,800 c.c., one can readily see the value not only of deep breathing, but particularly of this second expiratory effort. In winter this means an additional amount of a thousand cubic inches of fresh pure air entering the system for every six of this kind of respiratory movements.

What class of tuberculous patients may be permitted to walk, take breathing exercises and pursue light winter sports? It is exceedingly difficult to lay down absolute rules, for perhaps in no class of patients is it more essential to individualize than with tuberculous invalids. Yet we may say in a general way, the incipient or early pulmonary patient may walk and take his breathing exercises when he is afebrile, when he is gaining in weight or holding his own in a general way. If too markedly dyspnoic he may try breathing exercises, but he should walk but little.

What is applicable to the use of all exercises is applicable to respiratory exercises as well. Always



FIG. 5. Patient sitting up, the best position for the Massachusetts State Sanatorium, at Brockton, Mass.

ordinary exercises an additional movement by having each respiratory act, that is to say, each inspiration and corresponding expiration, followed by a second forced expiratory effort. This is for the purpose of expelling as much of the supplemental air as possible. This act may be effectually aided by supinating the arms and pressing the thorax with them.

⁴ *Pulmonary Tuberculosis: Its Modern Prophylaxis and Treatment in Special Institutions and at Home.* P. Blakiston's Son & Co. *Tuberculosis as a Disease of the Masses and How to Combat It* (Fourth edition). Frederick P. Firth, 514 East High Street, New York City. *Twentieth Century of Medicine*, xx, Wood & Co., New York City. *Respiratory Exercises.* Lecture delivered before Johns Hopkins Medical School. *Johns Hopkins Hospital Bulletin*, vii, No. 126.

in pure air, never when tired nor to the extent of becoming tired, and of course, highly febrile, acute pleuritic, or very recent hæmoptic patients must not be permitted to take breathing exercises at all.

Skating, tobogganing, and skeeing are perhaps permissible only in a few selected incipient cases. A chronic temperature of 99.5° F. is an indication for rest in the reclining chair in the cold open air, sitting or laying down. When the temperature is 100° or 100.5° F. the recumbent position should be insisted upon. A temperature of 101° F. or more means rest, including mental quiet, in bed in a well ventilated room where there is plenty of pure air

and sunshine whenever possible. The latter class of patients should, however, gradually become accustomed to the open air.

Patients who, owing to their constant high temperature are obliged to remain in bed most of the



FIG. 6. Hark tent with patient resting on metal reclining chair taking the rest cure.

time are greatly benefited by a daily massage when their temperature is lowest and given in a warm room.

We come now to the last, and perhaps the most important feature of aerotherapy for the tuberculous in winter, the sleeping out of doors. To the honor of American medicine it must be said that,

ing rooms, are the ideal. Some sanatoria have very advantageously made use of discarded street cars and lightly built wooden houses, with low verandas for the purpose of open air treatment. For sanatoria with limited means, such devices for the treatment in winter are certainly to be recommended. An illustration of a section of Pine Ridge camp for consumptives at Foster, R. I. (Fig. 9), is a good example of economic construction of a sanatorium.

In the private home, the veranda existing or a porch built for that purpose (Fig. 10), must be arranged so that the patient can be protected from the wind from whatever direction it may come. The sleeping shack is only desirable when it has a compartment which can be heated (Fig. 11). Tents with stoves come last in order of suitability. The canvas, which retains moisture is always a disadvantage. Tents constructed partially of wood and with special arrangements for ventilation are, of course, more suitable. For the consumptive obliged to remain in the city, Bull's aerarium (Figs. 12 and 13), or my modest invention called the *window tent*, are perhaps best suited for outdoor sleeping. Bull's aerarium is a double awning attached to the outside of the window with a special ventilation arrangement. The head of a cotbed is put through the door and thus the patient's head rests out of doors.

My own window-tent, the latest model of which I have the honor to present to you to-day, consists of an awning which instead of being placed outside of the window, is attached on the inside of the room. It is so constructed that the air from the room cannot enter or mix with the air in the tent. The patient lying in the bed, which is placed parallel with the window, has his head and shoulders resting in the tent (Figs. 14 and 15). By glancing



FIG. 7. Lean-to of Loomis Sanatorium, exterior view.

this important feature of modern phthisiotherapy was first inaugurated by the American sanatorium physicians, and, if I am not mistaken, by the medical officers in charge of the Adirondack cottage sanatorium and the Loomis institution at Liberty.

What are the requisites to successful outdoor sleeping in winter for tuberculous patients? In the sanatoria the especially built verandas communicating with the bedrooms (as shown in Figs. 2 and 5), or lean-tos⁵ (Figs. 7 and 8), with heated dress-

at the diagram (Fig. 16) it will be seen that the ventilation is as nearly perfect as can be produced with so simple a device. The tent is attached to the frame of an American window, but it does not erected under the doctor's instructions at the Loomis Sanatorium. This lean-to, which Dr. King thinks far better, and I believe justly so, than the "stuffy and damp army tent," is being constructed at a total cost of \$1,830, exclusive of the cost of some curtains. As it will accommodate sixteen patients the cost per patient is only a little more than \$114. With such lean-tos grouped around a central administration building, Dr. King points out, a sanatorium with a capacity for 150 patients, under municipal, county, or State control and designed for early cases among the poor would cost about \$80,000, exclusive of land, or about \$533 per patient; much less than the present cost of housing patients in most sanatoria.

⁵ See also Figs. 8 and 9, and which was

quite fill the lower half. A space of about three inches is left for the escape of the warm air in the room. By lowering the window, this space can be reduced to one inch or less, according to need. On extremely cold and windy nights there need not be left any open space at all above the tent. The patient's breath will rise to the top of the tent, the form of which aids in the ventilation. The tent is constructed of a series of four frames, made of Bessemer rod suitably formed and furnished with hinged terminals. The hinges operate on a stout hinge pin at each end, with suitable circular washers interposed to insure independent and easy ac-

sleeping on his left or right side, so that he has the air most of the time in his face.

Another advantage of the window tent is that it will not attract attention from the outside. The bed being placed alongside of the window will be convenient for a majority of the poor who have small rooms. If, however, the bed must be placed at a right angle to the window, this can be arranged as well. A piece of transparent celluloid is placed in front of the tent to serve as an observation window for the nurse or members of the family to watch the patient if this is necessary. It also serves to make the patient feel less outdoors and



FIG. 8.—Tent to of Loomis Sanatorium, 1907.

tion in folding, and the Bessemer rod being hardened to make a stiff, rigid frame to insure its maintaining the original form.

The frame is covered with extra thick yacht sail twill, properly fitted, and having elongated ends to admit of their being tucked under and around the bedding to prevent the cold air from entering the room. The patient enters the bed and then the tent is lowered over him or, with the aid of a cord and a little pulley attached to the upper portion of the window, he can manipulate the lowering and raising of the tent himself. Shutters or Venetian blinds, whether they are attached on the inside or on the outside of the window, can be utilized in conjunction with the window tent as a screen to intercept the gaze of the neighbors and in stormy weather as a protection. The bed can be placed by the window to suit the patient's preference for

more in contact with his family, as he can, if he desires to, see what is going on in the room. If the bed must be placed at a right angle to the window the observation glass can be put in on either side. It goes without saying that, as a rule, patients should not smoke; when, in exceptional cases, this can be allowed, the danger of the celluloid window becoming ignited must be impressed upon them and the greatest precaution urged. I prefer celluloid to glass for this purpose, because there is no danger of its breaking when the tent is raised and lowered.

If it is necessary to raise the bed to the height of the window sill, this can be done with little expense. If the bed is of iron a few additional inches of iron piping can be attached to the legs by any plumber or one handy with tools; raising a wooden bed can be accomplished with equal facility. If the



FIG. 10. Wide view of a section of Pine Ridge Camp for Consumptives, composed of discarded street cars and lightly built houses, at Foster, R. I.

window-tent is to serve the patient only during the night, the tent can be pulled up (Fig. 17) and the bed moved away from the window during the day, and the window closed. Or the tent can be taken off and put out of the way.

The window-tent, of course, is of the greatest service to the consumptive sufferer in winter, particularly to those whose mode of earning their living compels them to be most of the time indoors during the day. If the patient is feverish, or his stay in bed is advisable, he can spend his entire time in the tent. If the people are poor, and the room where the consumptive sufferer lies serves as living room

for the rest of the family the fact that the well members need not shiver while the patient takes his open air treatment is of vital importance in many respects. While the room will not be quite as warm as if the window was entirely closed, it will be much warmer than if there was no tent in front of the window. Laying aside the economic advantages to a poor family when not obliged to heat more than one room, the patient feels that he does not deprive his loved ones of comfort and warmth and that he is less a burden and hindrance to their happiness. The other members of the family, on their side, feel that they can give the patient all the air he needs and that he need not suffer for their comfort.

Lastly there is quite a little of the suggestive treatment in the employment of the window-tent as a means to accomplish what is otherwise often difficult to attain. Patients who are not infrequently unwilling to open their windows in cold weather can be induced to sleep in the tent with the window wide open, simply because it is something especially designed and made for their treatment.

Permit me now to add what I believe are the advantages of this last and third model of the window

tent over the preceding ones. The first model of this device which I presented to the profession and in the construction of which I had the kind cooperation of the former resident physician at Riverside Sanatorium, Dr. McLaughlin had many defects. It was nevertheless put in practical use by



FIG. 10. House for the poor, built especially for outdoor sleeping at night.



FIG. 11.—Dr. Millet's sleeping shack.

a number of physicians and myself. The second model was in some respects better than the first, but had still numerous defects and like the first was stationary. In the third model which I have the

honor to show you to-day I have tried to overcome all the defects learned through my own experience and that of others in the use of two first types of my tent. The Kny Scheerer Company have kindly incorporated all my suggestions in this latest device, and upon my request have refrained from seeking a patent. I am particularly grateful for this generosity on their part, for the tent will be of greatest service to the consumptive poor unable to avail themselves of sanatorium treatment. Many of them will not even

not even be obliged to raise himself and have his back chilled. But nevertheless the patient should be warmly clad when sleeping outdoors or in the window tent.

A little personal experience which I acquired recently by sleeping outdoors, not at 40° F., but only at 24° F. below zero in the Berkshire Hills, and at a higher temperature but still on very cold nights in the city in my own tent, has taught me a few things about the necessity of being properly dressed and prepared when sleeping outdoors in excessively cold weather. Even warm coverings and night gowns or robes will not keep the body sufficient warm unless one wears closely fitting drawers and undershirt or a union suit. Personally I found that the heavy weight linen mesh is the best for that purpose. It may, however, be that wool is preferable for some. Individualizing is here as essential as in all other things appertaining to phthisiotherapy. To prevent the cold from coming through the mattress from below the bed, particularly when sleeping on the veranda, it is a good thing to place



FIG. 13.—Bull's aerarium, outside view.

FIG. 12.—Bull's aerarium, inside view with awning cut away.

be able to pay the modest price at which the window tent is put on the market, but with the illustrations before them they may have sufficient mechanical skill to imitate the device at very little cost.

The advantages of the last model of my window tent over the former models are greater simplicity and cheapness in construction, greater facility for cleaning and disinfecting, and a method of attachment which permits the removal of the tent from

the window when not in use. Drop infection, i. e., the danger from the expulsion of small particles of bacilliferous saliva during the so called dry cough, is limited to a minimum through the form of the tent and the constant exposure of its interior surface to the air and light, and lastly, by the ease with which the canvas can be taken off the steel frame and washed. In a well constructed window tent it is utterly impossible that there shall

be a draft, and if the patient is provided with a urinal a pocket sputum flask which he can put under his pillow and a bell by the aid of which he can call his nurse or friends acting in this capacity, he will

several layers of newspapers on the wire spring under the mattress, or cover this wire netting entirely with linoleum or oil-cloth. Besides all this the patient must have a sufficient number of blankets to assure his absolute comfort and warmth throughout the night. Still, the coverings should not be so heavy as to press down upon the body and make the patient feel uncomfortable or tire him. The tightly woven blanket is a better protection than the loosely woven one. To the poor, whose disposal of blankets is, alas, often very limited, it may be good advice to tell them to put several layers of newspapers between

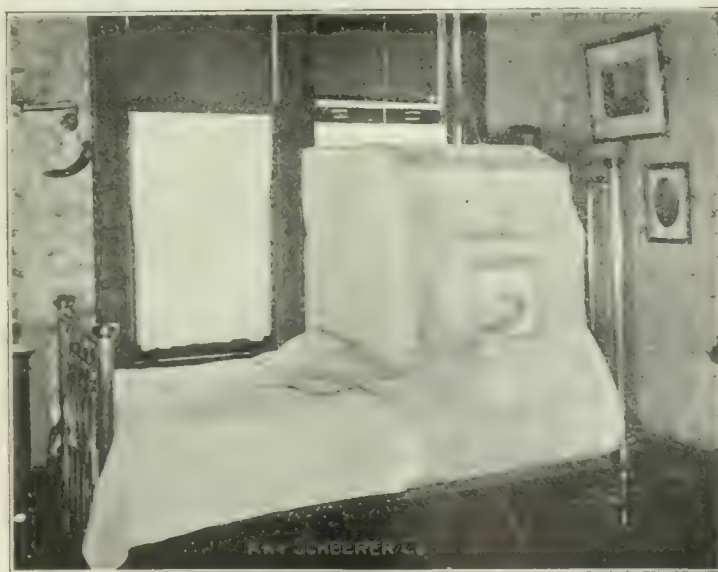


FIG. 14.—Arthur's window tent with awning, interior view.

tion than the loosely woven one. To the poor, whose disposal of blankets is, alas, often very limited, it may be good advice to tell them to put several layers of newspapers between

the coverings. *The Journal of Outdoor Life* of December, 1905, recommends to sew half a dozen layers of papers between two layers of flannel. This certainly will make a cheap, light, and warm cov-



FIG. 15.—Window tent with patient taking the cure; view from the outside.

ering. The feet must be kept warm with the aid of hot water bottles or heated sand bags. In extremely cold weather the patient, while sleeping outdoors on the veranda, porch, or in the window-tent, should dress, so to speak, for the occasion,⁶ protecting his head and ears with a woolen cap, shawl or woolen helmet, such as is shown in Fig. 18. This hood can of course be utilized when taking the rest cure during the day. Some patients will not feel the cold in their face, no matter how low the temperature, except in the tip of the nose. A very simple way to keep this portion of the olfactory organ warm is to put over it a piece of absorbent cotton and fasten it with the aid of a strip of adhesive plaster along the crest of the nose, taking care not to occlude the nostrils.

I am grateful to Dr. Theodore C. Janeway for having called my attention to a good method of protecting the shoulders which in the ordinary arrangement of pillows is insufficient in extremely cold weather. The same method has been described in the *Journal of Outdoor Life*, from which I quote as follows: "In the ordinary arrangement an open

space is almost sure to form between the pillows, the bed clothing, and the shoulders, allowing the cold wind to blow down one's back. A good way to avoid this is to arrange the two pillows in the shape of a narrow V, with the apex at the head of the bed and the other ends reaching down underneath the clothing. With this arrangement

one places his head upon the apex of the V, with his one shoulder between the pillows; the pillows can then be tucked closely up on each side of the chest, the covers lie closely down upon them, and no air space can form. This arrangement has the added advantage of making the pillows support a part of the weight of the clothing."

Some patients will often complain that

the bright light awakens them too early in the morning, and that they have difficulty in going to sleep again. In such instances I counsel the patient to have some lightweight but dark colored material (such as a black lisle thread hose) to put over his eyes. This usually suffices to obviate the inconvenience caused by the bright light.

Patients should always undress and dress in a warm room preparatory to their night sojourn in the cold. When the patient is about to rise from

sleeping in the window tent he should raise it with the aid of the pulley, close the window and wait until the room gets warm, unless there is a warm room adjoining to which he can go and dress. The same precaution should be observed previous to taking a sponge bath or to receiving a massage treatment.

When there is no garden, veranda, or roof, the window tent can also be put into service for the rest cure during the day. The bed is moved away, and the reclining chair put into its place. The latter can be raised to the necessary height by wooden blocks or a platform, and with the aid of blankets and comforters the air from the room can be ex-

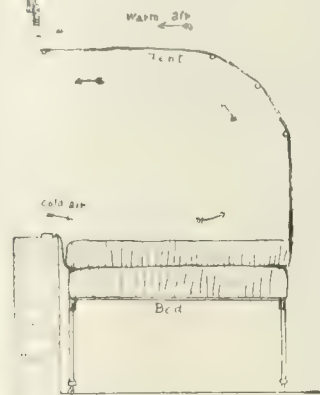


FIG. 16.—Diagram showing ventilation of the window tent.

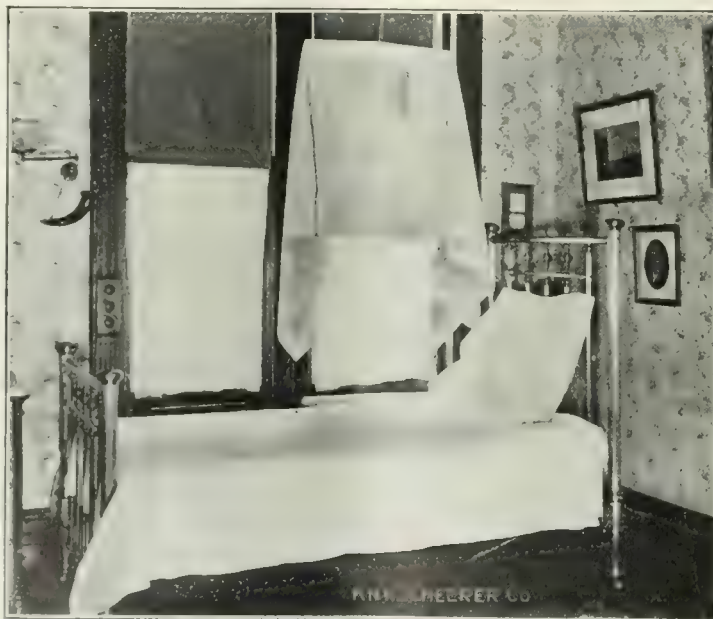


FIG. 17.—Author's window tent when not in use; interior view.

⁶ *Journal of Outdoor Life*, November, 1906.

cluded, and the patient, being in front of the open window, breathes only outdoor air.

In our enthusiasm for aerotherapy in winter let us, however, not forget that there are limitations and that great harm can be done by carrying a good thing to extremes.

The first limitation we should observe is with a newcomer to the sanatorium or the patient in private practice who is not accustomed to outdoor sleeping or even sleeping with open windows. Outdoor rest cure should begin with an hour before and an hour or two after the principal midday meal. Little by little the time for the cure outdoors should be increased. Outdoor sleeping should likewise begin with a few hours at a time. Some patients take to outdoor life easily. For others gentle persuasion and much patience is needed to convince them that

as long as the body feels warm there is no danger, and they will be benefited by the cold air. Nevertheless, even if a seemingly very favorable case becomes chilled after a few hours of outdoor rest in spite of being well covered and protected, the warm but well ventilated room is the place for him and the hardening to the cold must be carried on more gradually. If during the night the cold becomes so intense or it grows so windy



FIG. 18.—Complete outfit for sleeping outdoors in cold weather.

that the patient cannot sleep, it is likewise time to have his bed removed into a moderately warm room and if he sleeps in a window tent he should close his window in part or entirely.

In my own experience I have never noticed that an acute or chronic catarrhal condition of the upper respiratory tract has been brought about or if present had been increased through cold pure air. On the contrary I have always found the condition to be benefited by judicious outdoor sleeping even in very cold weather. It is particularly gratifying to me that this opinion which I have maintained for years has become verified by such eminent phthisiotherapists as Dr. Brown, Dr. King, and Dr. Lyman. The former said in his letter to me referred to before: "An interesting point is that, while many of the patients suffer more or less from catarrh, outdoor sleeping does not seem, on the whole, to increase this trouble, but many, in fact, feel much better." Dr. King, referring to this subject in his letter to me, said: "Almost no catarrhal complications or other untoward symptoms resulted among those sleeping outdoors in this winter's experience."

I am, however, firmly convinced that an acute coryza, and acute grippe in its early stages, is better treated in a moderately warm but well ventilated room than on the open veranda. Of an acute pleurisy with pain and of severe hæmoptysis the same may be said.

Lastly, unless the patient far advanced in the disease wishes it or he thinks he feels better or actually does feel better when he rests outdoors on a cold winter day or night we should never insist upon his doing so. To force a consumptive or a patient suffering with another tuberculous affliction who has but a few weeks to live, and where all possible chances of recovery are gone, to be or sleep outdoors in cold weather against his wish and comfort and inclination is utterly useless, unscientific, and inhumane.

10 WEST NINETY-FOUR STREET.

THE RESULTS OF EXCISION OF THE HIP IN TUBERCULOSIS OF THE JOINT.*

By CHARLES OGILVY, B. A., M. D.,

New York.

Surgeon to New York City Children's Hospitals and Schools, etc.

The results of excision of the hip, in tuberculosis of the joint, depend upon several factors; each of which should in every case be carefully considered.

The extent to which the disease has progressed before the operation is performed will, of necessity, determine in part the amount of bone tissue advisable to be removed. Some authorities have taught that in every instance where there is an involvement of the greater part of the head, later there will follow destruction of the neck, and that therefore an excision should always include the neck and greater trochanter. We have, however, seen cases where the removal of the head only has been deemed sufficient and in which cases the final result has been a more serviceable and longer limb than otherwise would have been the case, other things being equal.

In the majority of cases, however, where excision has been considered necessary, where we find the disease has involved the upper end of the neck and sometimes the acetabulum, a wide dissection of the bony structures involved must necessarily be made, and a complete gives a better result than a partial excision.

Early or Late Excision.—The advisability of early rather than late excision of the joint has long been a disputed question. G. A. Wright, for example, in his earlier work emphasized early excision. "As soon as there is any evidence of external abscess." "Still better results would, I believe, be obtained," he adds, "by operating even before the pus has escaped from the articulation. Timely excision cuts short the disease, saves pain, lessens time of treatment, and gives a better limb" (1). Barker also has advised "early removal of the head of the bone as soon as it is suspected that caseation is advancing in it" (2). Bradley, Mollière, Ollier, and others have advocated early excision (3).

There are, however, on the other hand, a greater number who favor more conservative treatment and late excision. Where the disease is progressing

* Read before the Orthopaedic Section, New York Academy of Medicine, March 15, 1907.

rapidly, where tenderness does not subside under treatment, where the fulness in the groin increases, where starting at night continues, and where the shortening rapidly extends, or where primary acetabular disease is present, or true dislocation has occurred—these are the conditions under which Watson Cheyne advises excision (4).

The general consensus of opinion in America is, I think, well expressed as follows: "Excision in the early cases is not justified when conservative treatment can be carried out for a sufficient time with thoroughness. The removal of the head and neck, moreover, removes from the socket one of the supports on which the trunk rests, and the hip is more mutilated than after the cure by the natural process of gradual absorption, repair, and cicatrization, which leaves a firm though possibly ankylosed joint" (5). Bardenheuer excised the acetabulum in 18 cases. In his opinion the complete resection of the hip joint, including the acetabulum, is a severe but not fatal operation. It is indicated in all cases of acetabular caries where conservative treatment has failed. The best results have been obtained by him in those cases where he has not removed the great trochanter (6).

Other advocates of conservatism regarding excision are König, the late von Bergmann, Volkmann, Kocher, and Billroth. It is interesting to note that Wright has come to consider this operation less frequently called for than he some years ago strongly advised.

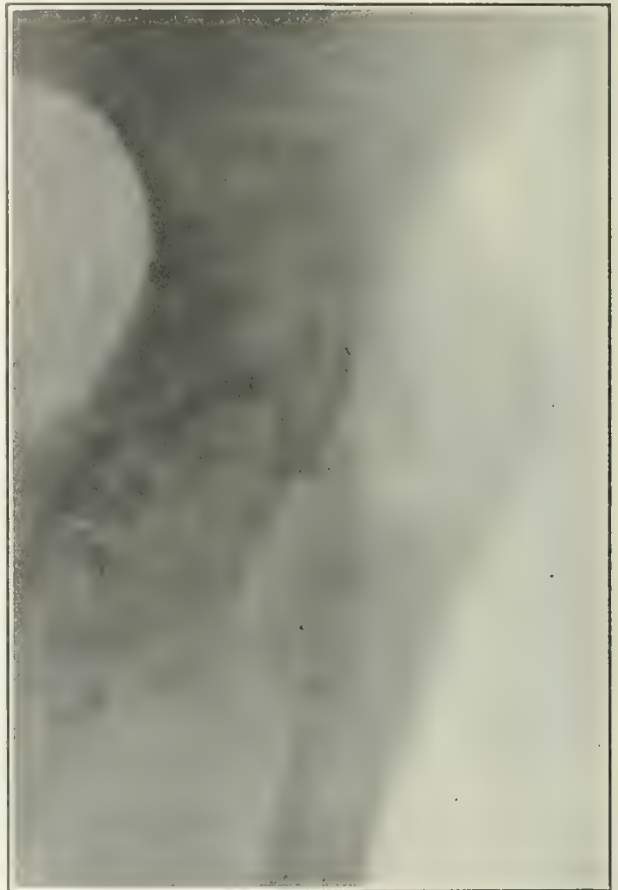
The Age of the Patient is Also of Importance.—Wolff considers that the amount of shortening of the femur after excision was to be considered only to the extent of the part removed (7). This we can confirm in the adult. But we see in many instances of excision in childhood the limb upon the operated side growing shorter than its fellow year by year, and this not altogether by reason of displacement of the femur upwards. Ollier has estimated that the growth of the femur takes place equally at its upper and lower epiphyseal lines until the fourth year of age, and that later, about three times greater at the lower extremity than the upper (8). There is no doubt that the removal of the epiphyses at the upper end of the femur in childhood materially affects the growth of the bone.

The third case which I have presented to-night for example, in November, 1903, had but three and a quarter inches of shortening. This was four years after the operation, the operation having been performed at twelve years of age. In March, 1904, there was four and a quarter inches of shortening, and at the present date, March 15, 1907, there is five and a half inches of shortening. A study of the x ray shows us that this amount of increasing shortening is due in part to the shoving up of the femur, but also to atrophy and lack of development.

Excisions are more frequently performed in childhood for obvious reasons. It is fortunate the operation in adult life is seldom necessary, for the mortality in these cases is considerably higher than in childhood.

The Operation.—The method of operation employed materially affects both the immediate and final results. Time will permit me to but touch upon this important aspect of the subject. In the

first place we cannot emphasize too strongly the importance of the value of time in excising a hip joint. This is to be specially emphasized in the case, as so often happens, of a child who has been suffering for months and sometimes years from tuberculous coxitis and comes to the operation in a very emaciated and anæmic condition, the vitality much below par, and the general condition far from being able to withstand the shock of the excision combined with prolonged anæsthesia. The operation should be performed as quickly as possible, and with but little loss of blood. The anæsthesia should be very carefully administered. Stimulating enemata should be administered in every instance. Too great care



X ray photograph, seven years after operation, in a case in which there is now 5½ inches of shortening. Note the changed relationship and structure of the bones.

cannot be exercised to combat the shock which is always entailed by the operation.

The operation which commends itself to the writer is that of Langenbeck. A longitudinal incision, four to five inches long, is made in the middle of the great trochanter, extending upwards beyond the trochanter for two to three inches, in a line the direction of which runs towards the posterior spine of the ilium. The bone is immediately exposed, the gluteal muscles are separated, and the rotators now exposed are cut transversely. The finger is passed along the neck of the bone. The capsule comes into view as the superior external part of the acetabulum. The capsule is split longitudinally, and the head exposed. The muscles over the trochanter with their attachments are raised with the periosteum by

the scalpel and elevator. The coracoclavicular ligament is incised, the head rotated out and the ligamentum teres cut. The head of the bone can now be pushed through the opening in the capsule, and the excision be completed. This can be done rapidly and with very little hæmorrhage; sometimes without having to ligate a single vessel.

Dr. Lewis A. Sayre emphasized the importance of saving the periosteum (9).

Should there be an unexpectedly severe hæmorrhage deep in the wound, from any one of the arterial branches supplying the joint, obturator, sciatic, internal circumflex, or gluteal, a hæmorrhage, the controlling of which proves impossible without the loss of considerable time, it is better, in my opinion, to pack tightly with gauze, leaving the packing in the wound for several days without disturbing it.

The special benefits derived from this operation are (a) little hæmorrhage; (b) perfect drainage, whether the patient is lying down or in the upright position; and (c) the ease of resection.

Postoperative Treatment.—This differs in no wise from the treatment of hip disease in which operation is unnecessary, as we are still dealing with hip disease. We have only endeavored to remove all the tuberculous material, but it is impossible to say in any case that this has been done, owing to the infiltration of the tissues by the tuberculous process. Certainly in the later cases where this infiltration has extended in and about the joint a complete removal of all the tissues involved in the tuberculous process is impossible.

Extension, immobilization, and protection should be continued for at least a year. The length of time to continue mechanical treatment will depend upon the different conditions presenting themselves in the particular case in question. Passive and active motion of the limb, and later weight bearing, should be begun as soon as possible, that is, as soon as this can be done without causing an inflammatory irritation sufficient to again light up the disease.

In those cases where it has been necessary to continue the brace treatment for three, four, or as in one of the cases I have presented, for five years, the results are not so good; by reason of the poorer nutrition of the limb for this length of time, and the resultant additional muscular and bone atrophy.

Mortality.—The mortality is high. The causes of death are: Shock, hæmorrhage, sepsis, tuberculous meningitis, and general tuberculosis. At least 10 per cent. of all deaths are caused by general miliary tuberculosis. Townsend reports one hundred and one excisions, with a mortality of 51 per cent. These were cases of late excision in children from three to fifteen years of age (10). Lovett reports fifty cases in children where conservative treatment had failed, with a mortality of 44 per cent. (11). Poor reports sixty-five cases of late excision, with a mortality of 43 per cent. (12). In children and adults combined, König has had 47 per cent. of deaths in two hundred and seventy-four cases reported (13). Wright, in advocating early excisions reports one hundred cases with but 15 deaths, five of which occurred more than a year after the operation (14).

Excision is by no means a prevention of systemic infection; on the contrary, it would seem at times,

judging from the number of cases which develop miliary tuberculosis after the operation, that it was a cause rather than a prevention.

Late Results.—Regarding the more remote results of excision, the great amount of shortening is, I think, the most unfortunate sequence. This should be considered in the light of subsequent years, and not in that immediately following the operation. It is difficult to get at these patients ten to fifteen years after they have been discharged as cured, but occasionally they drift back to our observation. A short time ago I saw a boy, sixteen years of age, upon whom an excision had been performed when he was four years old. The limb was a fairly serviceable one, but with a shortening of seven inches. Another patient, a girl, seventeen years old, excision at five years of age, presents a shortening twelve years after the operation of five inches.

You have seen in one of the cases here to-night five and a half inches of shortening seven years after the operation in a boy now nineteen years of age. And another boy of twelve, with four inches of shortening, seven years after the operation. Three of Townsend's cases seen six years after the operation had an average shortening of 3.16 inches. Observations made from year to year prove that there is most frequently a continuous increase in the relative amount of shortening for several years, due to (a) arrest of growth from impaired nutrition; (b) the removal of the epiphyseal centres of growth; (c) the weight bearing strain upon the supporting structures. Ankylosis occurs in a certain proportion of cases. Bony ankylosis without deformity gives a very serviceable limb. Deformity with ankylosis may be corrected subsequently. Close fibrous union with from 20° to 50° of motion is the result most common.

Of the later general utility of the limb, we may expect varying results. The degree of utility varies greatly. The structures forming the joint proper have been removed and the joint consequently is insecure. It is true that a new joint is sometimes formed and the result may be a brilliant one. But in most cases, as is well illustrated by the x ray plates which you have seen of these cases, the upper end of the femur does not rest on the acetabulum, but is above it, upon the side of the ilium.

These skiagraphs (taken by Dr. F. H. Albee) also show the extent to which the destructive process has involved the bone structure; also the comparatively little evidence of new bone formation, and the marked degree of atrophy of the femur.

1. G. A. Wright. *His. Diseases of Childhood*, 1887.
2. Lovett. *Annals of Surgery*, June 9, 1888.
3. *Annals of Surgery*, June 9, 1888.
4. Watson Cheyne. *Tuberculous Disease of Bones and Joints*, 1895.
5. *Annals of Surgery*, Oct. 1906, p. 128.
6. Bardenheuer. *Festschrift der Akademie für praktische Medizin*, 1906, p. 100. (Annals of the German Society for Surgery, April, 1906.)
7. Wolff. *Berliner klinische Wochenschrift*, 1883.
8. Ollier. *Annals of Surgery*, 1886.
9. Sayre. *Medical Record*, July 28, 1883.
10. Townsend. *Orthopedic Transactions*, x.
11. *Annals of Surgery*, July 1, 1897.
12. Poor. *New York Medical Journal*, April 23, 1892.
13. König. *Die Tuberculose der menschlichen Gelenke*, 1899.
14. Wright. *His. Diseases of Childhood*, 1887.

CORNEAL BURN BY DIRECT FLAME.

REPORT OF A SEVERE CASE, WITH REMARKS ON THE PROGNOSIS
AND TREATMENT OF CORNEAL BURNS.*BY MAX TALMEY, M. D.,
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Burns of the eye belong to the most difficult and trying conditions which the ophthalmologist has to deal with. The following case of corneal burn is interesting and instructive and deserves to be made public.

On the seventeenth of September, 1906, I was called in consultation by Dr. O. P. Honegger for a severe injury to the eyes of a boy, five and one half years old. Four days previously several members of the patient's family were sitting on the porch of their beautiful country home, situated in the midst of a magnificent grove, while a chafing dish in which some beverage was prepared over an alcohol flame was in operation on a table nearby. The flame seemed to be extinguished, and the mother of the patient added more alcohol, whereupon an explosion occurred instantaneously, setting the clothes of those nearest afire and

appearing as though uniformly strewn with very minute dust particles. The cornea had the color of gray, dense smoke, it was very opaque, nontransparent, entirely hiding iris and pupil from view. Forcible exposure of the upper part of the eye was desisted from to avoid injury, and only a glimpse was obtained of the upper part of the cornea, which was recognized to be less damaged than the lower one; both parts were separated by a slightly curved boundary line with the convexity upwards (Fig. 1). The attending nurse expressively characterized the appearance of the eye as that of a "boiled onion."

As may be seen from this description the prognosis for the left eye was very serious, and favorable prospect of recovery of sight could not be held out to the distressed father of the patient who had to content himself with the consolation that no damage had been done to the right eye.

The following mode of treatment was instituted: Two to three drops of a 1 per cent. solution of atropine sulphate three times daily for the left eye only; bathing the eye three times daily fifteen to twenty minutes at a time with a tepid solution of boracic acid—(by wringing out a piece of absorbent cotton dipped into the solution, and holding it close to the eyelids without touching them); covering of both eyes in the

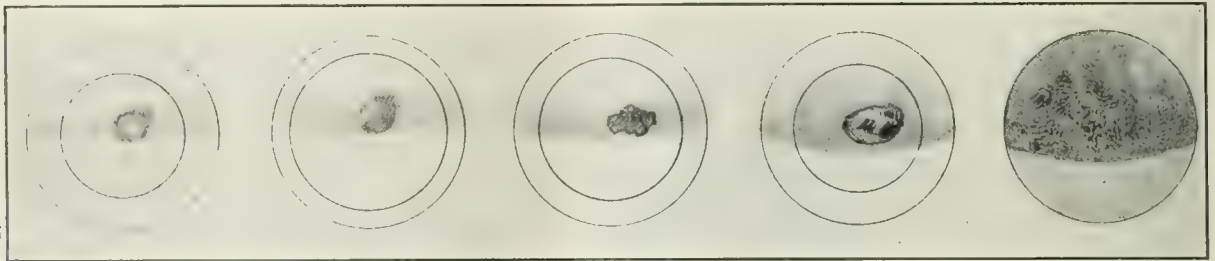


FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

FIG. 5.

spreading terror and confusion among the merry little circle. Three of the family escaped with minor injuries. But the youngest son as well as the mother, who, with her clothes burning and unmindful of her danger made heroic efforts to first save her child, were almost fatally injured, having sustained extensive burns of the third degree over a very large part of their bodies. The family physician being absent on his summer vacation, another physician treated the patients for three days. The former then took charge of the cases. He at once was struck by the fact that the boy kept his eyes constantly closed. After an examination he concluded that a severe eye injury had either been overlooked or not recognized by his predecessor. It was for the eye injury that my advice was sought by the family physician.

September 17. Four days after the accident, I saw the patient for the first time and found the following condition. The eye lids on both sides were singed, the eye lashes partly burnt, and the larger part of face and head, being here and there more severely involved, was bandaged. Owing to intense photophobia the patient kept the eye lids spasmodically closed. On separating the right eye lids there seemed to be a slight haziness over the corneal surface, but the cornea was transparent, and iris and pupil were visible. The sclera was only slightly injected. An entirely different picture presented itself on the left side. It was extremely difficult to separate the somewhat swollen eyelids and to keep them open long enough to satisfactorily observe the damage. The sclera was highly congested. The corneal surface had lost its smoothness and lustre,

intervals with pads of absorbent cotton wetted with the same solution. The patient's room was kept somewhat darkened.

September 21. The condition of the eyes was about the same. The photophobia and the congestion of the sclera were somewhat diminished. The same treatment was continued.

September 24. The photophobia was greatly diminished, making a longer examination of the eyes possible without much annoyance to the patient. The right eye appeared normal. The left cornea which until then had presented a uniform, smoky appearance, showed a demarcation inasmuch as the upper external part of the lower inner quadrant contained an oval area of a saturated turbidness and yellowish white color, surrounded by a thinner smoky opacity. The most peripheral parts had cleared up to the extent of rendering the iris somewhat visible. The upper part of the cornea was clear and transparent, a somewhat convex boundary line separating both parts (Fig. 2). Over the oval area the epithelium appeared eroded. The treatment was not changed except that the instillations of the atropine drops were reduced to twice daily.

September 27. The cornea showed a marked ulcer with irregular borders, where formerly the yellowish white area was situated. The rest of the cornea had cleared up so much that the iris was distinctly visible in its entire circumference (Fig. 3). The treatment consisted now in bathing with hot boric acid solution three times daily half an hour at a time and atropine drops twice daily. Moist permanent bandage was applied in the intervals.

September 29. Ulcus clean, iris well dilated and visible in entire circumference, sclera almost white.

* Read before the Clinical Society of the Yorkville Hospital, March 28, 1907.

October 2. Status the same. No ciliary injection. Atropine omitted on account of patient's disturbed general condition; hot bathing and bandage continued.

October 5. Peripheral parts of cornea were transparent. Over the ulcerated area the cornea appeared flattened. Atropine resumed, hot bathing and bandage continued.

October 8. The flattened part of the cornea healed over, forming a facette (Fig. 4). Same treatment continued.

October 11. The cornea showed a gray band. The facette was situated at the external end of the inner half of the band. Atropine and bandage were now omitted, hot bathings continued (Fig. 4).

October 19. The flattening of the cornea had disappeared. A white macula was visible at the apex of the inner lower corneal quadrant. Laterally to the macula were thinner bandlike opacities (Fig. 5).

In the first two weeks after the accident the patient could not see anything with his left eye. Later he recognized a hand held on the temporal side. On the 19th of October he was able to count fingers at a distance of six feet.

In addition to hot eye baths a course of treatment consisting in massage with yellow mercuric oxide ointment and in penciling with a weak solution of silver nitrate was now instituted and continued for about two months. The dense macula did not change perceptibly its appearance through this treatment, while the bandlike opacities seemed to have become somewhat clearer. Vision, however, improved so much that the patient was able to promptly count and identify fingers at a distance of twenty-two feet and to read numbers of the size of Jaeger No. 7 at close range.

We are evidently dealing with a case of corneal burn by a flame directly striking the eye. The upper part of the cornea protected partly by the upper lid was little affected, while the lower part was severely burnt, the boundary line between both corresponding to the edge of the upper lid. This would hardly be met with in burns by a chemical, since the latter rapidly spreads also under the lids.

The first question confronting the ophthalmologist in such cases is whether or not vision will be saved. To avoid later embarrassment he should be very guarded in his prognosis. Indeed, in the first few days after the accident, at a time when that area of the cornea available for the natural or a subsequent artificial pupil appears gray, densely opaque, and nontransparent, and when a demarcation of the most affected part of the cornea has not yet taken place, it is impossible to predict the result as to vision. In our case the demarcation had not become clear until about ten days after the accident. If the demarcation line shows that the severely injured part of the cornea is centrally situated and of large size much depends upon how deeply the corneal tissues have been injured. Where the epithelium alone is involved, which may be recognized by a semitransparent appearance of the cornea, the prognosis is favorable, the restoration of perfect vision being the rule. If, however, a dense whitish opacity indicates that the deeper corneal layers have been damaged, the prospect of recovery of sight becomes very gloomy. Our instance, however, teaches that the final result, even where the case looks desperate for some time after the injury, may turn out to be surprisingly good, especially when we are dealing with young children, in whom the regenerative power of the corneal tissues is very great.

The chief feature in the treatment of corneal burns by fire must be to avoid irritation as much as possible until the acute stage has passed, and where ulceration has taken place until the latter has healed. No matter what the different chemical preparations should be used. For their application, destroying more corneal tissue, that had been spared by the flame, would impair and retard the healing and tend to produce an abundance of cicatricial tissue during the regenerative process. Antiseptic washings also should preferably be avoided because of their irritative effect. Surely a corneal wound caused by fire is from the start not infected, and later infection can readily be obviated by observing the rules of simple cleanliness, by frequently cleansing the eye with boiled water or boracic acid solutions. Where a corneal ulcer appears, a moist bandage is of great service particularly because of its soothing, antiirritative effect. The beneficial action of atropine also is to be attributed to antiirritative effect in keeping the iris at perfect rest. Except for rendering the examination possible and for alleviating unbearable pain present at an early stage the use of cocaine is preferably omitted, since it has an unfavorable effect on corneal erosions and ulcers. I emphasize the necessity of an antiirritative, palliative, very mild treatment, because, owing to the prevalent tendency of our times to overdo things, the practitioner is readily inclined to apply caustics and antiseptics also in corneal burns. For instance, in our case a suggestion had been made by one physician to use quite a strong argyrol solution at the height of the acute stage. Fortunately the suggestion was not accepted by Dr. Honegger, who justly preferred the mild treatment advocated by me.

Irritative treatment is indicated not for the immediate damage caused by the corneal burn, but for its final results, for the maculæ and opacities remaining after erosions and ulcers have healed. The treatment mostly in use is massage with mercury salves which has to be extended for a long time, for many months or even for years now and then interrupted by intervals of rest. Some report good results from the use of tincture of opium. Long continued subconjunctival injections of sodium chloride or bichloride of mercury may be tried in individuals who are not very sensitive. Dionin is reported to clear up, after a few instillations, corneal opacities consisting of exsudates of inflammatory processes, but it may be doubted whether it would have the same effect on corneal opacities due to cicatricial tissue. Some authors advise the abrasio corneæ, to shave off the maculæ with a scalpel, asserting that the loss of substance is thereupon replaced by a more transparent tissue.

In conclusion attention is called to the importance of examining the eyes when children have become the victims of an accident similar to the one described. In our case extensive burns of the third degree over the face, over the whole left arm and leg and the region about the hips caused to the unfortunate child most excruciating pains. His keeping the eyes constantly closed was probably considered to be due to these pains, and no other cause was looked for until our patient finally came into the treatment of an experienced and keen observer. The latter at once sought another explanation for

the continuous blepharospasm, and discovered the real cause to be a severe eye injury for which he called the ophthalmologist in consultation.

12 WEST ONE HUNDRED AND TWENTY-EIGHTH STREET.

SERUM THERAPY AND SERUM DIAGNOSIS IN SYPHILIS.*

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With the great movement of the last decade towards serum diagnosis and serum therapy in infectious diseases, it is only natural that attempts at employing some of the methods which have proved valuable in other diseases would be made in the case of syphilis. Many of these attempts antedate the new period which the discovery of the spirochæta of Schaudinn has inaugurated. Tomassoli, Pellizzari, Richet and Héricourt, and others employing lambs' blood serum, human serum, defibrinated blood, etc., obtained results which in their time occasioned more or less discussion and then passed into the limbo of the forgotten. Their work lacked a foundation in animal experimentation, and their results could be tested only by clinical methods, notoriously an uncertain criterion. The first really important work in an ætiological therapy of syphilis is that of Kraus and Spitzer, who based their method on the theory of the production of antibodies through the injection of large quantities of specific toxines. They practised subcutaneous injections of increasing doses of suspensions of finely divided chancres into patients as soon as possible after their infection with syphilis. These injections provoked no local changes at the site of the injection, but they were followed by a decided change in the course of the syphilis. The experiments were begun before the spirochæta period, and in the earlier cases the treatment was not begun as soon as in the later cases in which the presence of the spirochæta enabled the authors to establish a diagnosis of syphilis without awaiting the development of corroborative symptoms. Of twenty cases treated eleven patients were attacked with secondary symptoms as in the normal course of the disease, two showed only a rudimentary development of secondary lesions, and seven, thirty-five per cent., showed no further symptoms whatever for a period of observation extending in some cases over two years. In view of the fact that secondary symptoms fail to show themselves in only an insignificant proportion of cases in the normal course of syphilis, these results are, to say the least, striking.

Metchnikoff and Roux attempted to produce an immunizing and curative serum from the lower monkeys who, after recovery from their primary lesions, were injected with blood from patients in the florid stage of secondary syphilis. The serum of these monkeys showed a certain preventive action, but only when it was mixed with the virus before inoculation. Injected into an animal at a different spot from that selected for the inoculation or at a differ-

ent time, secondary symptoms developed just as in the control animals; that is, the serum showed no protective action at all. Similarly injections of syphilitic blood into the veins of healthy monkeys, a procedure which has been shown not to cause syphilis, did not produce a serum of serviceable potency. Attempts at producing a vaccine through attenuation of the virus by passage through lower monkeys have been made by Metchnikoff with results of great interest, but of doubtful value. Injections of syphilitic material into a goat were also without result. These failures may well be due to the impossibility of injecting sufficiently large quantities of syphilitic material, and it will probably be impossible to obtain large quantities of syphilitic toxines until we have learned to cultivate the spirochæta on artificial media. Experiments are at the present moment under way with animals normally refractory to syphilis, horse, cattle, etc., in the hope of producing therapeutic sera. As bearing on the question of specific substances in syphilitic blood and incidentally, it may be added, affording testimony to the specific character of the spirochæta, an observation of Hoffmann and Provazek may be mentioned. These authors noticed that the spirochæta in fresh specimens lost their motility and showed a partial agglutination when mixed with serum of syphilitics, while normal serum does not produce this effect, and the motility of the spirochæta has been noted under favorable conditions to continue for a period of three weeks. Two Russian observers (Zabolotni and Maslakovtz, *Roussky Vrach*, March 17, 1907, quoted in *New York Medical Journal*, No. 16, 1907) noted, in addition to agglutination a fragmentation of the spirochæta under the influence of immune sera.

In contrast to the indefinite serotherapeutic results so far attained as a result of the new knowledge of syphilis, it is a pleasure to record a positive achievement in serodiagnosis. The first work in this field comes to us from the laboratory of the Institute for Infectious Diseases and from the hands of Wassermann, Neisser, and Bruck (*Deutsche medizinische Wochenschrift*, No. 16, 1906, page 745). It is the first work which brings syphilis in line with other infectious diseases in relation to the great working hypothesis of immunity, Ehrlich's sidechain theory. They proposed to utilize the method of fixation or anchoring of the complement for the purpose of testing the presence of syphilitic antigens and antibodies in infected individuals.

Knowledge of the details and principles of this method is to so great an extent the exclusive property of comparatively few laboratory workers that I may be pardoned for entering somewhat into an explanation of them. When an animal is injected with the blood of another animal of different species, e. g., a sheep with the blood of a rabbit, the serum of the injected animal acquires after a time the remarkable property of dissolving the hæmoglobin of the red blood corpuscles of the animal species whose blood was used for the injection; that is, the sheep's blood serum in one example when mixed with rabbit blood corpuscles will dissolve out the hæmoglobin contained in them; the sheep serum has become hæmolytic for rabbit blood. Now it may readily be shown that this hæmolytic action depends on the presence of two distinct substances in the sheep serum, one

* Read at a stated meeting of the New York Academy of Medicine, April 18, 1907, as part of a symposium on Recent Advances in the Knowledge of Syphilis.

of which, called the complement, is normally present in all blood and is destroyed by heating to 56° ; the other, known as the amboceptor or immune body, is developed as a result of the injection of the foreign blood, and is resistant to high temperatures. If the sheep serum is heated to 56° before mixing it with the washed red blood corpuscles of the rabbit, hæmolysis does not occur; the sheep blood has been "inactivated," as it is called, by the heating. If, however, to such a mixture of rabbit's blood corpuscles and inactivated sheep serum some normal serum is added, normal serum always containing complement, the sheep serum is thereby reactivated and hæmolysis at once occurs.

A process in a way analogous to the development of hæmolysins in the blood takes place when an animal is subjected to the influence of bacterial substances, either by injection in the laboratory or in the natural way in the course of an infectious disease. The presence of bacterial substances causes the development in the animal's serum of specific immune bodies or antibodies which joined with the complement unite with the bacterial substances and bind them chemically. The possibility of immunity in many diseases depends on the presence of these

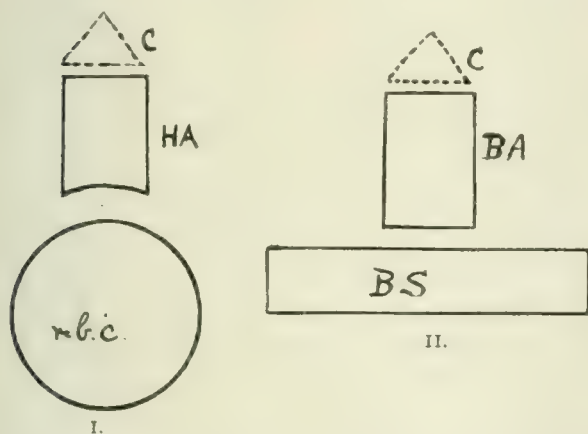
series complement is destroyed by heat before combining the immune serum with the red blood corpuscles, or bacterial substance, respectively. Then fresh complement is added to the mixture of B A and B S, and if B A and B S stand in the appropriate relation to each other, the added complement will be bound in the B A-B S mixture and will not be free to reactivate the B A red blood corpuscles series, when the latter is added to the bacterial mixture. Hæmolysis will therefore fail.

If blood serum (antibody) from any source but a typhoid case, for example, be used for the mixture with typhoid bacilli (antigens), there is no union of complement, antibody, and antigen, because no antibody except the specific antibody of typhoid will unite with the typhoid antigen, and in that case the added complement will remain free to unite with the hæmolytic body subsequently added, and bring about hæmolysis. Conversely if any bacterial substances (antigens) except typhoid be used, the union of complement, antibody, and antigen will fail. We have then in this method, as Neisser and Sachs showed (*Berliner klinische Wochenschrift*, 1905, No. 44), a means of determining the presence of either antibody or antigen.

This method of complement fixation or "anchoring of the complement" was proved to hold true for anthrax, plague, typhoid, diphtheria, tetanus, tuberculosis, etc., and, furthermore, analogous phenomena were shown to incur after injection of foreign albumens, e. g., egg albumen into rabbits, etc. It belongs to the humors of bacteriological chemistry that Schütz (*Medizinische Klinik*, No. 18, 1906) was able by these methods to show the special animal origin of the various meats found in sausage, as horse, dog, pig, etc.

All this goes to prove that we are dealing here with broad biological principles of universal application. It must be added, furthermore, that these determinations are carried out by exact quantitative methods. The precise amount of complement required to reactivate a given hæmolytic serum is first determined. It may happen that this amount is more than sufficient to complement the fluids tested for antibodies or antigens, and there will then be an unused excess of complement which is free to activate the hæmolytic serum; but, as a part of the complement is anchored by the immune serum mixture, the hæmolysis will be incomplete or only partial. In such a case we should have some red blood corpuscles retaining their hæmoglobin, while the supernatant fluid would be colored by the dissolved hæmoglobin of others. That these reactions are not a matter of nice discrimination in which the personal equation of the observer may vitiate the result, but that, on the contrary, they are very obvious and striking will be apparent from a glance at these tubes which I show you. In the first there is no hæmolysis; in the second hæmolysis is complete; in the third it is partial.¹

Based on these principles Wassermann and Bruck (*Medizinische Klinik*, No. 55, 1905) aimed to perfect a method of serodiagnosis. Their first step was to employ bacterial extracts instead of suspensions of bacteria, whereby greater precision was obtained. Second, they showed that it was possible by this method to determine the presence of even the min-



antibodies. Here, again, we have the union of three substances: (1) Toxine or antigen; (2) immune body or antibody or amboceptor; (3) complement.

With these data as a foundation Bordet and Gengore in Metchnikoff's laboratory (*Annales de l'Institut Pasteur*, xv, page 289, 1901) conceived the brilliant idea of determining the presence of specific antibodies by the inhibition of hæmolysis when complement is added to a mixture of inactivated immune serum and the corresponding antigens or bacterial substances, and this mixture of complement, antigen, and antibody then joined to a second mixture of inactivated hæmolytic serum and its appropriate red blood corpuscles; the theory being that the added complement unites with the specific antibody and antigen, and is therefore no longer free to unite with the hæmolytic body and red blood corpuscles, and bring about hæmolysis. A diagram will make this clear.

In I we have a hæmolytic series in which the appropriate amboceptor B A binds complement C and corresponding red blood corpuscles. In II we have a bacteriolytic series in which amboceptor B A binds complement and bacterial substance B S. In each

¹ The tubes shown during the lecture were numbered 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

utest traces of antibodies on the one hand, or antigens on the other. Third, in place of bacterial extracts they employed extracts from infected organs, which would presumably contain the substances in question, and thereby they opened up an entirely new field for serum diagnosis, namely, in the case of infectious diseases the specific microorganism of which could not be artificially cultivated, i. e., protozoan diseases, syphilis, etc.

In applying this method for the determination of specific syphilitic substances Wassermann, Neisser, and Bruck proceeded as follows: Apes were injected with syphilitic material, consisting in a series of cases of the blood of secondary syphilitics or of watery extracts made from primary syphilitic buboes, from condylomata, from organs or bone marrow of hereditary syphilitic infants or foetuses, or of organs or marrow of other apes killed seven or eight weeks after infection with syphilis, and their serum inactivated by heat was mixed with fresh extracts of chancres or syphilitic organs. Such serum was presumed to contain syphilitic antibodies, and the fresh syphilitic extracts the specific antigens. To this mixture some fresh guinea pigs' blood containing complement was now added, and the mixture allowed to stand for a short time to afford an opportunity for the union of antigen, antibody, and complement to take place. Then a second mixture of inactivated hæmolytic serum and appropriate red blood cells was added to the first mixture, and hæmolysis failed to take place, because, of course, the added complement had been anchored by the first mixture and was therefore not free to reactivate the hæmolytic serum. The experiment was a success, and it was thereby definitely established (1) that the immune serum of syphilitics contains antibodies and (2) that the syphilitic extracts contain antigens.

By way of controls it was shown that (1) the immune serum of apes gives the reaction only with syphilitic material of man or apes, not with non-syphilitic material of either; (2) that normal non-syphilitic ape serum is ineffective with syphilitic material; (3) serum of apes treated with extracts from the organs of nonsyphilitics gives no reaction with known syphilitic material. Finally, the immune serum works equally well whether prepared with human or simian syphilitic material, a striking corroboration, by the way, of the identity of human and simian syphilis.

This, then, is a specific serodiagnostic reaction for syphilitic material, which enables us to determine in the laboratory, *in vitro*, the presence of specific antibodies against the syphilitic organism in human serum or in prepared immune serum; and, second, to show the presence of syphilitic substances in a given organ. Thus it has been shown that specific antigens are present in the placenta of syphilitic women, and in a few cases the presence of syphilitic antibodies was shown in the circulating blood of syphilitics. The studies opened up by these experiments are by no means finished. It is important for this work to use an immune serum of high potency, and the method is at the present moment the subject of further study by the German Dutch-East Indian expedition.

Within the last few months two important appli-

cations of this method have been made. Wassermann and Plant (*Deutsch medizinische Wochenschrift*, 1906, page 1769) tested the presence of syphilitic antibodies in the cerebrospinal fluid of paretics obtained by lumbar puncture, and Schütze (*Berliner klinische Wochenschrift*, 1907, page 126) in the cerebrospinal fluid of tabetics. Wassermann and Plant examined cerebrospinal fluid from forty-one cases of paresis and from nineteen control cases not syphilitic. The reaction failed in every one of the nonsyphilitic cases. Of the forty-one cases of paresis the reaction was positive (complete inhibition of hæmolysis) in thirty-two cases, it was partial in four cases, and failed entirely in five cases. That is, the reaction was complete or partial in 88 per cent. of the cases.²

Schütze, after testing the method and corroborating the findings of Wassermann, Neisser, and Bruck, applied it in twelve patients with tabes, between the ages of twenty-two and thirty-five years. In four of these cases syphilis was absolutely denied by the patients, nor were there any corroborative signs of the disease in them; in one case a previous infection was denied, but the patient had a recent syphilitic lesion (hard chancre), which, of course, could bear no relation to his tabes; in the remaining seven cases a previous syphilis was admitted by the patients. In the cerebrospinal fluid of these seven cases as well as in the one with the recent infection syphilitic antibodies were shown to be present; in the four cases in which syphilis was denied no specific substances were found.

If the obvious inference from these two sets of experiments be established by further observations the long standing difference between the two camps of neurologists, as to the relation of syphilis to tabes and paresis, will be settled once for all, and the views of Fournier and Erb and their followers that paresis, and especially tabes, necessarily predicate a previous syphilitic infection will be discarded. We shall have to admit the ætiological importance of syphilis in these diseases, but it will no longer be regarded as their sole cause, and a fresh impetus will thereby be given to the search for other ætiological factors.

The work done in the field of serum diagnosis is too recent and the observations too limited as yet to permit us to draw any very positive conclusions. If the method should be definitely established, or if it can be simplified so that it may be employed with confidence by a large number of workers, a great advance will have been made. On its practical applications, I shall not dwell, they are many and obvious; so, for instance, the method may be used to determine the question whether a given syphilis is cured or is only latent, and I need only point to the subject of brain pathology, where the vital importance of answering promptly the question of the probable syphilitic or nonsyphilitic nature of a suspected tumor is apparent, to indicate another field in which the method of serodiagnosis may prove of great value. We may count ourselves happy who stand here on the threshold of a new era, the future of which looks bright indeed.

64 EAST FIFTY-EIGHTH STREET.

¹ Marie and Levaditi, *Annales de l'Institut Pasteur*, **xxi**, 2, 1907.

SOME POINTS ON THE CHEMISTRY OF MILK.*

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The chief purpose of this brief paper is to point out some of the common and widespread misconceptions regarding the chemistry of cow's milk, and to add a few words regarding some of the dairy problems which have been investigated and some of the unsolved problems in this field.

The following points have been selected for a brief and, necessarily, superficial presentation:

I. What is normal milk and what is its composition?

II. What is the average composition of the normal milk of cows?

III. The relation of casein to albumin in cow's milk.

IV. The action of acids and rennet on casein.

V. Some problems which have been under investigation.

VI. Some unsolved problems.

I. *What is Normal Milk and What is Its Composition?*—By *normal* milk we mean milk produced at an entire milking, that is, the whole milk, as it is produced by a cow living under normal conditions as to health, food, care, and general environment. We can easily show how necessary it is to consider whole and not fractional milkings, in order to know the real composition of milk given by a cow.

1. Here are given results of analysis in case of a cow's milk, when the milk of the entire udder was drawn in four approximately equal parts. These analyses are given solely for illustrative purposes, and are not to be regarded as representing anything but the results obtained with the individual cow under the conditions indicated:

Constituents.	First, second, third, last				Whole milk of same cow at a regular milking.
	fourth. drawn. Per cent.	fourth. drawn. Per cent.	fourth. drawn. Per cent.	fourth. drawn. Per cent.	
Water	88.26	88.57	86.93	84.77	87.80
Solids	9.64	11.43	13.07	15.23	12.20
Fat	0.90	2.60	4.60	7.20	3.80
Casein	2.29	2.25	2.16	2.08	2.24
Albumin	0.61	0.49	0.57	0.61	0.55
Sugar	5.21	5.20	5.15	4.75	5.06
Ash	0.63	0.59	0.59	0.59	0.55

The first portion drawn is fairly good skim milk. Each successive portion increases in fat, the last portion or strippings being extremely rich. This fact suggests that in obtaining samples of breast milk for diagnostic purposes depending upon chemical analysis, it is desirable that the breast should be allowed to become fairly full, and should then be exhausted as completely as possible to furnish a proper sample.

In my own experience with physicians I have found that this point has been completely overlooked. The usual method of taking a sample has been to apply a breast pump whenever it suited convenience and draw as little as would possibly suffice for analysis, say, 1 or 2 ounces. Under such circumstances, it would not be surprising if some highly abnormal results might be obtained, which would wholly mislead one in reaching correct conclusions.

2. Again, milk from different quarters of a cow's

udder varies quite materially in composition, as these analyses show:

Constituents.	Right breast		Left breast	
	fourth. drawn. Per cent.	fourth. drawn. Per cent.	fourth. drawn. Per cent.	fourth. drawn. Per cent.
Water	86.20	86.60	87.60	87.77
Solids	13.79	13.40	12.40	12.23
Fat	5.20	5.70	5.70	5.15
Casein	2.57	2.40	2.40	2.17
Albumin	0.61	0.61	0.55	0.57
Sugar	4.95	4.92	5.03	5.18
Ash	0.63	0.67	0.67	0.60

Applying these results, it would seem desirable that, in taking samples of breast milk for analysis, it would be a wise precaution to sample and examine the milk of each breast separately.

3. We know that normal milk varies greatly in composition, being affected by a great variety of conditions, such as individuality, breed, advance of lactation, length of time between milkings, care of animals, character of food, surroundings, etc. Time does not permit us to go into these particulars. I will allude in detail to only two, viz., variation of composition in different breeds of cows and advance of lactation. These figures are taken from the records of the New York Experiment Station at Geneva, and represent the results of study covering several years.

Constituents.	Holstein.	Ayrshire.	Devon.	Guernsey.	Jersey.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Water	88.20	87.25	85.50	85.10	84.60
Solids	11.80	12.75	14.50	14.90	15.40
Fat	3.36	3.60	4.60	5.30	5.60

Advance of lactation shows a general tendency to increase all the solids of the milk, particularly fat and proteids. In this connection a point of special interest, not commonly recognized, is this: The casein increases with the advance of lactation more rapidly in proportion than does fat. Hence, milk of cows well along in lactation contains more casein in proportion to fat than does milk from the same cows earlier in lactation, which is, according to the data at hand, just the reverse of what happens in human milk. Therefore, it may easily happen that, owing to this change, cow's milk, which at one time agrees with a child, may later fail to do so, even though equally healthful in every other respect.

Variations in normal milk are naturally less in milk derived from herds of cows than in that taken from individual cows. Milk, as it often comes into a city market, varies in composition much less than milk from individuals or from single herds.

When, therefore, we speak of the composition of normal milk, without any qualifying statement, we are dealing with quantitative relations that may be about as definite and fixed as the quotations of the stock market.

What is the object of emphasizing the fact of the variation of the composition of milk? Simply this, that in the minds of not a few physicians, cow's milk is fairly definite and fixed in composition. Correspondence with physicians has impressed me with the correctness of this statement. The practitioner who pins his faith and his practice to such a belief is not in the path of progress.

II. The next point to be discussed is this: *What is the Average Composition of Normal Milk of Cows?*—Some people find much comfort in averages, and yet nothing in the way of figures may lie so profoundly and viciously as an average. In the minds of many, there exists no little confusion as to what a real average is. The average composi-

* Read at a meeting of the Medical Association of the Great City of New York, April 15, 1907.

tion of the milk of a cow or of a herd should really represent all the milk given during an entire period of lactation.

It has been said that during the fourth and fifth months of lactation, a cow's milk represents her average for the entire period; this may be so and it may not. It is quite as likely to be a fiction as a fact.

Many of the average statements of composition of cow's milk occurring in medical works as well as elsewhere are most fearfully and wonderfully made. For example, in a popular medical treatise published in 1907, which is the work of eminent specialists, the average composition of cow's milk is given thus: Fat, 4 per cent.; proteids, 4 per cent.; and sugar, 4 per cent. The chief merit that this statement possesses is the ease with which it can be remembered.

Below is another illustration, representing the statement of a very eminent specialist, whose name I will not mention, since my inclinations and intentions are wholly peaceful. The average composition of cow's milk, as the American physician has to do with it in infant feeding, is: Fat, 3.50 per cent.; proteids, 4.00 per cent.; sugar, 4.30 per cent., etc. Commenting on these figures, another specialist on infant feeding says: "The figures of may be accepted as such an average," meaning an average that may be regarded as authoritative.

This second illustration is even worse than the first, as regards approximation to truth, and does not possess the merit of being so easily remembered. It represents, in fact, the composition of a partially skimmed milk, as I should be compelled to testify, if I were a witness in court under oath to tell the truth. It would be a matter of scientific and psychological interest to know where such averages come from in this day. Perhaps, this average is based solely on New York city milk, a material upon which an agricultural chemist would be unwilling to qualify as an expert. This second average gives fat 3.50 per cent. and proteid 4 per cent. As a matter of fact, it is extremely rare to find a herd of cows in which the proteid is ever as high as the fat; it is not common in individual cows, except perhaps in certain strains of a certain breed. On the average, the ratio of fat to proteids is about 1.2 to 1.

What may we regard, for instance, as the average composition of all the milk produced in New York State? Imagine that it were possible to collect unchanged in one mass all the milk produced in this State in one year and that it were possible to take from this mass for analysis a sample representing the uniform composition of the whole. The composition of such a sample would represent the true average composition. Of course, we can in practice only take samples here and there, in a systematic way, covering considerable periods of time.

The average of about 5,500 American analyses, mostly made at our agricultural experiment stations and under known conditions of production, gives us approximately the following figures:

Water	87.10	Albumin, etc.	0.70
Solids	12.90	Sugar	5.10
Fat	3.99	Ash	0.70
Casein	2.90		

Of course, the truest averages have their limita-

tions of usefulness; but a false average is worse than useless, if it is to be used as a basis for practice in infant feeding.

III. *Relation of Casein to Albumin.*—The next point for consideration is the relation of casein to albumin in cows' milk. The general statement is prominently current in literature to the effect that casein and albumin are present in cows' milk in very constant relative proportions, the amount of casein being five times that of albumin. The speaker has studied this question with a great variety of milk taken from both herds and individual cows. These two constituents vary greatly in their relations to each other. Taking the amount of albumin as one, casein varies all the way from 2.6 to 5.6, the average being about 3.6 (not 5) parts of casein for one of albumin.

IV. *Action of Acids and Rennet on Casein.*—In one of the most valuable reference works on organic analysis, the statement occurs that cheese made from milk by precipitating casein with acid does not differ from that made by means of rennet. Rennet contains an enzyme, which is pepsin or like pepsin. It is true that with acids one can go through the form of making cheese, which may look like cheddar cheese on the outside, if handled by the cheddar process; but the inside will ultimately resemble a grindstone quite as closely as it does a good American cheddar. A very serviceable form of ammunition might be made from the product. Time does not permit a discussion of the points of difference that distinguish acid coagulation of milk casein from rennet coagulation. We are very far from understanding in full just what happens to the milk casein, when it is acted upon by rennet; and the action of acids though better comprehended, is not yet understood in every detail.

V. *Some of the Problems Under Investigation.*—It may be of interest to learn in outline something of our investigations that have been and are being carried on in the laboratory of the New York Agricultural Experiment Station at Geneva.

1. Different breeds of cows and the composition of milk. For about eight years we carried on an investigation of seven different breeds of cows, under definite, well controlled conditions, so that we were able to get our information at first hand. The general object was to learn as much as was possible about the characteristics of the milk of the different breeds under investigation. Primarily, we had in mind the relations of milk to butter and cheese making. But many other points were studied, such as the relations of the different constituents to one another, the size and number of fat globules, the influence of advance of lactation upon various constituents and characteristics of milk, the action of rennet upon different milks and under varying conditions, the influence of feed upon the yield and composition of milk, etc. Many thousands of analyses were accumulated and have formed a basis of inestimable value in studying, from many different standpoints, the composition of cows' milk.

2. The relation of milk to the manufacture of cheddar cheese. This covered, at the time it was undertaken, an entirely new line of work having for its objects a study of the relations of milk constituents to yield, quality, and composition of cheese,

causes and prevention of losses of fat and casein in cheese making. In this connection much work was done with milk delivered at cheese factories. For example, during one season, work was done at fifty different factories, located in eight different counties, and representing the product of over 15,000 cows. One season, we made weekly studies of the milk of each herd delivered at one cheese factory, continuing the work for six months from May 1st to November 1st. In this way we studied the composition of the milk of 650 cows systematically and continuously.

3. The ripening of cheddar cheese. For ten years or more, we have been studying chemical changes connected with the ripening of cheddar cheese. Freshly made cheddar cheese is practically flavorless, insoluble, rubberlike, and not easily digestible. As such cheese ages, it undergoes various changes, passing from an insoluble and flavorless substance into the palatable, more easily digestible and nutritious material we use as food. The term ripening is applied to the general process which embraces these changes and especially the profound changes which occur in the cheese proteids. The subject is a difficult one to study, since several different agents take part in the general operation, among which may be mentioned (a) some acid, usually lactic, (b) rennet pepsin, (c) enzymes present in milk before it is made into cheese, and (d) microorganisms, generally bacteria. The details of this work cannot be considered further here. Many things are not yet settled. It may be interesting to know in addition that each variety of cheese has its own biochemical problems.

4. Casein and its compounds. Inseparably connected with the study of cheese ripening is a study of milk casein (calcium casein) and its compounds. Casein appears to form two different compounds with calcium, one present in milk, the other containing more lime and probably formed when we add lime water to milk. This latter compound is not coagulated by rennet or pepsin.

5. Chemistry of the souring of milk. The ordinary souring of milk has been believed to be a comparatively simple process, but our investigation has shown it to be rather complex. The action of acid on the insoluble phosphates of calcium, on the calcium combined with casein, and on the free casein itself, all have to be considered. In connection with a study of the action of acids upon casein, we have been deeply impressed with one fact which appears not to have been previously observed—that is, the ease with which very dilute acids dissolve casein. We commonly think of 0.2 per cent. hydrochloric acid as very dilute; but this acid, even when ten times as dilute, has marked solvent effect upon casein at body temperature; and acid one hundred times as dilute as 0.2 per cent. has some solvent effect. These facts may be found to have some practical interest in relation to the digestion of certain proteids.

6. Kumyss and carbonated milk. I will refer in addition only to some work which we have been doing in making a study of the chemical changes that take place in milk when made into kumyss and to some work on carbonated milk. Milk charged with carbonic acid under pressure of 75 to 150

pounds makes a pleasant beverage, and appears to acquire some power to inhibit the action of bacteria, at least lactic acid organisms.

VI. Some Unsolved Problems.—In conclusion, I wish to mention briefly three or four of the questions which call urgently for attention in the way of rigid chemical investigation.

1. The action of rennet or pepsin upon the casein of milk. Much study has been made by many investigators, and many facts have been accumulated, but we are still groping in the dark as to the exact action that takes place when rennet or pepsin curdles milk.

2. The chemistry of casein, especially in relation to inorganic salts in milk. For example, citric acid, probably in the form of calcium citrate, is present in milk in appreciable amount. Is this in any way connected with the casein? When sodium citrate is added to milk, just what does it do to the casein? What is the relation of the calcium phosphates of milk to casein? Are they combined with it in any way?

3. The chemistry of paracasein, the product formed by rennet coagulation, also needs a similar study. This is, of course, involved in a study of the action of rennet upon milk casein.

4. Of many, only one other line of work will be mentioned, and that, perhaps, the most important one demanding present attention and really involving the preceding ones mentioned. I refer to the relation between the casein of human milk and the casein of cows' milk. It is common in medical literature to regard these substances as chemically identical, in spite of the fact that there are marked differences in behavior. The latest work (Mann) on the chemistry of the proteids says emphatically that the casein of human milk is certainly different from that of cows' milk. While I cannot qualify as an expert in regard to human milk, I can appreciate the profound importance of the study of its proteids in relation to the proteids of cows' milk. One thing is reasonably certain,—that we cannot hope to utilize cows' milk for infant feeding in an intelligent, really scientific way, until we know more definitely and fully than we now do the chemistry of these two caseins. Present usage is largely empirical and is constantly beset by perplexing difficulties, as some of your leading authorities have assured me.

Conclusion.—In this brief and necessarily superficial presentation, the effort has been made to indicate (1) that there are positive errors in literature regarding the composition of milk, which need correction; (2) that work has been and is being done in other connections which finds practical application to some of the problems of medical practise; and (3) finally, that there yet remain for solution problems of profound and far reaching importance.

Oslerian Epigrams.—It is all moonshine for a doctor to pretend that he can cure all diseases.

If you cannot cure a man tell him so.

Remember that a physician is the teacher and not the slave of a patient.

We work by wit and not by witchcraft.

There are diseases that as yet we have found no remedy for, and we might as well confess it.

There is too much drugging, and there are only a few great drugs worth handling.

REMARKS ON CONGENITAL STENOSIS OF THE
PYLORUS,
WITH REPORT OF A CASE.*BY JOHN J. GILBRIDE, A. B., M. D.,
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The first recorded instance of obstruction at the pylorus occurring in infancy is by Hezekiah Beardsley (*Transactions of the New Haven County Medical Society*, 1788; quoted by Osler, *Boston Medical and Surgical Journal*, March 12, 1903). The patient was a child who had had "puking and regurgitation of milk" from birth, but who, although much emaciated, had lived in spite of this rejection of food until she was five years old. Beardsley says, after having examined the stomach, that "the pylorus was invested with a hard, compact substance or scirrhus, which so completely obstructed the passage into the duodenum as to admit with the greatest difficulty the finest probe."

The next recorded instance of pyloric stenosis in infancy is by Williamson (*London and Edinburgh Monthly Journal of Medical Science*, 1841, p. 23). The child died when five weeks old. In 1842 Dawoski (*Archiv général de médecine*, 1843, 4th Series, ii, p. 93) reported the third case of this condition. This patient likewise died when five weeks old. The early records, however, sank out of remembrance and were only recalled after the description of two cases by Hirschsprung of Copenhagen in 1888. Reports of cases by De Bruin-Kop, Ashby, Gran, Still, Thomson, and many others have appeared since Hirschsprung's paper was published, so that Scudder and Quimby (*Journal of the American Medical Association*, May 27, 1905, p. 1665) have collected the records of 115 cases up to January, 1905. All of those cases had been carefully examined, fifty-five autopsies and sixty operations having been performed.

The disease is, therefore, probably not uncommon, and it is more than possible that many children who have been certified as dying from marasmus, vomiting, or even intestinal obstruction, have in truth been its victims.

The main functional abnormality consists in a tendency to spasmodic closure of the thickened pylorus, which prevents the normal periodic opening to allow of the onward passage of the food.

The essential structural changes of the stomach consist in true hypertrophy of the musculature of the pylorus, stomach, and sometimes, also, of the œsophagus. There is narrowing of the pylorus, dilatation of the stomach and sometimes of the œsophagus. In the fifty-five autopsy reports of infantile pyloric stenosis a tumor, due to the hypertrophy of the musculature, was mentioned as present in every instance. These cases were all treated medically. The tumor varied in size and was likened to a hazelnut, to a walnut, or to a marble, and was unassociated with adhesions of any kind.

The microscopical examination of this hard, movable, circumscribed pyloric tumor shows that the enlargement in every instance is due chiefly to

a hyperplasia of the circular muscular fibres. Only once were the longitudinal muscular fibres found increased in size. The swollen and reduplicated mucous membrane, which in most instances is thrown into longitudinal folds due to the circular constriction of the pylorus, is also hypertrophied. These folds probably obstructed the pylorus, and while they exist normally they are present to a less degree. Although the stenosis may permit of the passage of a steel sound, as has been shown by Cautley and Shaw, yet fluid cannot always be made to pass on account of the swollen mucous membrane. It is thought that the muscular hypertrophy may be primary, a local overgrowth, or secondary, due to disturbance elsewhere. One observation made is that when the child dies at an early age, i. e., three or four weeks, the amount of hypertrophy found may be far greater than could have been produced since birth. However, J. W. Ballantyne, quoted by Robson and Moynihan, says that he has never observed pyloric hypertrophy in the foetus. Hammer says there is also a congenital atresia of the pylorus in which there is no thickening.

Henschel has reported three cases which occurred in the same family, an occurrence which suggested the probability of some congenital dystrophy.

The symptoms are found to depend on the degree of stenosis present. Therefore the cases group themselves into those having complete obstruction and those with partial obstruction. However, the symptoms of the disease are strikingly similar in the majority of the recorded cases. The child at birth is a well nourished, healthy baby of normal weight. Soon after birth, sometimes within the first day or two, sometimes not until two, three, or even four weeks have elapsed, it is noticed that the child begins to vomit after its food. At first it is only after the completion of a meal or towards the end that the food is returned. The quantity vomited is only small, but it increases day by day. It may then be observed that if only a small quantity of food be given it is retained, while if a large amount of food is given it is at once rejected. Alterations in food are of little or no avail in checking the vomiting. A change of food may seem to answer for the first meal or even for a day, but soon the vomiting returns. As time passes the quantity of food that will excite vomiting gradually lessens, until finally even a teaspoonful of milk or water will return. Vomiting is so common in children as to ordinarily arouse but little attention, but when persistent it should call for an examination, and in fact, all cases should be examined. Vomiting associated with constipation in young children, particularly when the condition is not acute, should always arouse a suspicion of the presence of stenosis of the pylorus. The vomited material in this condition is very slightly altered, a little mucus may be present, but in most cases there is little or no evidence of a catarrhal gastritis. The presence of hydrochloric acid in the vomitus is variable. It may be absent, increased, or diminished. Lactic acid is usually absent. Bile, according to the recorded cases, was found present in only two cases. One of these cases was reported by Saunders (*Archives of Pediatrics*, April, 1902, p. 241), and the other by Schwyzer (*New Yorker medizinische Mo-*

* Read before a meeting of the Northern Medical Society of Philadelphia, held on January 26, 1907.

Wochenschrift, viii, (1896, p. 674). Illud has never been vomited.

The bowels are usually constipated, but Nicoll and Hirschsprung report cases which had diarrhœa. The child usually has a good appetite and is eager for its food. There is progressive loss of weight, and a child that weighed from seven to ten pounds at birth may not weigh more than three or four pounds when it is five or six weeks old. Nicoll says that he was deceived in the diagnosis of one case, because the child appeared plump and well nourished. However, the typical hypertrophy of the pylorus was found. The face is pinched and shrunken and the child looks wizened and old. The whole body is parched, and the appearance of the child is a typical marantic one. The tongue and mouth are clean and moist as a rule. The temperature may be subnormal. The child is usually emaciated, with thin abdominal walls, and since the musculature of the stomach is hypertrophied the outline of the dilated stomach may in some cases be seen through the abdominal wall. On inspection a tumor when present may also be seen in the region of the pylorus. The tumor in this condition is movable, usually not larger than a walnut, and feels smooth and hard under the palpating hand. A pyloric tumor may be simulated by an enlarged gland. In making the examination it is best to have all the clothing removed from the child. The child is then laid on a bed or table in a good light, and for the purpose of examination the examiner should assume a squatting position, so as to bring his eyes on a plane with the abdomen of the patient. In this way one is better able to detect abnormalities in the contour of the abdomen. It is while the examiner is in the squatting position that the peristaltic waves are most easily seen when they are present, and they are usually present in stenosis of the pylorus. If the peristaltic waves are not visible they may be brought out by gently tapping on the abdomen over the stomach. The waves are slow, passing from left to right, and follow each other at regular intervals. In those cases there is distention of the stomach with prominence of the epigastrium and a sinking in of the lower abdomen, which is due to the collapsed intestines.

Rolleston and Crofton-Atkins (*British Medical Journal*, December 22, 1900, p. 1768) report cases of pyloric stenosis in which convulsions occurred similar to those seen in cases of gastric tetany.

It appears from the reported cases that a congenital stenosis of the pylorus may not cause any symptoms in early infancy or childhood, but make their appearance after several years or even a longer time has elapsed. However, most of those cases have gastric disturbance from birth. Hansy (*Wiener klinische Wochenschrift*, 1900, 4; *Zentralblatt für Chirurgie*, 1900, 41, p. 1032) operated upon a boy aged eleven years, who had had gastric disturbance from birth. Similar cases have been reported by Selefsh (*Zentralblatt für Chirurgie*, xxvii, p. 81, 1904); and Sonneberg and Rosenheim, *Berliner klinische Wochenschrift*, xxxvi, 32, p. 703, 1899). Mayo Robson operated upon a young man, of twenty-four years, for congenital stenosis of the pylorus.

The case which I have to report was seen in con-

sultation with Dr. Joseph O'Malley on February 7, 1905.

Infant H., male, white, age seven weeks, born in U. S. Family history negative. At birth the child looked healthy, well developed, and weighed ten pounds. When the infant was two weeks old he began to vomit intermittently after feeding. At first only a small amount of vomitus, but the condition grew gradually worse in spite of modification and many changes of food until everything that was taken by the mouth was rejected. It had been necessary to move the bowels by enemata or suppository. The appearance of the child was very marantic, emaciated, skin dry and wrinkled; eyes bright; tongue moist and clean. The weight was five pounds. The examinations of the lungs and heart were negative. Inspection of the abdomen showed epigastric distention and the outline of the dilated stomach, the greater curvature of which extended to the umbilicus, was distinctly seen. Peristaltic waves passing from left to right at regular intervals were also present. The waves were faint at first, but became more marked after tapping on the abdomen in the region of the stomach. The abdominal wall was very thin and wasted, and the pylorus was palpable. A diagnosis of complete stenosis of the pylorus was made, and an operation advised as the only treatment offering any hope. Operation was provisionally accepted, in that medical treatment be employed for a few days and if no improvement occurred then the operation could be performed. Lavage of the stomach and the administration of small amounts of food by the mouth, together with nutrient enemata, brought no improvement and the baby died on February 10, 1905. No autopsy.

Medical treatment may be of benefit in those cases in which there is only a partial stenosis of the pylorus, as has been shown by Shaw, Finkelstein, Senator, Saunders, Stamm, and others. However, when complete stenosis of the pylorus is present the only treatment of value is surgical intervention. This should either enlarge the pylorus or establish a new communication between the stomach and intestines.

Scudder and Quimby give the results of the sixty operations which were performed on the fifty-nine patients referred to:

	Re-	Mortality
	covered.	Died. Per cent.
Gastroenterostomy	10	47.7
Forst's operation	1	100.0
Pyloroplasty	4	50.0
Pylorotomy	1	100.0
Totals	60	46.5

The surgical results have been very good, in that the mortality was only 46.5 per cent., while all the patients treated medically died.

2412 NORTH SIXTH STREET.

CREAM AND WHOLE MILK CALCULATION

By E. KIRKLAND SHELMERDINE, M. D.,
Philadelphia.

Modified milk mixtures, using a 16 per cent. cream and skim milk as a base, have not proved in my hands as good practically as theoretically. Several years ago, I originated a method of calculating with 16 per cent. cream and skim milk, and thought that I had found a solution of dealing with this important question, but saw that it was almost impossible to get a good skim milk in the warm weather and absolutely impossible to get a certified skim milk. In the larger cities, it is possible to get certi-

fied creams and whole milk, although sometimes these certified products are a delusion and a snare; as for example, one of my patients was buying milk from a reputable firm; for several days the cream did not look right to her; on close investigation, it was found that the driver was in the habit of substituting ordinary cream and pocketing the difference in price. On several occasions dealers have sold certified cream and milk which were left over from the day before. One dealer who was notified to stop leaving his cow products, brazenly told the patient that he could not afford to lose this milk, that it was expensive, and that he had to get his money back. Such conditions are outside of the control of the physician, but such dealers should and ought to be under the control of adequate legislation. The best that we can do in the way of feeding the infants which require to be bottle fed is to prepare our mixtures from as good milk and cream as it is possible to obtain. Up to the present time, the infants are to a certain extent at the mercy of the milk dealers, and if they are dishonest, their dishonesty is often not found out until damage to the child has resulted.

The following method is one which will enable any physician to calculate instantly the relative proportions of cream and milk necessary for any prescribed mixture. Memorization of the four rules is all that is necessary to acquire proficiency in calculating milk percentages. Any intelligent physician who has worked with modified milk will never go back to any other method of feeding; it is true that, owing to poor milk, bad results are sometimes obtained, but this is the result of poor materials and does not bring discredit upon the method.

This method is calculated on the principle of mixing 16 per cent. cream and whole milk to form a primary mixture containing the same proportion of fat to proteids as in the prescribed mixture; then all that is necessary is to dilute sufficiently until the relative prescribed percentages of fat and proteids are obtained. If a 16 per cent. cream is diluted with water the proportion of fat to proteids will always remain the same, 4 to 1, (16 to 4 being the working basis of fat to proteids in 16 per cent. cream).

For practical purposes, we consider milk to contain 4 per cent. of each of fat and proteids; and 16 per cent. cream to contain 16 per cent. of fat and 4 per cent. of proteids. As a matter of fact these proportions are not constant in all milks and creams; but a patient getting milk from a dealer will receive from the herd milk and cream which will average pretty much the same every day. Our object is to increase or decrease the proportions of milk on the percentage basis, according to the needs of the child; as we are striving for good results in our feeding, it is immaterial whether what we call a certain percentage in our records is more or less than the actual amount in the mixture; we increase or decrease the proportions of milk or cream to suit the individual case.

We have two liquids, one containing 16 per cent. fat and the other 4 per cent. fat. Both of these contain 4 per cent. proteids. In regard to the proteids, it is immaterial how much of each we take, as the resulting combination will always contain 4 per cent. proteids; our object is to vary our fat by changing

the relative proportions of cream and milk. By making mixtures containing fat strengths from 4 per cent. to 16 per cent. we can obtain proportions of fat to proteids ranging from 4 of fat to 1 of proteids to 1 of fat to 1 of proteids.

Rule 1:—Divide the prescribed fat percentage by the prescribed proteid percentage, multiply the result by four. The result is the percentage of primary mixture required in individual case.

Rule 2:—From the percentage of primary mixture desired subtract the fat proportion of milk (4 per cent.); from the fat proportion of cream (16 per cent.) subtract the percentage of primary mixture required. The first result is to the second result as the proportion of cream (16 per cent.) is to the whole milk, necessary to make fat percentage of primary mixture required in individual case.

Rule 3:—Multiply the prescribed proteid percentage (used as a whole number) by four. The result gives the number of ounces of primary mixture necessary to be diluted to sixteen ounces.

Rule 4:—Subtract the prescribed percentage of proteids from the prescribed percentage of sugar; multiply the result (used as a whole number) by 1.25¹, which gives, in drachms (heaping teaspoonfuls), the amount of milk sugar to be added to the sixteen ounce mixture.

Examples:—

Fat, 3.75 per cent.; proteids, 1.5 per cent.; sugar, 7 per cent.	
P., 1.5	F., 3.75
1.5	3.75
	2.5
	4
	10 per cent. fat
	desired in primary mixture.
1.5	proteid percentage.
	6.0 ounces of 10 per cent. cream, diluted to 16 ounces, give the prescribed fat and proteid percentage.
	7.0 sugar percentage.
	1.5 proteid percentage.
	5.5 percentage of sugar lacking in mixture.
	1.25
	6.87 drachms of milk sugar to be added to mixture in order to increase sugar to 7 per cent.

Six ounces of 10 per cent. cream and 7 drachms of milk sugar diluted to 16 ounces, give . . . F. 3.75 per cent; P., 1.5 per cent; and S., 7 per cent.

Fat, 2 per cent.; proteids, 0.75 per cent.; sugar, 5.25 per cent.	
0.75	2.00
	0.75
	2.66
	4
	3.00
	4.50
	1.25
	5.62
	6.66
	5.33
	6.66
	— of 3 1.66
	12
	5.33
	— of 3 1.33
	12

Cream, 1 2-3 ounces; milk, 1 1-3 ounces; make 3 ounces of a 10.66 per cent. primary mixture; adding to this 5¾ teaspoonfuls of milk-sugar and diluting with 1 ounce of lime water and enough boiled water to make 16 ounces; gives a mixture containing F., 2 per cent.; P., 0.75 per cent.; S., 5.25 per cent.

637, GERMAN TOWN AVENUE.

REPORT OF A CASE OF MELANURIA.

By FREDERIC BIERHOFF, M. D.,
New York,

Member, Physician, General Dispensary, Dermatological Department; Corresponding Member of l'Association Française d'Urologie, etc.

The occurrence of melanine in the urine is looked upon by various authorities as being of slight clinical importance, and of little or no diagnostic

¹This number really should be 1.28, but the slight difference is immaterial in ultimate results.

value, or, in other words, rather an interesting occurrence than one of significance. It is said to occur in individuals suffering with melanotic sarcoma, or cancer, although it is not necessarily present in all cases of this kind. According to von Jaksch, this pigmentation of the urine may occur also in individuals suffering with wasting diseases.

It may occur in one of two forms: The urine may be dark upon voiding, or it may, in the presence of the chromogen of melanine (melanogen) become dark only after exposure to the air, through the formation of melanine, as a result of the oxydation of the melanogen. Mauthner, Heitzmann, Purdy, and other authors give it only passing mention. The urine, upon being voided, may be of a smoky, blackish tint, looking as though it contained soot, or it may show this color reaction only upon standing for a time. The addition of oxydizing agents, such as ferric chloride, sulphuric acid, or bromine water, brings about a more rapid precipitation of the coloring matter. Under the microscope, the melanine is visible as dark brown, or perfectly black granules, or masses, irregular in shape, and usually of small size.

Nowhere have I seen any mention of the occurrence of melanuria during the course of a gonorrhœa; therefore, the report of a case, coming under my observation, may not be without interest.

CASE.—The patient was a young man, of nineteen, suffering with his first gonorrhœa. At the time he came under my observation, the disease had lasted five weeks, and in addition to the gonorrhœal urethritis, there was present a prostatic abscess, the discharge from which was frankly purulent in character, and contained large numbers of gonococci. Three weeks after having come under my care, and having improved steadily under the application of urethral and vesical irrigations, combined with prostatic massage, the patient, one morning, passed urine which, upon being voided, was found to be of a distinctly blackish, sooty tinge. Microscopical examination of the sediment showed that the black color was caused by melanine, occurring in granules and clumps.

The patient was of medium height, but rather slim and anæmic, and came of a tuberculous family, although he was not tuberculous, so far as physical examination would reveal. One sister had died of pulmonary phthisis, and a younger brother was, at the time, very ill with that disease. Forty-eight hours previously, when I had last seen him, the urine, aside from the occurrence of turbidity due to pus, was normal in appearance. Thirty-six hours previous to my noticing the smoky urine, his brother, during the night, was suddenly seized with a violent pulmonary hæmorrhage, and my patient was awakened from sleep, sent out for a physician, and spent the rest of the night in attempts to be of service to the attending physician, and to the patient. He stated that the entire occurrence had given him a great fright and shock.

The treatment of the gonorrhœa was not interrupted, and no attention was paid, directly, to the melanuria. Within forty-eight hours the visible discoloration of the urine had disappeared. Microscopical examination, however, still revealed isolated melanine granules. Within another forty-eight hours even these were gone, the urine was free of any smoky appearance, and the treatment of the patient's gonorrhœa and prostatitis were continued until a cure resulted.

In all, he remained under observation for six weeks longer, without having shown any return of the melanuria.

51-53 EAST FIFTY-EIGHTH STREET.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in the following list are suggested at frequent intervals. As soon as they have been decided upon, the further questions are as follows:

LXII. *What pharmacopœial preparations should be kept on hand by the general practitioner?* (Closed May 15, 1907.)

LXIII. *How do you treat gonorrhœal epididymitis?* (Answers due not later than June 15, 1907.)

LXIV.—*How do you treat influenza?* (Answers due not later than July 15, 1907.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED) that the answers be short; if practicable, no one answer to contain more than six hundred words.

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of \$25 for the best essay submitted in answer to question LXI has been awarded to Dr. James Porter Fiske, of New York, whose article appears below.

PRIZE QUESTION NO. LXI.

THE TREATMENT OF POTT'S FRACTURE

BY JAMES PORTER FISKE, M. D.,
New York.

The proper treatment of Pott's fracture depends primarily on an appreciation of the condition which goes under that name, combined with a technique based on sound surgical principles. The term Pott's fracture refers to a fracture of the lower end of the leg bones, usually accompanied by an outward displacement of foot and lower fragments. The fibula is broken usually one to two inches above the lower tip. The tip of the internal condyle is broken, or rupture of the deltoid ligament has occurred. The exact site of the lines of fracture vary, but the typical and very evident characteristic of this fracture, namely, outward displacement, is usually present, and has a most important bearing on the treatment. In addition a traumatic synovitis is present. Very briefly, many Pott's fractures are fracture dislocations, consisting of fracture of the lower end of leg bones, outward displacement at the ankle joint, with a traumatic synovitis.

The treatment requires an immediate reduction of all the deformity. It may be necessary to employ an anæsthetic. The foot must be placed in position of inversion; i. e., well turned in, and preferably the foot should be held at a right angle before the fixation apparatus is applied. Every case of Pott's fracture should be treated with the foot in a position of inversion. Plaster of Paris fixation is by far the best, and I prefer the use of the ambulant cast from the beginning, unless there is some contraindication, such as swelling. Over a firm flannel bandage extending from toes to knee, a plaster of Paris cast is

applied, being reinforced about the ankle and at its superior circumference, where it embraces the tuberosity of the tibia. At this point a major part of the weight of body is transmitted to the cast. In favorable cases when properly applied the patient begins to walk with cane or crutch very early. The employment of the ambulant cast requires the greatest care and some experience, otherwise I suggest the use of the simple plaster of Paris cast. Fixation should be kept up for twenty-eight days. At the end of that period, if conditions are favorable, hot and cold baths with massage are employed. If the joint is sensitive it should be strapped with zinc oxide plaster. After removal of cast, if there is any tendency for arch of foot to drop, or if we feel the possibility of development of a weak or pronated foot, we at once raise the inner border of sole of shoe, thus insuring a proper position of the foot during convalescence. Where there is much swelling, we reduce the deformity at once and place the foot in the position described, but in these cases very careful and equal compression is employed, beginning at the toes and extending toward the knee, with elevation of the limb, combined with free cartharsis. In these cases where inspection of the foot and leg is necessary, the Stimson dressing, consisting of posterior and lateral plaster splints, may be employed. Later, when swelling subsides, the ambulant cast may be employed. In a certain number of cases joint thickening with some limitation of function is to be expected, specially in patients past forty, but in most cases we obtain good position combined with good function.

The object of treatment is to obtain not only proper bony union, but a complete restoration of function. To this end we must (1) prevent excessive callus formation by complete and early reduction of all deformity; (2) prevent thickening about the joint by maintaining absolute fixation for at least twenty-eight days; (3) preserve the weight bearing line of the limb by placing and treating the foot in position of inversion; and (4) preserve the arch of the foot by moulding the plaster of Paris dressing about the inverted foot so as to support it.

The treatment may be summed up as follows:

1. All Pott's fractures should be treated with foot in the position of inversion.
2. The best dressing in the majority of cases is one of plaster of Paris—either that of Stimson, where inspection of foot and ankle is necessary, or the ambulant cast where we expect the patient to walk early.
3. The period of absolute fixation is at least twenty-eight days.
4. Later treatment consists in hot douches and massage, or if the joint is sensitive, strapping it for a while.
5. In cases where after removal of the cast there is a tendency toward the pronated foot, the built up shoe, raised on inner side, should be worn.
6. In every case immediate reduction of the fragments is indicated, then if there are complications treat them.

76 WEST EIGHTY-SIXTH STREET.

Dr. Arthur L. Fuller, of Winters, Runnels County, Texas, writes:

The treatment of Pott's fracture, as of all other fractures, resolves itself into reduction of the displacement and immobilization of the limb in such a position as will best facilitate union.

The displacement in Pott's fracture is a backward displacement of the foot combined with eversion; and this is best overcome by sliding the foot forward and then placing it at right angles to the leg and well inverted. This position brings the fragments of the internal malleolus into close apposition, and by a kind of leverage brings the upper end of the lower fragment of the fibula outward into apposition with the upper fragment, also the fragment broken from the external part of the articular surface of the tibia (if this fracture takes place) is brought into position.

The foot should then be immobilized in this position; and in my practice I find this most satisfactorily accomplished by a properly applied plaster of Paris bandage, the ankle being well padded and the bandage applied snugly. The bandage should be applied from the roots of the toes up to four or five inches above the knee, the foot being held firmly in the position described and the knee semiflexed. It is hardly necessary to state that the whole leg should be surrounded by a thin layer of cotton or a flannel bandage before the plaster is applied. The reason for applying the bandage so much higher than is usually advocated is the old rule, that "the joints above and below the seat of any fracture should be immobilized," this immobilization causing the greatest possible rest and immobility of the muscles attached to and surrounding the fractured bone, which is important in keeping the fractured ends in apposition and immovable. If the bandage is carried only to the knee, the patient will at times move the knee, and this movement, if it is ever so slight, will cause some movement of the muscles and consequently of the ends of the bone on each other. It also gives some chance for the muscles of the calf to drag on the calcaneum at each movement of the patient, which tends to a return of the backward displacement.

There are two reasons for fixing the knee in a position of semiflexion rather than straight; first, that it is the most comfortable for the patient, the leg being supported by a pillow under the knee while the patient is confined to bed; and, second, that it produces a more complete relaxation of all the muscles of the leg than that of complete extension, thus lessening the tendency to twitching of the muscles and consequent moving of the ends of the fractured bone on each other.

The patient should be confined to bed for a week or ten days, and may then be allowed to move around with the aid of crutches. The semiflexed position of the knee will then be found to have the advantage of keeping the foot well above the ground.

In following this treatment the limb must be carefully watched for the first twenty-four hours, in order that the bandage may be slit up if any swelling sufficient to obstruct the circulation takes place. This, however, I have never found necessary, as a well fitting bandage is one of the best preventives of undue swelling.

The plaster should be removed in six weeks, when the bone will generally be found in a good state of union.

In this, as in all other fractures, delayed union may occur, from some constitutional disease or diathesis, particularly syphilitis; it is therefore advisable to inquire into such matters and place the patient on proper general treatment for the condition.

Dr. Walter J. Cavanaugh, of Boston, Mass., remarks:

A Pott's fracture may at once be reduced in the following manner: Flex the leg at right angles with the thigh, which relaxes all the opposing muscles, and then make slight extension from the knee and ankle. This method for overcoming muscular contraction usually answers in the majority of cases, but should a Pott's fracture, as it occasionally does, include a fracture of the tibia lower down, occurring in alcoholics, we may experience difficulty. In these cases a division of the tendo Achillis will surely relax the spasm of the muscles and keep fragments absolutely quiet. Having secured relaxation of the muscles, the foot, which is usually luxated outward and everted, must be inverted and placed in its proper position, remembering that in a well formed leg the inner edge of the patella, the inner ankle and inner side of the great toe should be in the same vertical plane. This inversion of the foot not only brings the fragments into apposition, but also relaxes the internal lateral ligament. An assistant should now hold the foot firmly, and a properly fitting posterior splint (a perforated metallic splint answers nicely) is then applied down the calf of the leg and half over the foot. This splint also encloses the sides of the leg and ankle. The leg, ankle, and half the foot should be covered with sheet wadding before the splint is applied. A few circular bands of adhesive plaster retain the splint in place and a carefully applied cotton bandage completes the dressing.

The heel may then be placed upon a pillow, the patient remaining in bed. This posterior splint is absolutely essential in order to prevent a backward displacement, or, in other words, a dropping down of the foot. In anticipation of a nonunion of the bone those patients who have gout, rheumatism, syphilis, scrofula, or tumors of bone should be put on constitutional treatment. Local causes also favor nonunion, therefore at the end of a week or ten days inspect the fracture in order to make certain that no displacement exists. Should it happen that there is displacement it is not too late to remedy it.

During the repair of a Pott's fracture the patient must be kept in bed and not allowed, after a few days, to move about on crutches, as is often done. The reason for this is that complications liable to occur during the repair of broken bones are many, and that law suits are so common for malpractice that physicians in private practice must protect themselves. A wise rule, therefore, to follow is that no adult person should be allowed to move about until there is a fair union, which takes usually one month to six weeks, and very little weight should be put upon the limb for some time longer. There can be no doubt that deformity occasionally takes place in these cases from patients getting up too soon, viz., while union is still fresh, thereby allow-

ing the fragments to gradually yield under the weight of the body.

It must be remembered that cases of Pott's fracture and rupture of the internal lateral ligament of the ankle, together with luxation of the foot outward, are often very difficult to manage, and require a longer confinement than any other simple fracture of the leg; three or four months being necessary in some instances to ensure a sufficient repair and to prevent future deformities.

There are cases in which it is impossible to avoid a little eversion of the foot, whatever the treatment and however long it has continued. Cases have been observed of recurrence of the dislocation after three months' confinement, and likewise the inner malleolus has been exposed by an ulceration, due to a return of the deformity after a fair union had apparently taken place. A good rule to follow is never permit a patient weighing 150 pounds to bear his weight upon a Pott's fracture under three months, and the greater the weight, the longer should be the period of rest.

Dr. Henry B. Hemenway, of Evanston, Ill., observes:

The typical essential lesions in Pott's fracture consist of rupture of the fibres of the ligaments on the inner, and generally anterior, sides of the ankle, the separation of the tibia and fibula at the angle and fracture of the fibula a few inches above the joint. The resulting deformity, aside from the enlargement of the joint, consists of a displacement backward and outward of the foot, with a tendency toward a talipes equinovagum. In this position the injured ligaments are separated as widely as possible and the fragments of the fibula override each other. The deformity must be corrected, drawing the foot forward, and fixing it in partial calcaneovarus position. It is not a matter of great importance which material is used for a splint, but I generally prefer plaster of Paris, because when applied it holds the joint immovable, whereas other bandages may be loosened by the patient or his friends. If, however, there is much synovitis it may be better for a time to use either an internal splint, or the posterior wire splint of Cabot, or the Stimson posterior plaster splint.

The patient should be encouraged to get around on crutches, and if the foot and leg are enclosed in a firm cast, he may be permitted to put the foot upon the ground in walking. Unless there is either evidence of increased congestion, or subsidence of congestion making the cast loose, the splint should not be removed for two weeks. If the dressing selected permits access to the joint, massage may profitably be used almost from the first. After two weeks the dressing should be removed every two or three days, the joint should be carefully massaged, and passive motion gently used. In three or four weeks gentle voluntary movements should be made by the patient.

Before applying any dressing the foot and leg should be thoroughly washed with warm or hot soap suds; antiseptic bath is often advisable, not only to make the region clean, but to make the skin more healthy. I prefer hot water applications to reduce the synovitis. Until the synovitis is reduced somewhat it is generally best to use a right angled inter-

nal splint. A straight internal splint is objectionable, because it favors a posterior dislocation and the consequent equinus position.

In a majority of cases it is not safe to attempt the permanent dressing without the relaxation of a general anæsthetic.

When the foot is used the patient must be careful to put the foot flat upon the ground, and to take steps of equal length. Attempts to favor the injured member in walking upon a plain surface generally increase the strain. Particular care must be taken not to walk upon the toes nor upon the inner side of the foot.

The after care is as important as the treatment for with the weakened tendons deformities are easily produced.

All casts or splints should extend as high as possible and permit free movement of the knee joint.

Therapeutical Notes.

Odontalgia.—Naegeli-Akerbloom uses for toothache:

R Cocaine hydrochloride, }
Liquified carbolic acid, }āā 1.0 gramme;
Glycerin,8.0 grammes.

M. S. Apply on cotton.

Emulsion of Oil of Cade for Bath.—V. Mibelli prescribes the following for baths and poultices:

R Oil of cade,67.0 parts;
Colophony rosin,11.1 parts.

Melt the two ingredients and after cooling add slowly with constant stirring:

Solution of sodium hydroxide (14.37%...21.9 parts.

M.

Morphinated Oil.—The following should be used instead of oil of hyoscyamus:

R Morphine,1.0 gramme;
Oleic acid,10.0 grammes;
Oil of almond,q. s. ad 1000.0 grammes.

M.

Süddeutsche Apotheke Zeitung.

To Remove Silver Nitrate Stains from the Skin.—The *Therapeutische Monatschrift* recommends:

R Bichloride of mercury, }
Ammonium chloride, }āā 10.0 grammes;
Water,80 grammes

M.

The stain is said to disappear immediately.

Erysipelas.—Hecht employs the following in erysipelas:

R Liquified carbolic acid,30.0 parts;
Powdered camphor,60.0 parts;
Alcohol,10.0 parts.

M. S. Externally.

R Iodine,āā 10.0 parts;
Alcohol,20.0 parts.

Sulphurated Bath.—A sulphur bath formula is the subject of a French patent, the composition of which is as follows:

R Alcohol,83.0 parts;
Oil of turpentine,18.0 parts;
Oil of eucalyptus,6.0 grammes;
Sulphurated potassa,14.0 parts;
Glycerin,6.0 parts.

M.

Hæmorrhage from the Intestines.—Robin recommends, in the absence of the solution of gelatin, to be used for injection, or during its preparation, to be given, alternately, every half hour, the following preparations in tablespoonful doses:

A.

R Chloride of calcium, 4.0 grammes;
Syrup of opium, 30.0 grammes;
Distilled water,120.0 grammes.

M.

B.

R Ergotine, 4.0 grammes;
Gallic acid, 0.50 grammes;
Syrup of turpentine, 30.0 grammes;
Distilled water,120.0 grammes.

Journal de médecine, April 21, 1907.

Treatment of Gastric Hyperchlorhydria.—Rabizzi, in place of adopting the present custom of giving atropine by itself to secure inhibition of the secretions generally in cases of hyperchlorhydria, prefers a mixture of several solanaceous tinctures, such as the following:

R Tincturæ stramonii, }
Tincturæ belladonnæ, }āā 5.0 grammes.
Tincturæ hyoscyami, }

M. S. Take twenty drops each morning, and also in the evening, in water.

Gazetta degli Ospedali.

Phosphoric Acid Treatment of Gonorrhœal Spondylitis.—Paul Claisse reports two cases of invasion of the vertebral articulations by the gonococcus, following gonorrhœal rheumatism of other joints. The spine in this affection becomes immovable, and the head sinks forward, owing to the marked posterior curvature. By placing the patient in bed and giving the phosphoric acid treatment, great improvement was obtained, and the patient was able to return to his work, although ankylosis of some of the vertebræ remained.—*Bulletins et mémoires de la Société médicale*, February 7, 1907.

Treatment of Cerebral Tetanus by Antitetanic Serum.—Guirard presented a young man, before the Société de chirurgie, of Paris, who had recovered from an attack of tetanus following a wound in the head. While playing, he had been kicked in the face by a comrade. Five days later the symptoms of tetanus suddenly appeared. An injection of five cubic centimetres of antitetanic serum was given into the spinal canal. Each day subsequently ten cubic centimetres were subcutaneously administered. The patient made a good recovery after twenty-one injections had been given.—*Le Progrès médical*, April 20, 1907.

Lumbar Puncture for Cerebrospinal Meningitis.—Armand Delisle reported to the Société de pédiatrie de Paris a case of typical cerebrospinal meningitis which had been cured by lumbar puncture and warm baths. The cephalorachidian fluid was found to be cloudy, and it contained numerous polynuclear leucocytes. The patient was four and a half months of age. During the first ten days lumbar puncture was performed, and ten cubic centimetres of fluid were withdrawn daily; but without any amelioration. For eight days longer the punctures were continued, but increasing the amount withdrawn to twenty-five c.c. This brought about a rapid diminution of the mental torpor, and the quantity was again reduced to ten c.c., as at the beginning. In

addition, warm baths were ordered to be given, every three hours. A complete cure was obtained in a month. The total quantity of cephalorachidian fluid extracted during the course of treatment amounted to 400 cubic centimetres.—*Le Progrès médical*, April 20, 1907.

A Fatality from Scopolamine-Morphine and Chloroform Anæsthesia.—Rys (*Casepis Ceskyeh Lekaru*, and *Wiener klinische Wochenschrift*, August 12, 1906) reports the following case of death as sequela to the combined anæsthesia, which has had so much vogue recently. A fifteen year old boy, who had lymphomata of the neck, was admitted into the hospital for operation. He was given half of a Pravaz syringeful of a solution of 0.25 gramme of morphine and 0.01 gramme of scopolamine hydrochloride; distilled water, 10 grammes. He went to sleep, but as he reacted to pain another injection was given at the expiration of an hour. The reflexes now disappeared and operation was begun. As he was restless, it was decided to administer chloroform. The operation lasted one hour, during which he was given altogether about five grammes of chloroform. After the operation he slept quietly. Respiration and pulse were good. About fourteen hours from the first injection he had a convulsion and could not be awakened from sleep, and did not react to touch or pain. The corneal reflex was absent, and the pupil reaction was insufficient and sluggish. From time to time convulsions recurred, with disturbed respiration. Temperature was 40.9° C. He was given an injection of tincture of musk and the convulsions stopped. He slept for five hours longer, when his pulse became very weak and rapid. He had an injection under the skin of 500 grammes of physiological salt solution. The pulse became better for a while, but then became weaker, and another subcutaneous injection of salt solution was given, and shortly afterwards, on account of renewal of the symptoms, he received a third injection of salt solution. Subsequently, respiration became weak, but artificial respiration failed to relieve him, and he died twenty-one hours after receiving the first hypodermic injection of the narcotic. The entire amount administered within the hour was 0.001 gramme of scopolamine and 0.05 gramme of morphine. [The proportion of morphine was evidently much larger than was appropriate, and the dose appears excessive for a patient of only fifteen years.]

Phlegmon, After Gunshot Wound of Hand, Treated with Cold Applications.—F. Cayla reports (*Journal de médecine de Bordeaux*, February 10, 1907) a case of a man, thirty years of age, who was shot in the left hand, the bullet passing through the tissues a little below the second interdigital space. The wound was dressed with cyanide solution, and ten cubic centimetres of antitetanic serum were injected in the abdominal region into the subcutaneous tissue. Radioscopy, the following day, revealed pieces of the bullet imbedded in the superior, external aspect of the medius phalanx. Under local anæsthesia with cocaine, an attempt was made to remove the bad granules which were imbedded in the bone, but unsuccessfully, as the analgesia was not sufficient. On the third day the wound looked inflamed, and the epitrochlear gland and the glands

in the axilla were swollen, painful, and tender. The patient had a slight fever. In view of the evident infection of the wound and the phlegmonous appearance, which steadily became more marked, Cayla had a bath made for the arm of cyanide solution, at a temperature of only 6° C. The forearm, which also showed a red line lymphangitis, was placed in the bath for three quarters of an hour. The patient noticed a marked relief from pain, and did not wish to take his arm out at the end of the period. In order to maintain the benefits of this treatment, the arm was covered with compresses wet with cyanide solution, and placed between two vessels filled with ice, and also the same antiseptic. As long as the compresses were kept wet with the cold solution, the patient experienced no pain; the inflammation progressively diminished, and the temperature in the course of a few days came down to normal. The enlarged axillary glands became smaller and gradually disappeared at the end of a week from beginning treatment.

Systematic Method of Treating Acne Rosacea.—The *Journal de médecine de Paris* (February 3, 1907) states that in treating rosacea, it is of primal necessity to modify the condition of the skin of the face and the circulation, and this should be done without fear of provoking too violent irritation. The best means of doing this consists in frictions made every night with a piece of flannel, wet with soft potassium soap, or black soap. This is allowed to dry on the face until morning, when it is to be washed off with warm water. These applications are continued for five days. The skin commences to crack, and the applications become painful after the third day. After the fifth or sixth application, when the skin will no longer tolerate the soap, starch poultices are applied, and soothing lotions or sprays are employed to reduce the irritation. When this has sufficiently subsided, in about a week, the soap treatment is to be again used for five or six days, to be again followed by starch poultices. Most frequently three or four series of such applications are required in order to obtain a good result. In rebellious cases pyrogallic acid may be used, even a blister applied for four or five hours and followed by a starch compress. In addition to the local treatment, the general cutaneous surface should be stimulated by frictions, massage, sulphur baths, but not by steam baths, which might cause congestion of the face. Mustard foot baths, with warm water, are prescribed. A regulated diet, and especially abstinence from wine and alcohol, should be adhered to, for fear of producing a revulsion to the intestines. In order to deplete the vessels through the intestines a pill is given, from time to time, of purified aloes 0.05 gramme (or gr. $\frac{5}{16}$), made up with white soap. Suppositories of aloes may also be used, containing 0.05 to 0.15 gramme (gr. $\frac{5}{16}$ to iiss) made up with cacao butter. The treatment by black soap may be completed by the application of a sulphur lotion:

R Precipitated sulphur, } aa 25.0 grammes;
Glycerin. }

Mix thoroughly and add:

..... aa 25.0 gr.

M. To be carefully applied with a piece of absorbent cotton, during the evening, and this is to be washed off, in the morning, with warm water.

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THE AMERICAN MEDICAL ASSOCIATION.

The American Medical Association is a grand organization. Its members are very numerous, its potentialities are great, and it possesses vast pecuniary resources. It is the wish of every loyal member of the medical profession of the United States that the association may always continue in the enjoyment of its great influence. Among the physicians of the country, however, there are many who fear that the management of its affairs, no matter how well intended, may become so unwise as to invite wreck. The association was organized for the purpose of promoting the progress of medicine and the welfare of all its practitioners, and not for that of enabling any particular set of its members to dominate the consciences or control the acts of their fellow members.

Great empires have fallen to pieces, and the catastrophe has been attributed to unwieldiness, but it occurred only after tyranny had crept in. All great organizations of men should take the lesson to heart. Criticism by members should not be set down as treason. The greatest friends of a corporate body are those who criticize its acts most freely, provided they are honest, and they must be held to be so until their honesty has been disproved. Discussion must not be stifled. If members choose to "stand pat" at the behest of a controlling group, rather than to enter frankly into the consideration of any question that may be raised, they are assisting to invite disaster. The ways of tyrants lead ultimately in one direction only—to the destruction of the tyrants.

The officers of huge financial corporations have often regarded themselves as impregably entrenched, but sooner or later they have been rudely disenchanted when their course has not been upright.

We are not insinuating that the management of the American Medical Association is not all that it ought to be, but we do say this: If at the approaching meeting in Atlantic City a resolution of inquiry is offered in the House of Delegates, the House will be very unwise to table it arbitrarily, as happened in Boston last year. The reorganization, from which so much was hoped when it was consummated, only a few years ago, has indeed brought about the beneficial results that alone were expected by the greater part of the profession, the chief of which is that of freeing the general session from the everlasting speech making with which it had previously been cursed. It appears, however, to have led to new opportunities for subverting the real will of the members. In our opinion, the absolute rule of the House of Delegates and the delegated rule of the Board of Trustees ought to be curbed. The amount of power vested in these bodies at present is dangerous, however conscientious may be the men who compose them, and the danger is intensified if, as is suspected, the real rulers of the association take measures to control the State elections of delegates. If it is to maintain its usefulness, the association must be absolutely purged of all semblance of ring rule.

THE WISDOM OF REFORM FROM WITHIN.

We are by no means alone in the dread that the American Medical Association may find its usefulness impaired, and its influence consequently curtailed, unless it enters upon certain reforms. We know this from the utterances of several of our most respected contemporaries. In particular, since the preceding article was written we have been enabled to quote from the forthcoming May number of *American Medicine*, to the courtesy of the managing editor of which we are indebted for advance proof sheets of the editorial pages of that issue. Rather more than seven pages are devoted to sixteen cogent articles on the affairs of the association. We have space to quote only the summary of Reforms Demanded in the Interests of Progress, as follows:—

1. Verbatim reports of the proceedings of legislative and governing bodies.
2. Itemization and utmost publicity of financial matters.
3. Proper representation in the offices of secretary, of editor, and of business manager by separate individuals, with proper compensation.
4. Nondiscretionary power of the editor, with government by the sections of the published proceedings.
5. The rendering impossible of trades unionism and monopolistic methods.
6. Provision for general secret ballots upon important questions of policy by means of the machinery of the association and its journal, through district and county societies.
7. The extension of the referendum and initiative from the optional legisla-

tive to the popular and obligatory form. 8. In order to protect apparent minorities, placing the vote necessary for both referendum or [and ?] initiative upon a reasonable basis. 9. The rights of individual members must be held inviolate from attack by those in power. 10. The association and its journal must be enjoined from entering into purely commercial competition to the detriment of its [the journal's] professional rivals. 11. No paid agent of the association should be permitted to be a member of, or take part in the deliberations of, the bodies governing or directing his actions or compensation.

What our esteemed contemporary thus says has our entire approval, and the great mass of the profession must, on reflection, come to the same opinion. Of this we feel certain. Even already the new president of the American Medical Association, Dr. Joseph D. Bryant, of New York, has set forth, in his presidential address before the recent annual meeting of the Medical Society of the State of New York, convincing arguments in its support, which arguments are freely cited by our contemporary. If such admonitions are not heeded, there will arise at no distant time a strong man who will set the association free from the oligarchical methods that now dominate it. The House of Delegates can forestall such an occurrence, which would ill comport with the association's dignity. If it should elect to give heed to these matters, as we hope it may, we say, with our contemporary: "May that body have wisdom sufficient for reform from within, lest reform be forced from without."

DR. ROBERT REYBURN'S AUTOBIOGRAPHY.

The story of a long life spent honorably and industriously is always interesting and almost always impressive. In an address entitled *Fifty Years in the Practice of Medicine and Surgery, 1856 to 1906*, Dr. Robert Reyburn, of Washington, now seventy-three years old, gives us a condensed account of his life. He entered the profession at a time when bloodletting, mercury, and antimony were rapidly coming to the end of their sway in therapeutics and only a few years before the rise and mighty advance of Listerism. His personal experience and observation, therefore, enable him to present us with a vivid sketch of the progress of medicine during its most glorious period. But this story has often been told; what adds a peculiar fascination to Dr. Reyburn's narrative is the fact of his professional connection with the cases of two of our murdered Presidents, Lincoln and Garfield. In that of Lincoln his part was not prominent, but in that of Garfield it was. There are many of our readers who will remember the newspaper criticism of Dr. D. W. Bliss, who was the chief of the corps of surgeons that labored to save Garfield's life. Dr. Reyburn nobly defends Dr. Bliss. He says:

The ground taken by Dr. Bliss was that in the President's case it was vitally necessary to keep from him every unfavorable symptom, for by so doing we gave him his only desperate chance of recovery. It must be remembered that

during almost all of his illness he was able to have the newspapers read to him, and he always asked for them every morning. If the slightest unfavorable symptom was mentioned in one of the bulletins, it was instantly telegraphed all over the country, and appeared in every newspaper the next morning. In fact, during the early part of the case he very often read the newspapers himself. We were placed in a very embarrassing position; on the one hand, we did not wish to dishearten our patient by circulating discouraging reports of his condition, and, on the other hand, we wished to do our duty to ourselves and to the people of the whole country, who watched with such intense eagerness every word of intelligence that came from us.

And with regard to the part played by everybody connected with President Garfield's treatment, he gives such gratifying testimony as the following:

The writer knows that he speaks only the truth when he says that no wounded man ever received more tender, loving, and devoted service, not only from his surgeons, but also from the faithful friends who nursed him through his long and weary illness. We gave him this cheerfully and would have sacrificed even our lives for him, if by so doing we could have saved his. We would have done this not only because he was President, but because we loved the man. Poor, patient, uncomplaining, suffering President! How our hearts ached for him; Member of Congress, Senator, President, stricken down at the time when he had received in rapid succession the highest honors his country could bestow, he passed through days, weeks, and months of suffering, through the valley of the shadow of death, to that heavenly country where there is neither sorrow nor suffering nor pain. We cannot understand why such things should be. We can only bow in humble submission to the will of Him who ruleth all things both in heaven and earth, and who doeth all things well.

Dr. Reyburn's address is sure to remain prominent in the medical annals of our times, and his memory to be honored by all coming generations of physicians.

THE INSPECTION OF IMPORTED FOOD PRODUCTS.

When the National Pure Food and Drug Law was under discussion in Congress, one of the chief arguments of its opponents was that its passage would require a number of manufacturing concerns to go out of business. As a matter of fact, all that it does require is that manufacturers shall be honest in labelling their packages and clean in preparing their products. Doolittle (*Journal of the Franklin Institute*, March) reports the remark of the manager of a large manufacturing concern, who said: "We have got to change our business and put it on a scientific basis. We have always used preservatives for the reason that it was the easiest way. It really is the lazy man's method." This, it appears to us, is the true cause of the opposition to a law such as the National Pure Food and Drug Law. Mr. Doolittle, in the article under review, describes some of the difficulties met with in the enforcement of the provisions of the law as developed by the inspection of imported food products. He describes the method of procedure on the piers, in the warehouses, and in the government laboratories.

The laboratory examinations had shown that imported jellies, jams, preserves, and marmalades were made with glucose instead of cane sugar, colored

with coal tar dyes and cochineal, and preserved with salicylic acid. It was exceedingly difficult for some of the English and Scotch manufacturers to discontinue the use of glucose and salicylic acid in their jams and marmalades. They set up the same contention as is commonly heard from our own manufacturers, that glucose was necessary to prevent the crystallizing of the sugar. The department does not prohibit the use of glucose, but it does require that when it is used the fact shall be stated on the label. Consequently, every manufacturer discontinued its use, at least in the products shipped into this country, but no complaints have been heard concerning the crystallizing of the sugar.

Perhaps some of the preservatives are not directly injurious to health in the small quantities employed, but their use enables the manufacturer to resort to products and methods of preparation that are dangerous. The use of chemical preservatives puts a premium on filth and destroys all incentive to cleanliness and scientific principles in the selection and preparation of the products. Doolittle says he thinks it is a true statement that when you find a manufacturer of fruit preserves using preservatives in his product, you will find that his factory, apparatus, or containers are not in a proper sanitary condition. Since the enforcement of the Pure Food Law, jars have been changed in form and scientific methods of sealing adopted. These statements are also true regarding German sausages, which before were preserved with boric and benzoic acids. Now the sausages are put up in sterilized water. In the canned vegetables, sulphate of copper is used to color peas, beans, macedoine, and spinach, and it is necessary that the labels shall show in English words that this substance has been employed. Canned asparagus and mushrooms almost all show small amounts of sulphite, which has been used in the bleaching process. Canned tomatoes are likely to contain salicylic or benzoic acid.

When the inspection of imported food products was first practised, olive oil was found to be extensively adulterated with peanut oil and oil of sesame. At present not an ounce of adulterated olive oil is brought in at the ports where laboratories have been established. The oils are brought over separately, however, and mixed on this side. When the General Food Law goes into effect, it is hoped that this adulteration can be stopped, especially for the oil which enters interstate commerce. The department has had considerable trouble with a product known as liquid eggs. It is composed of broken eggs, with the shell removed, and about two per cent. of boric acid added as a preservative. The goods come mostly from China, and it is understood that they are the eggs of the wild fowls of that region. They are used by the large restaurants and bakeries of the

cities. The Department of Agriculture is to be praised for the excellent work it is doing in endeavoring to secure for the people of the United States pure food products. The only people who can object to the law and its enforcement are such manufacturers as are either lazy or dishonest. The consumer ought not to object, even if his preserved and canned foods cost him a few cents extra.

THE SPIROCHÆTA (?) INTERROGANS.

For some time observers have suspected that both yellow fever and dengue were due to protozoan parasites, on account of a certain periodicity in the manifestations of the disease, and by reason of the blood picture, which closely resembles that of diseases known to be due to protozoa. Schaudinn and Novy have both suggested that the organism would be found to be a spirochæta.

Stimson (*Public Health Reports*, May 3rd), in staining some yellow fever material by the method of Levaditi, found a very definite organism in the kidney. The general appearance of the organism suggested a spirochæta; it was often irregularly curved, some individuals having a regular series of alternate curves, with no other indication of segments. One or both extremities were often bent back in the form of hooks. The length of the organism varied, the longest one observed being 14 micra. The width was estimated at one sixth of a micron. It was stained opaque black, in sharp contrast to the surrounding tissues. It was found in the cells and in the lumina of the uriniferous tubules, but none were observed in the bloodvessels, glomeruli, or interstitial tissue.

While in some fields no organisms were present, in others large numbers were crowded together or scattered individuals were observed. In order to use Levaditi's stain it is necessary that the tissue should be fixed in a solution of formaldehyde. In a kidney fixed in mercuric chloride and acetic acid no stained organisms were found, but structures resembling those described were present in an unstained condition. The organisms were not found in the kidney from a fatal case of malarial disease, although the tissue was properly fixed and stained. Dr. Stimson suggests for the organism the species name of *interrogans*, presumably from its frequent resemblance to an interrogation point, and he seems to assign it to the genus spirochæta.

THE NAVY'S MEDICAL QUARTERLY.

We have received the first number of the *United States Naval Medical Bulletin*, dated April, 1907. The title page sets forth that it is issued for the information of the Medical Department of the service, and that its contents are "limited to professional matters as observed by medical officers at sta-

tions and on board ships in every part of the world and pertaining to the physical welfare of the naval personnel." The first issue contains a preface by the surgeon general of the navy and fifty-three other pages of reading matter, largely pertaining to tropical medicine. Many of the articles are very interesting and important, and we do not doubt that the *Bulletin* will prove of great service to the medical profession in general as well as to the medical officers of the navy.

THE DEATH OF SIR JOSEPH FAYRER.

As we go to press there comes the news of the death of Sir Joseph Fayrer at the age of eighty-three years. As an investigator, as a writer, and as an oral teacher he was prominent for many years. Perhaps his best known work is on *The Thanatopsis of Today*.

Obituary.

AUGUSTUS CHARLES BERNAYS, M. D.,

OF ST. LOUIS.

Dr. Bernays died suddenly, of apoplexy, on Wednesday, May 22nd, aged fifty-three years. He was a native of Illinois. He took his medical degree from the University of Heidelberg, Germany, in 1876. In the following year he passed the examination of the Royal College of Surgeons of England. Soon after that he began practice in St. Louis, where he speedily acquired a high reputation as a surgeon and anatomist. In the course of a few years he became one of the most noted surgeons of the Southwest. He was, in addition, a genial and attractive man.

News Items.

Change of Address.—Dr. Charles S. Bacon, to 756 Sedgwick Street, Chicago.

Camden (N. J.) Medical Society.—Dr. William S. Braden addressed this society on Tuesday, May 20th, on the subject of Vaccination in South America.

A Reception to Professor Gustav Kilian, of Freiburg. will be given by Dr. Wolff Freudenthal, on Tuesday evening, May 28th.

The Detroit College of Medicine.—The thirty-ninth annual commencement exercises of this college will be held at the Detroit Light Guard Armory, on Thursday evening, May 30th.

Buildings for Physicians.—There are being prepared for the exclusive occupancy of physicians, two buildings, situated respectively on West Thirty-sixth and East Forty-eighth streets, Manhattan.

The Two Hundredth Anniversary of the Birth of Linnaeus, the Swedish botanist, was celebrated by the Bartram Society of Philadelphia at the Botanical Gardens of the University of Pennsylvania, on Saturday, May 11th.

The Philadelphia College of Pharmacy is about to offer a course in food and drug analysis, in order to provide men capable of making the examinations necessary for the enforcement of the National Pure Food and Drugs bill.

The American Laryngological, Rhinological, and Otolological Society will hold its thirteenth annual meeting at the New York Academy of Medicine, on May 30, 31, and June 1, 1907, under the presidency of Dr. Wendell C. Phillips, of New York.

The Journal of the Kansas Medical Society.—Dr. G. H. Hoxie has resigned as editor of this journal and Dr. Charles

Stearns has been elected to succeed him. The new issue of the journal will be published on June 1st.

Section in Otology and Laryngology, College of Physicians.—At the regular meeting of this section, held on Wednesday evening, May 15th, Dr. G. Morley Marshall read a paper on "The Treatment of the Acute Otitis Media." Dr. J. B. Beyer read a paper on "The Treatment of Facial and Pharyngeal Tonsillar Disease."

Section in Gynecology of the College of Physicians.—At the regular meeting of this section, held on Thursday, May 16th, Mr. Max Brodel, art instructor in anatomy in Johns Hopkins University, read a paper on "Anatomical Questions of Enteroptosis to Pelvic Diseases." Dr. Henry B. Beyer read a paper on "Shortening of the Gastric Ligaments in Ptoisis of the Stomach."

Scientific Society Meetings in Philadelphia for the Week Ending June 1, 1907.—The following meetings will be held: Tuesday, May 28th, Academy of Natural Sciences; Society of Normal and Pathological Physiology, University of Pennsylvania. Tuesday, May 28th, Philadelphia Neurological Society. Thursday, May 30th, Section Meeting, Franklin Institute.

The Buffalo Academy of Medicine.—The following programme was arranged for a meeting of the Section in Pathology of this academy, held on Tuesday evening, May 21st: (a) Recent Study of Neurofibrils, (b) Degeneration of Posterior Columns in the Spinal Cord, by Dr. Charles L. Lambert, of the Pathological Institute for the New York State Hospital, New York, illustrated with lantern slides.

The Hartford, Conn., Medical Society.—At a meeting of the Section in Surgery of this society, to be held on Monday, May 27th, a reception will be tendered to Dr. William B. Coley, of New York, after which the following programme will be presented: Presentation of patients and specimens: (a) Sarcoma of Liver; (b) Sarcoma of Scapula; address by Dr. W. B. Coley, on The Treatment of Sarcoma with Mixed Toxins.

The Syracuse Academy of Medicine.—The programme arranged for a meeting of this academy, held on Tuesday evening, May 21st, was as follows: The Borderland of Insanity, by Dr. H. G. Locke; Fashion in Our Profession, by Dr. J. W. Eddy, Oswego, N. Y.; Cystoscopy: Its Assistance in Diagnosis, by Dr. A. M. Wose; The Use of Traction in the Treatment of Hip Joint Disease in Children, by Dr. E. J. Wynkoop.

The Alfred Stille Medical Society.—The annual banquet of the Stillé undergraduate medical society of the University of Pennsylvania was held on the evening of Thursday, May 9th. Dr. John H. Musser, acted as toastmaster. Dr. George Dock, of Ann Arbor, Mich.; Dr. E. B. Angell, of New York; Dr. Walter Reynolds, of Atlantic City; and Dr. M. Howard Fussell and Dr. David Riesman, of Philadelphia, responded to toasts.

The New York Pathological Society.—The programme prepared for a meeting of this society, held on Wednesday evening, May 22nd, was as follows: (1) A Case of Acute Lymphatic Leucæmia, by Dr. G. R. Satterlee; (2) A Case of Syphilis of the Heart, by Dr. Janeway and Dr. Waite; (3) A Specimen Showing Rare Sequelæ of Intubation, by Dr. Binford Throne. Paper: on the Nature and Significance of the Negri Bodies in Hydrophobia, by Dr. Ira Van Gieson.

Philadelphia Pathological Society.—At the regular semi-monthly meeting of this society, held on Thursday evening, May 23rd, Dr. W. W. Cadbury and Dr. W. T. Cummins reported a case of mixed cell leucæmia; Dr. W. T. Longcope read a paper on The Influence of Blood Serum on Autolysis; Dr. W. B. Hartzell read a paper on A Further Contribution to the Study of Benign Cystic Epithelioma; Dr. D. J. McCarthy read a paper on Carcinomatosis of the Meninges.

North Branch, Philadelphia County Medical Society.—At the regular monthly meeting of the North Branch of this society, held on Tuesday evening, May 21st, Dr. Henry Hudson read a paper on The Diagnosis and Treatment of Flat Foot; Dr. B. Franklin Royer read a paper on the Clinical Phases of Cerebrospinal Meningitis; and Dr. E. Burvil Holmes read a paper on A Consideration of the Leucocyte and Differential Blood Counts, together with the Bacteriological and Cytological Findings in One Hundred Cases of Cerebrospinal Meningitis.

Philadelphia County Medical Society.—At the regular semimonthly meeting of this society, held on Wednesday evening, May 22nd, Dr. John Cooke Hirst read a paper on The Dilatation of the Parturient Cervix; Dr. W. Wayne Babcock and Dr. George E. Pfahler read a paper on A Conservative Treatment for Sarcoma; Dr. James M. Anders and Dr. J. P. Mann reported A Case of Thoracic Aneurysm Successfully Treated by Wiring; Dr. Judson Daland reported A Case of Aneurysm of the Arch of the Aorta Treated by the Moore-Corradi Method, and Dr. James E. Talley read a paper on The Sulphonal Habit.

The Measure Making the Pasteurization of Milk Compulsory Killed by the New York Aldermen.—After a long debate, on Monday, May 21st, the board of aldermen killed the ordinance making the pasteurization of all milk sold in New York compulsory. The matter has been before the board in one form or another for many months, and when it came up on Monday the whole ground was gone over again by the opponents and proponents of the measure. The members of the board spent the better part of a session, lasting from 11 o'clock until nearly 4, talking about it.

Philadelphia Pædiatric Society.—At the regular meeting of this society, held on Tuesday evening, May 14th, the following cases were presented: Dr. Eleanor C. Jones, an infant with several congenital deformities; Dr. C. F. Judson and Dr. R. O. Clock, a case of pericarditis; Dr. Nathaniel Gildersleeve and Dr. Howard Childs Carpenter, a boy with multiple abscesses and superficial gangrene of the toes, treated by bacterial inoculations; Dr. Alfred Hand, Jr., a boy with Hodgkin's disease; Dr. J. P. Crozer Griffith reported a case of thymus death; and Dr. J. H. McKee showed two brothers with chronic parenchymatous nephritis, upon one of whom Edebohl's operation was performed in 1904.

Meetings of Medical Societies for the Month of June, 1907:

- American Medical Association, Atlantic City, June 4-7.
- American Academy of Medicine, Atlantic City, June 1-3.
- American Association of Medical Examiners, Atlantic City, June 3.
- American Gastroenterological Association, Atlantic City, June 3-4.
- American Proctological Society, Atlantic City, June 3-4.
- American Urological Association, Atlantic City, June 3-4.
- Rhode Island Medical Society, Providence, June 6.
- Massachusetts Medical Society, Boston, June 11-12.
- Maine Medical Association, Lewiston, June 12-14.
- Medical Society of New Jersey, Cape May, June 25-27.

Philadelphia Personals.—Dr. John V. Shoemaker has been elected president of the American Therapeutic Society.

Dr. James Tyson was elected president of the Association of American Physicians, at its meeting in Washington.

Dr. James Blackwood, of New Castle, Pa., and Dr. C. A. McQueen, of Amherst, N. S., are registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

Dr. Albert E. Roussel has been decorated with the purple ribbon, the insignia of the honorary title of *Officier de l'academie*, by the French government, in recognition of his services to the science of medicine.

Dr. Mzyck P. Ravenel was elected one of the vice-presidents of the National Association for the Prevention of Tuberculosis.

Dr. Charles W. Sheppard has been elected assistant physician to the Oncologic Hospital.

Dr. William S. Newcomet has been elected a trustee of the Oncologic Hospital.

The Franklin District, Massachusetts, Medical Society.

—The annual meeting of this society was held at Greenfield on May 14th. Resolutions on the death of Dr. James D. Seymour, of Whately, were adopted. The address by the president, Dr. C. C. Messer, of Turner's Falls, was on the subject: The Conservation of Life. Dr. F. W. Donohue read a paper on Addison's Disease. The election of officers resulted as follows: President, Dr. J. W. Cram, of Colerain; vice-president, Dr. C. L. Upton, of Shelburne Falls; secretary and treasurer, Dr. Clara M. Greenough, of Greenfield; censors, supervising, Dr. N. P. Wood, of Northfield; Dr. C. G. Trow, of Sunderland; Dr. G. R. Fessenden, of Ashfield; Dr. E. G. Best, of Greenfield; and Dr. G. A. Cooke, of Montague; councilors, Dr. Wood, Dr. H. G. Stetson, and Dr. G. P. Twitchell, of Greenfield; nominating councilor, Dr. G. P. Twitchell; committee of trials, Dr. F. E. Johnson, of Erving.

New Stations for the Treatment of Tuberculous Patients.—The Committee on the Prevention of Tuberculosis

of the Charity Organization Society announces that plans have now been perfected for the division of New York city into districts, with a special tuberculosis dispensary in each district to take care of all consumptives applying for this method of treatment. Under this arrangement the patients are able to obtain more individual care from the visiting nurses, which each dispensary employs, and who now work within limited areas, instead of all over the city, as formerly. The following dispensaries have entered into the new plan: Department of Health, Bellevue Hospital Dispensary, Gouverneur Hospital Dispensary, Presbyterian Hospital Dispensary, Harlem Hospital Dispensary, Vanderbilt Clinic, New York Dispensary, New York Hospital Dispensary, and Health Department, the Bronx. Patients are expected to apply to the dispensary nearest their homes.

The Medical Milk Commissions in the United States will hold a conference at the St. Charles Hotel, Atlantic City, N. J., on Monday, June 3, 1907. There will be three sessions: 10 o'clock a. m., 3 o'clock p. m., and 8 o'clock p. m. The main objects of the conference are to determine the scope of the Medical Milk Commission, harmonize its working methods and requirements, and establish uniform standards for certified milk. A number of the most prominent persons identified with the pure milk movement in the United States will take part in the conference. Any member of a regularly organized medical milk commission is by virtue of such membership a member of the conference. The professional experts employed by the various commissions and others are invited to sit with the conference and participate in the discussions. The attendance of every one qualified for membership is earnestly desired as a permanent organization will probably be effected. The programme now being prepared will be mailed at an early date.

The Increase of Alcoholism in France.—According to a despatch to the *Sun* the Paris Academy of Medicine in considering alcoholism in its relation to children listened to a report of a long examination undertaken in Normandy by Dr. Brunon, of Rouen, who said that alcoholism is increasing in that part of France in terrifying proportion. Alcoholic drinks are frequently given there even to suckling babes. When children are ill alcohol is the first remedy given, even in cases of convulsion. Women have particularly taken more and more to alcohol, and this accounts for the increase of alcoholism among children. A century ago Normandy supplied a majority of the army's cuirassiers. To-day France is obliged to reduce the required height, and in Norman regiments alcoholic trembling is frequent among soldiers. Years of campaigning against alcoholic inroads have produced an effect among the bourgeois officers and students. All of these drink less than previously, but the workmen have not heeded the antialcoholic teachings.

The National Confederation of State Medical Examining and Licensing Boards.—The seventeenth annual meeting of this confederation will be held at the Hotel Traymore, Atlantic City, N. J., on June 4, 1907; the afternoon session will be convened at 2 o'clock, the evening session at 8. The following topics are announced for discussion: The Legality of State Medical Examinations and Inter-State Reciprocity in Medical Licensure; The Recognition of Sectarian Medicine by Statutory Law; Therapeutics: The Acme of Medical Art, the Bane of Sectarianism; One Board Laws for the Regulation of Medical Licensure. Definitions: (1) A Reputable Medical College; (2) The Practice of Medicine; (3) Preliminary Training. The Divided Examination for Medical Licensure; The Relative Functions of Degree-Confering and Licensing Bodies; The Qualifications of Medical Teachers; The Qualifications of Medical Examiners. It is hoped that every one present will have something to say, on one or the other of these subjects, and say it!

The Bailey Memorial Hospital at Mount Vernon, N. Y.—As a memorial to her husband, the late James A. Bailey, the circus man, his widow, Mrs. Ruth L. Bailey, has contributed \$100,000 for a memorial hospital at Mount Vernon. It was announced several days ago that Mrs. Bailey had contributed \$10,000 toward the maintenance of the Mount Vernon Hospital, and it was not known until May 20th that in addition to this contribution she had decided to expend at least \$100,000 for a new hospital building next to the present structure, which shall be called the Bailey Memorial Hospital. It is to be the central administration building of the whole hospital corporation. It will be built of stone and will be modern in every detail. Mrs. Bailey has consented also to endow the new memorial hospital, and the

exact amount of this gift is not yet known, but it will assure the perpetuity of the institution and will ensure that the charitable work at Mrs. Bailey's Mount Vernon will be continued in the future. In addition to the contribution of Mrs. Bailey, for the maintenance of the Mount Vernon Hospital, by the will of the late Martin L. Sykes the hospital receives \$5,000.

The Dedication of the Jefferson Medical College Hospital.—In connection with the dedication of the new Jefferson Medical College Hospital the faculty have arranged for a series of clinics, ward walks, and demonstrations on June 8th, 10th, 11th, and 12th, to which visiting physicians are invited. The programme is printed below:

June 8th.

- 9:30 to 11:30 a. m.—Clinic, Frontal Sinus, Prof. Gustave Killian, of Freiburg, and Laryngological Clinic, by Prof. Theodore Gluck, of Berlin.
 9:30 to 11:30 a. m.—Physiological Laboratory, Prof. Albert P. Brubaker.
 12 m. to 2 p. m.—Surgical Clinic, Prof. J. Chalmers Da Costa and guests.
 12 m. to 2 p. m.—Medical Ward Walks, by Prof. H. A. Hare and Prof. James C. Wilson.
 2 to 4 p. m.—Gynecological Clinic, Prof. E. E. Montgomery.
 2 to 4 p. m.—Neurological Ward Walks, Prof. F. X. Dercum.
 4 p. m.—Regional Anatomy (Original White Board Sketches), Prof. George McClellan.
 5 p. m.—Pathological Laboratory, Prof. W. M. L. Coplin.

June 10th.

- 9:30 to 11:30 a. m.—At Maternity, Obstetric Clinic, Prof. Edward P. Davis.
 10 to 11:30 a. m.—Genito-Urinary Clinic, Prof. Orville Horwitz.
 12 m. to 2 p. m.—Surgical Clinic, Prof. John H. Gibbon and guests.
 2:30 to 4 p. m.—Ophthalmological Clinic, Prof. Howard E. Hansell.
 4 to 5 p. m.—Clinical Medicine, Prof. Solomon Solis-Cohen.

June 11th.

- 10 a. m.—Mastoid Clinic, Prof. S. MacCuen Smith.
 11 a. m.—Orthopedic Clinic, Prof. H. Augustus Wilson.
 12 m.—Pediatric Ward Walks, Prof. Edwin E. Graham.
 1 p. m.—Dermatological Clinic, Prof. Henry W. Stelwagon.
 2 p. m.—Laryngological Clinic, Prof. D. Braden Kyle.
 3 p. m.—Ophthalmological Clinic, Associate Prof. William M. Sweet.
 4 p. m.—Gynecological Ward Walks, Assistant Prof. John M. Fisher.

June 12th.

- 10 a. m. to 12 m.—Gynecological Clinic, Prof. E. E. Montgomery.
 12 m.—"Opsonins," Dr. John C. Da Costa.
 12 to 3 p. m.—Surgical Clinic, Prof. J. Chalmers Da Costa.
 3 to 5 p. m.—At Maternity, Obstetric Clinic, Prof. Edward P. Davis.

The Health of the Canal Zone.—During the month of March, 1907, the total population of Panama, Colon, and the Canal Zone was estimated at 95,421. There were 257 deaths, corresponding to an annual death rate of 32.32 in a thousand population. There were eleven deaths from typhoid fever; thirty-two from malarial fever; two from æstivoautumnal fever; two from hæmoglobinuric fever; two from malarial cachexia; two from dysentery; five from amœbic dysentery; four from beriberi; twenty from tuberculosis of the lungs; seventy-five from pneumonia; and two from general tuberculosis. There were four deaths among the white employees from the United States, two from accidental traumatism, one from septicæmia, and one from malarial fever. Among the 1,076 white women and children living at various points along the line of the canal, no deaths occurred. The number of men constantly sick among the employees has been steadily decreasing since August, 1906. During that month the daily morbidity rate was 33.72 in a thousand; in March, 1907, the morbidity rate was 19.4 in a thousand. The Department of Health of the Isthmian Canal Commission is continuing its endeavors to reduce the amount of malaria in the district over which it has control. Drainage operations, filling-in operations, and the extermination of mosquitoes continue with energy. The report under consideration contains a very good example of the efficiency of the antimalarial work. In the Empire district during the month of March a force of from four hundred to six hundred laborers was located in unscreened tents near the low ground known as the Savanas, which is used for building purposes, and, consequently, receives attention from the Department of Sanitation. At the same time there was a force of about twenty men encamped on a hill about three quarters of a mile distant. As this camp was temporary, no antimalarial work was carried on in its vicinity. In five weeks nine men from this camp were sent to the hospital with malaria, or 45 per cent. During the same period from the larger camp on the low ground, where antimalarial work was carried out, only fourteen men were sent to the hospital with malaria, a percentage of 3.4. The

Department of Health issued 106.75 pounds of quinine in December, 1906; 106.75 pounds in January, 1907; 106.75 pounds in February; and 76.78 pounds in March. The last case of yellow fever on the Isthmus was recorded in May, 1905.

Society Meetings for the Coming Week:

MONDAY, May 27th.—Medical Society of the University of New York.

TUESDAY, May 28th.—New York Medical Union; New York Dermatological Society (private); Metropolitan Medical Society of New York (private); Buffalo Academy of Medicine (Section in Obstetrics and Gynecology).

THURSDAY, May 29th.—Brooklyn Society for Neurology.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending May 18, 1907.

	May 18.		May 11.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	56	18	46	9
Smallpox.....	..	..	1	1
Varicella.....	93	..	73	..
Measles.....	630	19	580	16
Scarlet fever.....	469	21	457	20
Whooping cough.....	37	7	107	5
Diphtheria.....	306	32	285	48
Tuberculosis pulmonalis.....	392	196	371	183
Cerebrospinal meningitis.....	28	26	30	18
Totals.....	2,011	319	1,950	300

The Health of Philadelphia.—During the week ending May 11, 1907, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Typhoid fever.....	104	18
Scarlet fever.....	41	7
Chickenpox.....	40	0
Diphtheria.....	73	7
Cerebrospinal meningitis.....	23	10
Measles.....	64	1
Whooping cough.....	26	3
Tuberculosis of the lungs.....	98	56
Pneumonia.....	75	58
Erysipelas.....	19	0
Cancer.....	32	26
Mumps.....	18	0
Septicæmia.....	2	0

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 8; diarrhœa and enteritis, under two years of age, 10; puerperal fever, 11. The total deaths numbered 560, in an estimated population of 1,500,595, corresponding to an annual death rate of 19.40 in a thousand population. The total infant mortality was 108; under one year of age, 87; between one and two years of age, 21. There were 40 still births, 20 males and 20 females. The total precipitation was 1.32 inch. The maximum temperature was 77 degrees, on the 10th; the minimum was 42 degrees, on the 5th.

Statement of Mortality of Chicago for the Week Ending May 11, 1907, compared with the preceding week and with the corresponding week of 1906. Death rates computed on United States Census Bureau's figures of midyear population—2,107,620 for 1907, 2,049,185 for 1906:

	May 11, 1907.	May 4, 1907.	May 11, 1906.
Total deaths, all causes.....	717	764	583
Annual death rate in 1,000.....	17.74	18.90	14.84
Sexes—			
Males.....	428	444	352
Females.....	289	320	231
Age—			
Under 1 year of age.....	142	161	120
Between 1 and 20 years of age.....	51	60	5
Between 20 and 60 years of age.....	300	324	230
Over 60 years of age.....	154	165	134
Important causes of death—			
Apoplexy.....	11	14	10
Brachitis.....	49	50	48
Bronchitis.....	20	21	19
Consumption.....	92	81	55
Cancer.....	31	29	24
Convulsions.....	11	13	10
Diphtheria.....	10	11	8
Heart diseases.....	59	58	37
Influenza.....	5	4	4
Intestinal diseases, acute.....	32	38	26
Meningitis.....	11	9	11
Nervous diseases.....	25	35	27
Pneumonia.....	153	170	109
Scarlet fever.....	10	16	11
Smallpox.....	11	9	8
Typhoid fever.....	6	4	9
Violence (other than suicide).....	35	35	31
Whooping cough.....	8	8	5
All other causes.....	138	160	135

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

1. The Commercial Domination of Therapeutics and the Movement for Reform, By GEORGE H. SIMMONS.
2. The Cure of Unilateral Renal Hæmaturia by Injection of Adrenalin Through a Ureter Catheter, By HUGH H. YOUNG.
3. Strangulated Hernia, By DAVID C. HILTON.
4. Vascular Lesions Occurring Subsequent to Abdominal Section, By W. A. NEWMAN DORLAND.
5. The Action of the Extract of the Suprarenal Gland and the Method and Indications for Its Use, By JOSEPH L. MILLER.
6. Occupation in the Treatment of the Insane, By THOMAS J. MOHER.
7. Tuberculin Test, By C. P. AMBLER.

2. **The Cure of Unilateral Renal Hæmaturia by Injection of Adrenalin Through a Ureter Catheter.**—Young says that great importance should be given to apparently causeless hæmaturia and that it should not be allowed to run on indefinitely without due efforts being made to determine the aetiology. For this purpose bilateral ureter catheterization should always be done. The double ureter catheterization cystoscope of Casper has proved the most effective instrument for the purpose in the author's hands, but the new Nitze instrument is perhaps easier to manipulate. The operation can be done under local cocaine anæsthesia (4 per cent. cocaine in bladder and urethra), generally with little pain and without much difficulty. Enough urine should be collected for a careful urinalysis, and a comparison between the separate specimens and the combined urine voided immediately before catheterization made. He is convinced of the importance of attempting to stop hæmorrhage by the injection of adrenalin through the ureteral catheter. The excellent result which was obtained proved conclusively its therapeutical value in certain cases, and it is practically free from danger. Even in cases where a definite lesion, such as nephritis or renal tumor, may be present the use of adrenalin would not seem to be contraindicated; in fact, it may prove of great diagnostic value. It would seem probable that, in cases of nephritis, if the hæmaturia ceased after the use of adrenalin, a better opportunity would be afforded for carefully examining the urine and determining the presence of a nephritis, and it is possible that the hæmorrhage with its marked weakening effects might completely disappear, even though the nephritis persisted. In the case of renal tumor its use would not be contraindicated, because if the hæmorrhage was due to ulceration of the new growth into the urinary passages it would promptly recur, so that the use of the adrenalin would not greatly delay an exploratory operation to determine the exact nature of the lesion. On the other hand, if a neoplasm was suspected the subsequent ureteral catheterization when the urine is free from blood would give a far better opportunity to study the relative value of the urine from the two sides and by functional diagnosis aid in the recognition of marked renal impairment on the bleeding side, a finding which would be suggestive of tumor.

3. **Strangulated Hernia.**—Hilton remarks that after the diagnosis has been made it should be determined whether it is a case for taxis or not, bearing in mind the following contraindications: (1) When taxis has already been thoroughly tried; (2) when the case is extremely acute and violent; (3) when several days have intervened; (4) when dealing with an irreducible hernia; (5) when stercoraceous vomiting occurs; (6) when there is a suspicion of inflammation or gangrene; (7) when a skilful and clean operation can be immediately performed. Taxis cannot be done thoroughly without a general anæsthetic. Place the patient in

such a position that gravity favors reduction. If an inguinal hernia flex the pelvis and thorax ventrally to relax the anterior abdominal wall. If a femoral hernia the leg of the same side should be partially flexed, adducted, and rotated inward to relax the fascia lata. The tumor should be drawn down in a line with the long axis of the canal transmitting the hernia. Then, while firm, continuous, even pressure is made to direct the contents of the sac in a line perpendicular to the plane of the opening through which they must first pass; traction enough should be made on the sac to draw out the folds into which it may be thrown at the neck. The fingers of one or both hands should be so applied as to mold the part which must first pass the constriction into that form most favorable to its return. Taxis should not exceed ten minutes, for he who persists unduly will be inviting death oftener than relief. If taxis fails, immediate operation should be carried out under aseptic precautions, in order that the hernial canal, the sac, and its contents may be dealt with as they severally require. Following actual relief of strangulation by taxis, other serious conditions may arise. Chief among these are peritonitis and hæmorrhage. Such unfortunate occurrences may be due to direct injury from rough handling of the hernia, or to the fact that necrosis or active inflammation had actually set in before reduction. These conditions are surgical and must be met promptly as the special case demands.

5. **The Action of the Extract of the Suprarenal Gland and the Method and Indications for Its Use.**—Miller reminds us that adrenalin is a remedy which must be employed with great care in all patients with suspected arterial degeneration. In elderly people, both on account of atheromatous arteries and myocardial changes, it is a dangerous remedy. The danger from glycosuria is very slight and may be overlooked. Much more important is the possibility of causing an arterial atheroma. In rabbits it has been found that a single intravenous injection may cause decided changes in the media and its continued use destruction of the muscle fibres and later calcification. It has, furthermore, been shown that these same changes may be produced by administration of large amounts by mouth or subcutaneously. We must not conclude, however, that its use in man with the usual dosage is necessarily attended with the same danger. We have reasons to believe that the rabbit is especially prone to such changes, as an attempt to produce these in some other animals, as dogs and monkeys, have failed. A variety of substances, some of them well recognized therapeutical agents, as barium chlorid, physostigmin, lead, and digalen, will produce these same changes in rabbits, and further experimentation would probably show that this list can be added to. It is probably true, however, that these changes are more readily brought about by adrenalin than by any other substance employed up to the present time. Again, the dosage per kilo, when used subcutaneously, is fifty times our therapeutical dose in man. When we consider that subcutaneously in animals the majority of investigators have never been able to produce vascular changes, it would appear that the danger of the drug in this respect could easily be overestimated. Its continuous intravenous use should be discouraged. It is not probable that a single intravenous injection would cause vascular changes, although it has been shown that this may occur in rabbits; the real danger attending its use, however, is immediate cardiac disturbance, especially acute dilatation.

6. **Occupation in the Treatment of the Insane.**—Moher states his view in this question as follows: 1. Only a small proportion of our patients should be exempt from labor. 2. A careful study should be made of the temperament of each patient before deciding the kind of labor suitable in each case, and the

previous occupation or social condition should not be the only determining factor. 3. The carrying on of this work successfully depends in a large measure on the attendants in charge. Attendants should be selected with care and carefully instructed. 4. Members of the medical staff should visit the working parties regularly for the purpose of studying individual cases. 5. Patients should never receive wages. It is possible that such a system may appear to work successfully in some cases, but in the end it is sure to create trouble. 6. In some cases it is advisable to encourage patients to learn a trade, so that they may the more easily earn their living after their discharge. 7. Agricultural pursuits and caring for grounds appear to be ideal labor for the great majority of patients. 8. Female patients may with advantage be employed in the vegetable and fruit garden, weeding, picking berries, etc., in addition to the work performed in the day rooms, dormitories, and dining rooms. They should also perform fancy work, do all the mending, and assist in the industrial department in the making of mats, mattresses, etc.

MEDICAL RECORD

May 18, 1907

1. Sanitary Work on the Isthmus of Panama During the Last Three Years. By W. C. GORGAS.
2. A New Type of Ataxia. By M. ALLEN STARR.
3. The Diagnostic Value of the Cystoscopic Examination in Carcinoma Cervicis Uteri. By BENJAMIN S. BARRINGER.
4. The Internal and External Remedies in Urinary Diseases and Their Comparative Value. By C. R. O. CROWLEY.
5. Twenty-five Years' Experience in the Treatment of Malignant New Growths with Escharotics. With Presentation of Cases. By WALLACE E. BROWN.
6. Preoperative Radiation and Surgical Treatment of Cancer. By WILLIAM JAMES MORTON.

1. **Sanitary Work on the Isthmus of Panama During the Last Three Years.**—Gorgas says that the United States authorities can fairly make the following statement of their sanitary work: That when they got control of the Isthmus in May, 1904, the territory along the route of the canal was in its normal condition as to health. It was overgrown by a dense tropical jungle; the natural conditions were everywhere ideal for breeding stegomyia and anopheles mosquitoes. The region was inhabited by a considerable population, which was very poor, as the result of the failure of the French canal company and the recent bloody and destructive war which had involved the whole country for some three years. Malaria, dysentery, and smallpox were prevailing among these people about as they would anywhere in the tropics under similar conditions. Yellow fever infection was present in both Panama and Colon. In fact, the conditions were more favorable for producing a high mortality upon the introduction of a large force than they had been at any time in the past. Into this region the Canal Commission has introduced the largest force ever before present on the Isthmus, some forty thousand persons, ten thousand of whom are white nonimmunes. Yet the sanitary measures taken by the United States during the period of the introduction of this unprecedented force have been such that yellow fever has disappeared, malaria been held in check, and the total sick rate in this force during the month of March, 1907, was only 23 per 1,000. He thinks that there can be no reasonable doubt that there is a direct relation of cause and effect between the sanitary measures taken by our Government and the present health conditions on the Isthmus.

2. **A New Type of Ataxia.**—Starr describes the case of a patient whose ataxia cannot be placed in either of the three categories, locomotor ataxia, a cerebellar disease, or a disease of the tracts leading to and from the

cerebellum as they pass through the medulla, pons, and crura cerebri. In this patient in question, it seems probable that along with the atrophy of the cochlear division of the auditory nerve, which produced deafness, there had been a progressive atrophy of the vestibular division of the auditory nerve, cutting off from the brain those impulses from the labyrinth which are necessary for the preservation of balance. It is well known that in labyrinthine disease of sudden onset, as described by Ménière, there is very great dizziness and consequent ataxia of movement and inability to walk. It seems possible, therefore, that in a progressive atrophy of the nerve the disturbance of equilibrium may appear as a symptom. In the absence, then, of other evidences of disease, it seems warrantable to ascribe the ataxia to a progressive atrophy of the vestibular division of the auditory nerve.

3. **The Diagnostic Value of the Cystoscopic Examination in Carcinoma Cervicis Uteri.**—Barringer observes that in the early stages of carcinoma cervicis uteri, where the carcinoma is probably confined to the cervix, the cystoscopic examination is of little use other than to determine the presence or absence of a cystitis. In all cases of carcinoma cervicis uteri involving at all the anterior or lateral vaginal walls, the most accurate means of ascertaining the condition of the vesicovaginal septum is by means of the cystoscopic examination. The cystoscopic examination includes (1) estimation of the direction of the urethra and the position of the trigone, marked elevation of the trigone meaning practically always inoperable carcinoma. (2) Conditions within the bladder; (a) tumor masses encroaching upon or causing retraction of the bladder; (b) the alterations of the bladder which are similar to those occurring with vesical or paravesical inflammations. These are folding and swelling of the bladder mucous membrane, varicosities of the bladder vessels, submucous hæmorrhages, congestion of the bladder, cystitis, and bullous œdema. The most important among these conditions within the bladder which indicate involvement of the vesicovaginal septum are: Tumor masses encroaching upon or causing retraction of the bladder; folding and swelling of the bladder mucous membrane; marked varicosities. (3) Those alterations which are unquestionably caused by the carcinoma. Alone under this head stands carcinoma of the bladder. Aside from ascertaining the condition of the vesicovaginal septum, the cystoscopic examination is important in revealing any inflammatory conditions of the bladder, as cystitis, etc., which if unrecognized and untreated before operation might be the determining factor in causing the failure of the operation. Finally, this examination becomes progressively more important as the growth extends, and the nearer it approaches the borderland between operative and non-operative.

5. **Twenty-five Years' Experience in the Treatment of Malignant New Growths with Escharotics.**—Brown states that after having tried many escharotics, experience has taught him that those agents which are the most actively hygroscopic produce the most perfect granulating surfaces, and to-day he uses in combination those most active of all escharotics, potassium hydrate and zinc chloride (granular). These are equally applicable both to skin and to mucous surfaces. In the mouth and throat he uses a combination of chronic and carbolic acids. The technique of his work in all cases is to outline the growth by palpation, seeking its most distant ramifications. This done, he makes an application of the potassium hydrate, completely covering the entire growth, and extending the application in all directions as far beyond its most remote infiltrations as the situation of the growth will admit of doing, never with a view to conservatism. The application should be graded in thickness according to the

depth and consistency of the growth, gradually lessening the thickness at the outer edges, using great care and design to have as much symmetry as possible, leaving a cleanly cut edge. After this is applied, he cuts a piece of lint the exact size of the area to be covered. Just beyond the lint on the healthy tissue he applies a heavy petroleum product. Then he surrounds the application with a quantity of absorbent material sufficient to catch and hold the watery elements that will be attracted by the hygroscopic qualities of the escharotic, and which, if not prevented, will cause the escharotic to gravitate and destroy tissue wherever it reaches. This application will do its full work in from fifteen minutes to five hours, varying according to the nature and size of the growth and resistance of the skin of different patients. During the time that this application is in place the patient should be kept very quiet, particularly so in extensive growths, such as those of the breast. The following day he makes an application of the zinc chloride in exactly the same manner in which he applied the potassium, except that he does not extend the zinc to a point of contact with the healthy or undestroyed skin. If the application is thus made with care there will be absolutely no pain resulting from it, the patient remaining perfectly comfortable. This application of zinc chloride penetrates the first completely, also hardens and contracts the eschar made by the potassium, causing more or less tension on the edges according to the extent of the growth; this traction causes inconvenience, not pain, and is probably the condition which has characterized escharotic treatments as drawing plasters. The eschar thus produced exfoliates in time ranging from four to twenty-one days, varying in each individual case. After the eschar has exfoliated there is left a smooth and perfectly healthy granulating surface, absolutely bloodless, and perfectly free from any obscuring elements. The combination of chromic and carbolic acids he uses in cases of malignant and benign growths in the mouth and throat and on the tongue, and small benign growths and granulations which appear upon the cervix uteri. The remedies should be used in saturated solutions only. First making an application of the carbolic acid completely covering the growth and adjacent healthy tissue, then he at once applies the chromic acid with the utmost care, keeping well within the area circumscribed by the carbolic acid. When the remedies come in contact destruction of that portion of the growth reached is immediate and the patient suffers no pain. Should he fail to destroy all of the growth by his first applications, he makes repeated applications in the manner described. In cancerous growths of the womb he uses the combination of potassium and zinc chloride; little or no pain is experienced by the patient if care is observed in protecting the vaginal walls, and the results of this method of treatment in that situation are successful.

BRITISH MEDICAL JOURNAL.

May 4, 1907.

1. Clinical Remarks on the Operative Treatment of Fractures, By W. A. LANE.
2. Clinical Observations on a Case of Diverticulum of the Esophagus, By B. POLLARD.
3. New Facts in Relation to the Processes of Nervous Degeneration and Regeneration (*Oliver-Sharpey Lectures*), By W. D. HALLIBURTON.
4. Remarks on a Case of Severe Fracture of the Skull: Recovery, By W. P. M'ELDOWNEY and J. W. COUSINS.
5. Case of Subcutaneous Injury of the Pancreas: Operation: Recovery, By G. H. COWEN.
6. Retroperitoneal Sarcoma of Douglas's Pouch, By C. F. WALTERS and I. W. HALL.
7. Acute Pelvic Abscess Followed by Acute Obstruction, By E. LEACH.

8. Note on the Peculiarities of the Tongue in Mongolism and on Tongue Sucking in their Causation, By J. THOMSON.
9. The Accidental Rashes of Varicella, By J. D. ROLLESTON.
10. Merycism or Rumination in Man, By J. G. MILLAR.

1. **Fractures of the Femur.**—Lane states that while recent fractures of the femur can be readily and effectually dealt with by operation practically without risk, the surgical treatment of malunited fractures of this bone is often extremely difficult, and the profuse hæmorrhage which may occur may be a source of grave danger. Even if there is extensive comminution, much can be done in the way of coaptation with patience. If necessary, loose fragments can be wired together, and the whole held rigid by means of narrow steel plates perforated by a number of holes, and screwed on to the main fragments, thus forming a rigid metal splint which retains the axes of the fragments securely immobile in the same straight line. To these plates as well as to the main fragments, the smaller pieces can be secured. But in cases where the fragments have united in a bad position, the shortening of the soft parts must be overcome, and the junction must hold securely in spite of considerable strain exerted upon it. In some cases this may be done by cutting the fragments so as to dovetail into each other. It is surprising how much the soft parts will stretch, and how little they form an obstacle to reduction, if sufficient force be used. Cutting the bone transversely is not the best way, because of the difficulty of keeping two transverse vertical surfaces immovably in apposition. Generally speaking, an oblique section is the most economical as regards shortening, and most useful in enabling the surgeon to retain the surfaces immovably and securely on one another by screws. Separation of the upper epiphysis of the femur is rarely recognized at the time the injury is sustained. But many such fractures united in a bad position have to be operated upon in order to remedy the excessive outward rotation of the femoral shaft, the limited flexion, and the alteration in the axis of rotation of the hip joint. To do this the front of the capsule is exposed, and enough of the stump of the neck of the femur taken away to allow of a complete range of flexion. The outward rotation of the shaft is overcome by lacing up the anterior ligament transversely to the length of its fibres by silver wire. Walking becomes comfortable and easy, and the leg is normal to all casual outward inspection.

6. **Retroperitoneal Sarcoma.**—Walters and Hall report a case of retroperitoneal sarcoma of Douglas's pouch, occurring in a woman, aged thirty-five years. Such growths are rare, only seven having been reported. They may arise from lymph glands—perhaps their most common origin—and from the periosteum of the vertebral and pelvic bones. A certain proportion originate from normal or inflammatory connective tissue and from the sheaths of vessels and nerves. There are also a number of cases of retroperitoneal growths recorded, the structure of which suggested an origin from Wolffian bodies or ducts, or from the Mullerian ducts. The location of the tumor in the present case was consistent with the hypothesis of trauma, as the region involved must always be injured in primipara.

8. **The Tongue in Mongolism.**—Thomson states that while nearly all the other peculiarities which distinguish the so called "Mongol" baby from other children, are recognizable from the day of birth, yet the condition of the tongue forms a notable exception to this rule. The tongue may be abnormally long, but the enlargement of the papillæ does not appear until after the second month, and the fissuring not until the third or fourth year. Tongue sucking is a well recognized

characteristic of Mongolism, and to it the author is inclined to attribute the changes in the tongue.

9. Accidental Rashes of Varicella.—Rolleston states that, though accidental rashes may develop at any stage of chickenpox, the prodromal and concomitant ones are much more common than the posteruptive. The varieties are in order of frequency, scarlatiniform, purpuric, morbilliform, and mixed. Urticaria is rarely met with in chickenpox. The trunk is most frequently affected, but there is no site of predilection. The rashes are usually of short duration, and are not accompanied by any cutaneous irritation or desquamation. The rashes are probably septic or toxic in character, and are independent of the varicellar infection itself. The rashes are specially liable to develop when the skin is in a state of diminished resistance, owing to a preexisting eruption. The character of the eruption is determined by the degree in which the cutaneous capillaries are affected. If the paralysis is small and is in discrete areas, a morbilliform rash results. If the vascular paralysis extends over a more considerable area a scarlatiniform rash is produced. After an extreme degree of dilatation, capillary ruptures occur, represented by the purpuric type of rash.

LANCET.

May 4, 1907.

1. New Facts in Relation to the Processes of Nervous Degeneration and Regeneration (*Oliver-Sharpey Lectures, I*). By W. D. HALLIBURTON.
2. Cerebrospinal Fever. By C. WALL.
3. A Note on the Opsonic Power of the Serum with Reference to the Meningococcus of Cerebrospinal Fever Occurring in the Belfast Epidemic. By T. HOUSTON and J. C. RANKIN.
4. Note on a Case of Osteitis Deformans and an Account of the Skeleton of a Typical Example. By R. WATERHOUSE.
5. A Case of Primary Sarcoma of the Liver in a Child Aged Four Months. By E. W. S. CARMICHAEL and H. WADE.
6. Note on the Life Cycle of the Parasite of Sleeping Sickness. By J. E. SALVIN-MOORE and A. BREIUL.
7. On the Effect of the Exposure to Tobacco Smoke on the Growth of Pathogenic Organisms. By M. B. ARNOLD.
8. The Use of Animal Blood Serum in Surgery: Preliminary Notes. By W. STUART-LOW.
9. The Balneological Treatment of Urinary Diseases. (*Concluded*). By O. KRAUS.

3. Opsonins in Cerebrospinal Meningitis.—Houston and Rankin have studied the opsonic power of the blood serum in cases of cerebrospinal fever, and sum up their results as follows: 1. From the sixth day onward all the cases examined showed an opsonic index of over four; several of the cases from the second day onwards also gave an opsonic index of much above four. 2. The opsonic index seems to be a more delicate test of infection than an agglutinative experiment; the agglutinative effect was never noticed until the index reached five times the normal, while after that it was always well marked. 3. The combination of the agglutinative effect and the opsonic determination will furnish in this disease a specific test of great value in diagnosis. The low opsonic power always found in normal or noninfected sera, so that even when moderately thick emulsions are used two or three cocci are the maximum found in any leucocyte, and the uniform absence of all agglutinative effect in all preparations containing normal serum forms a striking contrast with the very high opsonic effect found in preparations containing the serum from all cases of the disease on or after the sixth day and in several cases before this date, such preparations always showing leucocytes packed with cocci and also dense clumps of cocci not yet ingested. In fact, the picture is so characteristic that in a majority of the cases a diagnosis could be made by simply mixing some washed corpuscles, serum

from the patient, and meningococci, and incubating the mixture for a short while without the use of any control. Usually opsonic determinations for the purposes of diagnosis require most careful and accurate counts, while in the case of this disease a glance at the preparation is usually sufficient. 4. From the definite results obtained it seems likely that this method will prove of value (a) in diagnosing sporadic cases of the disease; (b) in settling the etiology of posterior basic meningitis in infants; and (c) in determining the nature of a doubtful coccus. In the presence of an epidemic it will always be possible by this method to decide whether or not a coccus isolated from a case is the true meningococcus. In the series of cases examined two Gram positive cocci isolated from the blood and one from the cerebrospinal fluid proved not to be meningococci when tested by the above method. 5. Two of the main elements upon which the process of immunity in this disease depends are the opsonic and agglutinative powers of the serum. A therapeutical serum therefore having no opsonic or agglutinative power on the meningococcus could not be expected to have much value as a remedial agent in this disease. The writers examined seven different supposedly curative sera, but in none of them were found any opsonic or agglutinative powers, nor did they benefit the patients.

7. Tobacco Smoke and Microorganisms.—Arnold's investigations have been carried on with a view to determine the bactericidal power of tobacco smoke. He summarizes his results as follows: 1. The bacillus of diphtheria was always markedly affected, and in some instances it failed to grow at all. 2. The typhoid bacillus always grew, but its growth was much inhibited. 3. The *Bacillus coli communis* always grew, but much less than in the control tubes. 4. The *Staphylococcus pyogenes aureus* was hardly affected. The writer concludes that tobacco smoke as drawn into the mouth is very deleterious to the growth of some pathogenic organisms, but not more, indeed rather less so, than smoke from other sources, such as hay, for example.

8. Blood Serum and Wounds.—Stuart-Low thinks that in normal blood serum we have the best substance and the natural substance for perfect and rapid repair of wounds. 3. It is essentially nonirritating, and in fact, has a soothing, cooling effect on injured parts. It is alkaline in reaction, and from albuminous matters held in solution has a slight viscosity that gives it to a considerable degree air excluding, and to a lesser degree adhesive, covering, and protective properties which are all conducive to healing. Normal blood serum also possesses restraining influences on bacterial growth because of the antibodies it contains. The writer has used the serum of fresh sheep's blood, especially in ear cases, and has obtained excellent results.

9. Carlsbad and Urinary Diseases.—Kraus states that the Carlsbad waters are particularly indicated in diseases of the urinary passages for the following reasons: 1. They are notably diuretic. Therefore, they have an eliminative action on foreign bodies in the urinary passages, like clots, mucus, pus, or small concretions, such as can be passed out *per vias naturales*. The passages are well flushed out, microorganisms (*Bacillus coli*, etc.) being also washed out by this means. 2. They have a modifying action on the urinary mucous membrane; catarrhs of low grade heal rapidly without local treatment. 3. The Carlsbad waters stimulate both renal and intestinal functions energetically, and their use is thus specially indicated in those cases where so called urotoxic substances are to be eliminated—i. e., in cases of prostatic disease, chronic cystitis, etc.—and in those cases of nephritis where the gastric symptoms prevail. 4. The regulation of intestinal activity has a direct depleting effect

on the pelvic organs, bladder, prostate, etc. The venous stasis due to intestinal stagnation is mitigated, and the deeper organs are relieved. The increase in volume of the hypertrophied prostate due not to secondary degenerative changes, but to a congestive hyperæmia—and in every case a part is congestive—disappears as a result of the regulation of the bowels. 5. After operation, after nephrotomy, suprapubic lithotomy, litholapaxy; to wash out the smallest particles of sand after prostatectomy; to alleviate the cystitis, regulate the bowels, and eliminate the toxines. 6. The Carlsbad treatment is contraindicated in the common condition of frank urogenital tuberculosis, so frequently mistaken for a simple cystitis or pyelitis.

LA PRESSE MEDICALE.

April 27, 1907.

1. *Leucæmic Retinitis*. By ROCHON-DUVIGNEAUD.
2. The Cutaneous Reflexes and Their Relations with the Tendinous Reflexes in Tabes, By NOICA and STROMINGER.

1. **Leucæmic Retinitis.**—Rochon-Duvigneaud reports two cases of leucæmia in which hæmorrhagic retinitis was one of the first symptoms of the disease and led to the diagnosis.

BERLINER KLINISCHE WOCHENSCHRIFT.

April 15, 1907.

1. Contribution to the Function Test of the Heart, By B. FELLNER and C. RÜDINGER.
2. Concerning a Transplantable Carcinoma of Rats, By L. MICHAELIS and C. LEWIN.
3. Concerning the Presence and Signification of Medullated Nerve Fibres in the Human Retina from the Neurological Standpoint, By M. BERNHARDT.
4. Abdominal Section Without Subsequent Formation of Hernia, By A. DÜHRSEN.
5. Levaditi's Stain of the *Spirochæta Pallida*, By C. BENDA.
6. Concerning the Clinical Signification of Allorhythmia Due to Digitalis (*Concluded*), By L. F. DMITRENKO.

1. **Function Test of the Heart.**—Fellner and Rüdinger describe their test thus: The patient is made to lie quietly on his back, and the pulse is counted for a full minute, while simultaneously the systolic and diastolic blood pressure is determined in the brachial artery. The femoral arteries are then occluded by pressure, and the pulse is again counted at the same time that the systolic and diastolic blood pressure in the brachial artery is determined. The investigation of seventy cases gave the following results: The normally strong heart reacts to the compression with an increase of pressure of from 5 to 10 mm. The strong hypertrophic heart reacts with a greater increase of pressure, from 10 to 20 mm. Weakness of the heart is shown by no increase in the blood pressure, or more frequently by a lowering of the blood pressure from 5 to 15 mm. Only a slight increase of blood pressure with a hypertrophic heart indicates a commencing abatement of the energy of the heart.

3. **The Presence and Signification of Medullated Nerve Fibres in the Human Retina from a Neurological Standpoint.**—Bernhardt says that the presence of medullated nerve fibres in the retina of an infant has not yet been observed, and is inclined to believe that the condition itself is not congenital, but only the predisposition to its development. He reports five cases in which the condition was associated with nervous troubles.

4. **Abdominal Section Without Subsequent Formation of Hernia.**—Dührssen asserts that Lennander's incision is the only one of all the methods employed in the performance of cœliotomy by which one may be rendered absolutely certain that a ventral hernia will not subsequently develop. In this operation the incision is made a little to one side of the linea alba through the sheath of the rectus muscle, the muscle

itself is then drawn to one side, and the incision continued through the deeper parts. After the operation the deeper parts are sutured, the muscle replaced in its normal position, and the wound closed over it.

6. **Allorhythmia Due to Digitalis.**—Dmitrenko presents the following conclusions: 1. Neither protracted nor intensive treatment with digitalis can be of itself the immediate cause of the allorhythmia. 2. The cause of its appearance is found in certain forces of the heart mechanics in connection with the condition of the organism at a certain time. 3. The use of digitalis must be interrupted as soon as allorhythmia appears, but as soon as the condition of the organism has improved the digitalis may be recommenced. 4. The appearance of occasional extrasystoles during treatment with digitalis is not a contraindication to the further use of the drug, but its use should be stopped as soon as the pulse is markedly quickened. 5. When there are serious disturbances of compensation a preparative treatment should precede the use of digitalis. 6. In such cases the indication is to combine the use of digitalis with that of an adjuvant, to be chosen according to the physiological condition of the organism.

April 22, 1907.

1. Practicability in Pathology, By GOLDSCHIEDER.
2. The Manner in Which Complements Are Made Inactive in Saltless Media, By H. SACHS and YUTAKA TERUUCHI.
3. Contributions to Rhinoplasty, By J. JOSEPH.
4. A Case of Congenital Defect of the Fibula with Metatarsus Varus Acquisitus, By M. BLUMENTHAL.
5. Experimental Studies in Regard to Diabetes, By G. ZÜLZER.
6. Contribution to the Function Test of the Heart (*Concluded*), By B. FELLNER and C. RÜDINGER.
7. Levaditi's Stain of the *Spirochæta Pallida* (*Concluded*), By C. BENDA.
8. Ottomar Rosenbach, By W. GUTTMANN.

3. **Contributions to Rhinoplasty.**—Joseph reports three cases, with illustrations, in which he improved the appearance of more or less deformed noses. All were operated in intranasally.

5. **Experimental Studies in Regard to Diabetes.**—Zülzer finds that the simultaneous injection of extract of the pancreas and extract of the suprarenal capsule neutralizes the effect of the latter in the production of sugar in the urine.

7. **Levaditi's Stain of the *Spirochæta Pallida*.**—Benda gives an excellent description, with illustrations, of the pictures produced by this stain, together with remarks on the histology of the liver in congenital syphilis.

LA RIFORMA MEDICA.

April 13, 1907.

1. A New Distinctive Sign Between Organic and Psychical Pain, By LUIGI GUERRA COPPIOLI.
2. Solomon's Test in the Diagnosis of Cancer of the Stomach, By DARIO ROMANO.

1. **The Pupil Pain Reflex in Distinguishing Between Pain Due to Organic Lesions and Pain of Psychical Origin.**—Coppioli, of Baccelli's clinic (Rome), furnishes some interesting data in confirmation of Max Löwi's recent statement that the pupil reflex could be used as a distinctive sign in pain. When the pupil has been strongly contracted by fixing attention upon a bright luminous object, and when pressure is made upon the seat of "organic" pain, the pupil becomes involuntarily and reflexly dilated. Löwi found that when pressure was made strongly upon the testis of a healthy man, the pupil became dilated; on the other hand, when the testis of a tabetic patient was compressed, no dilatation took place, these patients being devoid of testicular sensibility. The present author observed the Löwi reflex in one hundred cases, and concludes that Löwi was correct in his theory. The degree of pupillary dilatation was, he found, in propor-

tion to the degree of "organic" pain suffered, the promptness of the reflex was also in proportion to the intensity of the pain. When no morbid process of an organic nature was present, as in hysteria, neurasthenia, etc., the dilatation did not take place.

2. Solomon's Test in Cancerous Stomach.—Romano found Solomon's test (described in 1903) but moderately useful in the diagnosis of cancer of the stomach, and reports his experience with this test in thirty cases. He insists that this test shows nothing but the presence of an ulceration in the stomach, and does not indicate the nature of the ulcerative process. There are, moreover, simpler, less laborious, and less uncomfortable methods for the determination of the presence of ulcers. As the test occurs in persons who have no malignant gastric disease, it is of no specific significance. The test consists in thoroughly washing the stomach and in testing the clear washings for proteids. If a tumor is present the serous discharge or exudate will, Solomon thought, appear in the washings and will be detected chemically. The test, however, is positive when there remains some mucus in the stomach in spite of careful washing.

ROUSSKY VRATCH.

March 7, 1907.

1. *Tilletia Caries of Wheat and Its Action Upon the Starving Human Organism*, By G. B. KHLOPINE.
2. *Infection with Tuberculosis Through the Subcutaneous Tissues, the Blood, and Chiefly Through the Intestine (To be concluded)*, By A. D. PAWLOWSKY.
3. *New Apparatus for the Determination of Electrosensibility*, By N. I. KOULBINE.
4. *The Effect of Air Charged with from Five to Ten Per Cent. of Carbon Dioxide Upon the Normal and Upon the Febrile Organism*, By N. V. WESSELKINE.
5. *The Comparative Effects Upon the Isolated Heart of Monotomic and Polyotomic Alcohols of the Fatty Series*, By P. V. ANDROPOFF.
6. *Abnormally Large Parietal Foramina*, By TH. A. BIALYNSKI-BIRULI.
7. *The Sterilization of Silk Sutures*, By V. TH. PLETENIEFF.
8. *Experiments with the Meningococcus Serum of Kolle and Wassermann in Epidemic Cerebrospinal Meningitis*, By N. I. LAVROFF.

1. Tilletia Caries in Wheat.—Khlopine reviews the subject of this parasitic disease in wheat. The parasite belongs to the class of eumycetes, subclass basidiomycetes, family ustilago, genus *tilletia*, and species *Tilletia caries* or *Tilletia tritici*. It occurs in the form of minute transparent, dark brown spores covered with ribs which divide the surface into small squares. The wheat has a peculiar unpleasant smell, like of decaying herrings, and when the grain is ground up into flour the latter looks dirty. Cattle that had been fed with wheat husks which had thus been affected developed a disease of the gastrointestinal tract which in some cases proved fatal. In persons who ate the flour a peculiar disease (akrodynia) developed. The article was prompted by the discovery that the flour which had been bought in Siberia by the Russian government for the relief of famine stricken districts proved to be infected with *tilletia*. There arose a controversy as to whether this flour could be used or not, and the hygienic experts of the government declared that the poisonous character of this parasite in man had not been scientifically proved. The author contends that it would be a crime to give such flour to the starving peasants, and shows by numerous references to literature that large masses of people have at various times suffered as the result of this parasitic disease of wheat.

4. Carbon Dioxide in the Air as an Antipyretic.—Wesselkine reports experiments upon normal animals and animals suffering from febrile conditions, showing that the admixture of certain proportions of carbon dioxide to the air breathed by such feverish animals

produced a reduction of temperature. The amounts of carbon dioxide used were either 5 per cent. or 10 per cent. The latter mixture was found to be the more efficient of the two, the temperature of feverish dogs falling to normal after exposure to 10 per cent. carbon dioxide air, and rising again after exposure to air poor in carbon dioxide. These experiments may have a great deal of practical importance in fever therapeutics if the tests are carried out on a larger scale.

8. Kolle-Wassermann's Meningococcus Serum.—Lavroff's case of epidemic cerebrospinal meningitis was treated with the meningococcus serum of Kolle and Wassermann, with most encouraging results, the serum producing very promptly an improvement in all the symptoms, a fall of temperature, etc. The stiffness of the neck remained for seven days after the injection of serum, while Kernig's sign persisted for eleven days. The temperature did not rise after the injection to any extent, and the general condition of the patient remained good to the end of the disease.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

May, 1907.

1. *The Diagnosis and Treatment of Cardiac Degeneration Apart from Valvular Disease*, By R. H. BABCOCK.
2. *A Proper Shoe as an Aid to Treatment in Flat or Weakened Feet*, By J. M. BERRY.
3. *The Treatment of Compressed Air (Caisson) Illness*, By H. H. PELTON.
4. *A Study of Five Hundred Cases of Pleurisy Occurring at the Pennsylvania Hospital*, By F. FRALEY.
5. *The Relation of the Kidneys to Gastroenterology*, By A. L. BENEDICT.
6. *Heart Block (Adams-Stokes Disease)*, By G. R. BUTLER.
7. *Position of the Motor Areas of the Human Cortex*, By H. C. GARDINIER.
8. *A Contribution to the Pathology of Refrigeration Facial Palsy*, By L. P. CLARK.
9. *The Changes Produced in the Kidneys by Röntgen Irradiation*, By A. S. WARTHIN.
10. *The Pathogenesis of Reflexes Apropos of a Case of Tuberculoma of the Spinal Meninges*, By A. GORDON.
11. *Scleroma of the Larynx*, By E. MAYER.
12. *The Heredity of Form as Illustrated in Pathology by a Study of Cysts of the Middle Turbinate Bone*, By J. WRIGHT.
13. *Concerning the Occurrence of Neoplasms in Wild Mammals, with the Report of a Case of Sarcoma of the Ovary in Nyctereutes Albus*, By H. BROOKS.

1. Diagnosis and Treatment of Cardiac Degeneration.—Babcock divides cases of myocardial degeneration clinically into two groups, as follows: 1. Those in which diagnosis is easy and certain, resting on sufficient data. 2. Those in which diagnosis is by exclusion or inference, the data being few, though they may be very significant. In the first group there may or may not be symptoms of cardiac incompetence; in the second they are wanting or obscured by symptoms proceeding from other organs. In the diagnosis of the first group important factors are age (above forty), precordial pain, dyspnoea, and vertigo. If chronic nephritis is present the diagnosis becomes more difficult. In the second group there are no distinctive heart symptoms, the individuals have passed middle life, and the chances of integrity of the heart muscle are against them. If the left ventricle is hypertrophied, if there is a soft systolic murmur at the apex, and there is arterial hypertension myocardial degeneration may be inferred. In the treatment of the first group the signs of inadequacy should be treated as in waning heart power from any cause. The author suggests rest in bed during most of the twenty-four hours, passive exercise, Nauheim baths, vasodilating drugs, strophanthus, mild cathartics, and the daily administration of a small quantity of morphine. In the second group treatment is no longer curative, but conservative, hence it means avoid-

ance-of strain, very cautious exercise, and very little medicine, except an occasional cathartic.

3. The Treatment of Compressed Air (Caisson) Illness.—Pelton states that this disease is becoming more and more frequent, is the result of work in air at greater than the atmospheric pressure, and is due to gas emboli in the circulation. There are four types of the disease: 1. "The bends," characterized by pain in the limbs, increased by motion, itching of the skin, abdominal cramps, and difficult respiration. 2. "The staggers," characterized by dizziness and staggering. There may also be vomiting, rapid and weak pulse, purpuric eruption, dimness of vision, nystagmus, defective hearing, and pain in the limbs and abdomen. 3. The paralytic type. In this there is gradual or sudden loss of motility to a slight or a very extensive degree. There may be retention of urine, or there may be paralysis of the bladder and rectum. The paralysis is usually not permanent, though it may last for months. 4. The comatose type. The most prominent symptom is partial or complete coma, coming suddenly after emergence from the excessive pressure, or preceded by other symptoms. There may be frothing at the mouth, nose bleed, vomiting, paralysis of rectum and bladder, and convulsive movements. A fatal issue is the rule. Treatment first involves recompression, for which hospital locks are usually provided in connection with caisson works, which brings relief in early cases. In addition irritant liniments may be used upon the skin, the faradic current, heat, and the careful administration of analgesic drugs. Stimulation with strychnine, caffeine, etc., is often useful. The after treatment includes careful nursing, nourishing food, and tonics.

5. Relation of the Kidneys to Gastroenterology.—Benedict finds it difficult to condense a description of the ways in which renal and alimentary conditions react upon each other. Thus uræmia is not directly due to the retention of urinary waste, nor does the retention of urinary and hepatic wastes result in death invariably within periods which certain writers have mentioned as the rule. Renal albuminuria without casts is quite possible, though it may not be termed physiological and functional. The extent to which the stomach acts vicariously for the kidney in nephritis is uncertain, but the vomitus in Bright's disease does contain urinary salts and certain organic compounds, and even urea. In addition lavage of the stomach not only has a local effect, but aids in the elimination of toxins. Delirium tremens is noticed in this connection, because cases of autointoxication with sclerotic livers and badly congested or diseased kidneys frequently present the phenomena of that condition. In the cases in which the heart, lungs, kidneys, liver, spleen, and alimentary canal are mutually involved in various diseases, the involvement of the alimentary canal is only secondary, a catarrhal condition ensuing on account of portal obstruction, with capillary oozing, the formation of varicose internal ulcers, or massive hæmorrhages due to interference with the return circulation.

7. Motor Areas of the Human Cortex.—Gardiner narrates three cases which showed focal convulsive movements during life, followed by partial or complete paralysis of motion. The convulsions were not preceded by auræ, and most careful examination failed to disclose the presence of sensory symptoms. The causes in these cases were lesions, ventral to the fissure of Rolando, in the precentral convolution, together with the bases of the superior and middle frontal gyri. From the author's study of his own cases and of those which have been gathered from the literature of the subject, he draws these two conclusions: 1. There is a determined area in the cerebral cortex presiding over motor func-

tions, and that area is the precentral convolution and its paracentral annex, possibly including the bases of the superior and middle frontal gyri. 2. The motor and sensory areas of the brain, though independent, are, as in the spinal cord, perfectly distinct from one another.

8. Refrigeration Facial Palsy.—Clark observes that from a clinical view point many data point to a simple degeneration of the peripheral portion of the facial nerve in Bell's palsy. Infrequency of pain in the peripheral nerve distribution and absence of tenderness on pressure in the nerve or muscles indicate degeneration. The passive movements of the muscles are not painful as in neuritis. The clinical phases of recovery in refrigeration palsy of the facial nerve have many points in common with those which are observed in reunited or severely compressed peripheral nerves in other parts of the body. Hence the author concludes: 1. Refrigeration Bell's palsy is probably a Falloppian neuritis. 2. The strands of the facial nerve are severely compressed by the initial inflammatory swelling in a rigid canal, and in this manner degeneration of the entire periphery of the nerve is induced. 3. The predisposition of some individuals to a Falloppian neuritis and its consequent facial palsy rests largely on anatomical grounds, which are mainly comprised in the fact that the nerve has a tortuous and exposed course through a bony canal, probably often congenitally insufficient in size.

9. Changes Produced in the Kidneys by Roentgen Irradiation.—Warthin presents the following conclusions: 1. Exposure of small animals to the rays for half an hour or an hour produces slight nuclear changes in the renal epithelium. This is recovered from, but is followed by albuminuria and cloudy swelling, which is proportional to the degree of lymphoid destruction. 2. If animals are exposed until death occurs the renal cells will be found smaller and cloudy, and the tubules distended with an albuminous precipitate. 3. Continuous exposure for five hours is fatal within ten days, death following paresis and coma, which symptoms have a definite relation to the lymphoid destruction and the kidney lesion. The symptoms may imply injury to the central nervous system, or autointoxication. 4. It follows that the destruction of leucocytes in the treatment of leucæmia by x rays may be injurious to the central nervous system or the kidneys. Hence, with prolonged and repeated irradiation of the lymph nodes and spleen in human beings possible renal injury must be considered, and repeated examinations of the urine made. 5. X rays disturb the chromatin of all cells, the lymphoid cells and epithelial cells of the testis being most sensitive, the renal cells less so. All cells capable of rapid proliferation or renewal are especially susceptible to x ray influence.

11. Scleroma of the Larynx.—Mayer finds, from his investigation of this subject, that scleroma is a chronic incurable disease, which is more or less contagious. There are probably many more cases than the large number that have been recorded. It obviously follows that sanitary authorities everywhere should take appropriate action while the cases are comparatively few in number. The disease is not more dangerous than leprosy, as Streit has asserted, but it is now quite within the control of the sanitary authorities. Every quarantine officer should look upon rhinoscleroma as infectious, and aliens with this disease, landing in this country, should be deported at once. In addition, every case of hoarseness of long duration, with or without dyspnoea, especially if associated with chronic catarrhal conditions, should be detained until the presence or absence of scleroma is determined by expert authority.

Letters to the Editors.

THE NEWSPAPER TREATMENT OF DR. KNOPF.

602 EAST HURON STREET,

ANN ARBOR, MICH., May 17, 1907.

To the Editors: I take this method of trying to correct the outrageously false impression given by many of the newspapers of the country of the statement of Dr. Knopf before the Clinical and Climatological Section of the National Association for the Study and Prevention of Tuberculosis, at its recent meeting in Washington. I was present as chairman of the section when Dr. Knopf made his remarks. He was within a few steps of where I sat, and I was paying close attention to his remarks. I understood him, and all others with whom I have spoken on the matter since the meeting understood him, to state plainly the need of using morphine to relieve painful symptoms in the last stage of the disease. Any physician who heard the remarks must have known that the morphine was to be used, not for shortening life, but solely for making it easier, and every physician also knows that life is generally prolonged by that sort of treatment. As I have expressed myself before this regarding the shortening of lives of seriously sick people, I need hardly say that had Dr. Knopf advocated anything like the administration of large or dangerous doses of morphine I should have vigorously protested. I hope that physicians who are asked about the matter will contradict the newspaper statements, and seize the opportunity of explaining the real object of the treatment.

GEORGE DOCK.

THE DISPENSARY ABUSE.

1185 MADISON AVENUE,

NEW YORK, May 13, 1907.

To the Editors: This is not a scientific subject, but all the same a very important one. We cannot live on science alone; we also need food for the body, and to get this food we have to work, and not for charity alone. I wish to speak of the abuse of the dispensaries. This abuse has been called to my attention for years, but especially within the last few months have I had occasion to hear of a great many patients, referred to me, who were treated at the different dispensaries and who could well afford to pay a physician. One is a woman whose husband is earning \$80 a week; another is one who owns real estate worth \$50,000; another is a woman whose husband is in the wholesale business and lives in a \$40 apartment; and another patient, sent to me by his family physician, whose child had adenoids, for which I had advised an operation, came back after a few days and told me that he would not pay the price we had agreed upon, but that if I did not operate for the amount he mentioned, he would simply take his child to the Manhattan Eye and Ear Hospital, to be operated upon free of charge. His physician assured me that this man had several thousand dollars in the bank. So I could cite dozens of cases, but do not think it necessary, as I do not doubt that every physician has had his own experience.

The question is, how to abolish this evil, and here I need the cooperation of all physicians to advise ways and means to accomplish results. It is my opinion that we should have a dispensary board or committee paid by the different dispensary or charitable organizations to investigate every patient that applies for treatment before he is attended to by any institution. The patients are to apply at the office of this dispensary board for a card entitling them to free treatment at any dispensary in New York, say, for one year. Applicants will have to give their name, address, business,

and amount of weekly income, and this is to be investigated by the board or their representatives before a card is furnished.

Almost all dispensary cases are chronic, so that a few days' delay would not affect them, but in case of acute or emergency cases exceptions could be made. If this was properly attended to, a good many people would not even dare to apply for treatment, and this would also give us the advantage of paying proper attention to those that deserve free treatment; as it is, the dispensaries are overrun, and we cannot do justice to the poor.

I should greatly appreciate the opinion of my colleagues.

ALBERT G. POHLY.

Proceedings of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-second Annual Meeting, held in Washington, on Tuesday, Wednesday, and Thursday, May 7, 8, and 9, 1907.

(Continued from page 908.)

The President, Dr. FRANCIS P. KINNICUTT, of New York, in the Chair.

Some Points Regarding Tuberculosis of Infancy.—

Dr. L. EMMETT HOLT, of New York, read a paper in which he said that in nineteen months he had seen sixty-seven cases of pulmonary tuberculosis in infants, in which the diagnosis was made by finding the tubercle bacillus in the sputum in over eighty per cent. He had found that it was impossible to obtain the bacillus by examining the vomited matter. The passage of a stomach tube into the œsophagus and the examination of the œsophageal mucus which adhered to it were satisfactory in a certain number of cases. The best way to obtain sputum from an infant for the purpose of examination was to excite a cough by irritating the pharynx with a tongue depressor, a teaspoon, or a piece of muslin. When the mucus appeared in the throat during the paroxysm of coughing it could be caught on a piece of muslin and stained in the usual manner. Both cotton and gauze were too absorbent for this purpose. In twenty-one of the cases one or the other parent had tuberculosis, and in six others a member of the household was suffering from the disease. There was a direct demonstration of contagion in forty per cent. of the cases. He had made it a rule to search for tubercle bacilli in every child in whom a family history of tuberculosis could be obtained, and many children were found to have tubercle bacilli in the pulmonary secretions, although they presented no symptoms of the disease. When the number of tubercle bacilli swallowed was considered, the small prevalence of intestinal tuberculosis was remarkable. He always examined the cerebrospinal fluid in cases of tuberculous meningitis. He had seen forty-two cases in sixteen months, and had been able to demonstrate the tubercle bacillus in every case. He drew nearly all the cerebrospinal fluid that would flow into one tube, and collected the very last portion in a separate tube. He examined this portion for bacilli. The number found was never very great, and the search should, therefore, be careful. The average time spent on the examinations was an hour. Tubercle bacilli had been found at first puncture in thirty-four cases, on second puncture in six cases, and on third puncture in two cases. The fluid was allowed to stand in the incubator for twelve hours, and then the clot was extracted and stained. A small amount of blood, such as would readily be obtained from the puncture, would hasten coagulation. If no clot was found the fluid was centrifuged, and the sediment examined by the method of superimposing one drop upon another, so as to make a pretty

thick film. The cells in the sediment were of the uninnuclear type in the majority of instances, and very seldom of the polymorphonuclear variety. Glucose was present in the fluid in fifteen cases and absent in seven. Tubercle bacilli were found in the sputum in twenty-two of the forty-two cases of tuberculous meningitis.

Dr. GEORGE L. PEABODY, of New York, asked how much fluid Dr. Holt obtained as a rule?

Dr. GEORGE M. KOBER, of Washington, asked Dr. Holt if he had ever tried to find tubercle bacilli in the feces of these patients. He himself had found them in forty per cent. of the cases examined.

Dr. RICHARD C. CABOT, of Boston, said that the finding of tubercle bacilli in children who showed no symptoms of the disease was a very important fact. He had followed one hundred children of parents who presented symptoms and physical signs of pulmonary tuberculosis and found twenty-six cases in which tubercle bacilli were present in the sputum, although the children showed no symptoms of the disease.

Dr. HOLT said that the normal amount of cerebrospinal fluid was from a half to two ounces. In cases of tuberculous meningitis he usually got from one to three ounces. He had made no studies of the feces.

A Study of Normal Living Anatomy in the First Twelve Years of Life.—Dr. THOMAS MORGAN ROTCH, of Boston, exhibited a series of radiographs illustrating the normal anatomy of infants at various periods of their development. The study of the anatomy of the infant at autopsies was complicated, he said, by the terminal infections of which the subject died. Radiographs were of value in determining anomalies, in diagnosing cardiac conditions and rachitis, in determining the time of appearance of centres of ossification, and in diagnosing pulmonary and stomach conditions. All pictures should be taken from a standard distance and at a standard angle.

The Life Saving Value of Diuresis.—Dr. S. J. MELTZER, of New York, in the paper, said that the magnesium salts were given by physicians and taken by patients in a routine manner, without apparent harm. Experiments had shown, however, that when magnesium salts were injected into animals hypodermically in doses of a gramme and a half per kilo they produced delirium, anæsthesia, and relaxation. Larger doses than this killed the animal by respiratory paralysis. In an animal poisoned by these salts, the fate was determined by the passage of urine; if the animal urinated it could recover; if it did not urinate it would die. When magnesium salts were taken by the mouth no such results were observed, but in nephrectomized animals the administration of these salts by the mouth produced anæsthesia followed by death. The reason that magnesium salts were innocuous in normal animals when administered by the mouth was their rapid elimination by the kidneys. In animals with diseased kidneys magnesium salts produced death when given by the mouth; therefore in cases of nephritis and cases of renal disease magnesium salts were contraindicated.

The Hæmorrhagic Diathesis in Bright's Disease.—Dr. DAVID RIESMAN, of Philadelphia, reported the case of a man, aged thirty years, who had an inflammation of the eye, stupor, hæmorrhage from the mouth, albumin and casts in the urine, a large suffusion on the trunk, and purpuric patches on the arms. A blood examination showed 2,350,000 erythrocytes; 15,000 leucocytes; fifty per cent. hæmoglobin; and a normal differential count. The patient had convulsions, and the bleeding continued until death. He also reported the case of a man, aged fifty-five years, who complained of bleeding from the mouth and from the intestines. He became stuporous, had a urinous odor in his breath, albumin in his urine, but no œdema. The blood examination showed 4,400,000 erythrocytes, 6,600 leucocytes, fifty-five per cent. hæmoglobin, and a normal differential count. He had convulsions, and the bleeding continued

until death. At the autopsy kidney disease was the principal lesion found. The association of hæmorrhage and Bright's disease might be accidental; it might be due to the same cause; the hæmorrhagic diathesis might cause the nephritis; and the nephritis might cause the hæmorrhagic diathesis. In the two cases reported Riesman was of the opinion that the nephritis had caused the bleeding. The hæmorrhage might come from the nose, the mouth, the uterus, the intestines, or the skin. The multiplication of capillaries in the nose in nephritis was sometimes a cause of bleeding. Metrorrhagia might be due to kidney disease. Hæmorrhage into the ear was an unusual form of nephritic bleeding, and at times there might be a true hæmorrhagic diathesis, not including senile purpura. The bleeding might be due to excessive tension in the bloodvessels, arterial disease, and toxæmia. He inclines to the belief that there was a toxine in cases of nephritis which brought about a disease of the vessel wall and hæmorrhage. Hæmorrhages might be the first symptom of a latent nephritis. The treatment should be directed to the nephritis and to the hæmorrhage. For the latter, gelatin and the calcium salts might be used. If the patient was on a milk diet, vegetables and potassium salts should be administered.

A Case of Secondary Carcinoma with Recurrences in Unusual Sites.—Dr. GEORGE L. PEABODY, of New York, reported this case (to be published).

Dr. S. J. MELTZER asked if there had been a tumor in the region of the superior cervical ganglion. If a tumor of this region had pressed on the ganglion or the facial nerve, it would explain the ptosis and the partial facial paralysis.

Dr. PEABODY said that nothing had been found in that situation.

Dr. S. SOLIS COHEN, of Philadelphia, gave the details of the case reported by McCarthy.

Experimental Observations Upon the Action of Intestinal Antiseptics.—Dr. J. D. STEELE, of Philadelphia, referred to Strasburger's method of estimating the number of bacteria in the feces by weight, and described the application of this method to the study of the action of intestinal antiseptics. In one hundred cases he had found that this method was in advance of any other as an index of bacterial action. The more irritating intestinal antiseptics increased bacterial action, instead of decreasing it. Steele used bismuth salicylate and beta naphthol as intestinal antiseptics. Bismuth salicylate reduced the number of bacteria in the stools in every instance to less than half, and in one case to one quarter their former amount. Beta naphthol had about the same effect. In a case characterized by considerable gastrointestinal irritation the administration of beta naphthol doubled the number of bacteria. The evacuation of the bowels, combined with the administration of a proper diet, was the best method of reducing bacterial growth in the intestines.

Dr. MELTZER asked if there was any evidence that beta naphthol reached the colon. The drug might be absorbed before it left the small intestine.

Dr. LEWIS A. CONNER, of New York, said that it was as important to preserve those bacteria which were valuable in the digestion of food as it was to destroy bacteria which were undesirable guests in the intestines. By giving intestinal antiseptics we were often acting blindly, and thus delaying the progress of our patients.

Dr. STEELE said that he had done no work on the elimination of beta naphthol.

Observations Regarding the Hygiene of Medical Cases, Particularly in Hospital Wards.—Dr. DAVID L. EDSELL, of Philadelphia, referred to various forms of infection among adult patients in hospital wards. On a previous occasion he had reported a series of skin infections occurring in pneumonia patients and a series of secondary infections from milk in cases of typhoid fever. While ward infection in typhoid fever was rare,

so far as the rate of death of cases was concerned, when the proportion of nurses to the general population of a city was considered, nurses furnished eight or nine times as many cases as the inhabitants in general. Typhoid infection in hospitals was important, and ought to be prevented if possible. It was undoubtedly possible to increase the severity of the abdominal symptoms in cases of typhoid fever by secondary infections. For example, if, in a ward in which there were a number of cases of typhoid fever presenting no abdominal symptoms, one or two patients were admitted with a foul diarrhoea, diarrhoea was developed in the other patients, and abdominal symptoms generally became more numerous and more serious. A severe secondary infection, therefore, would increase the tendency to hæmorrhage and to perforation. In the Episcopal Hospital, in the last twenty-seven months, there had been between 2,600 and 2,700 cases of typhoid fever. Dr. Edsall exhibited a chart showing epidemics of hæmorrhage and perforation which had followed various secondary infections. In the prophylaxis of the secondary infections in typhoid fever, which might produce most serious lesions, he would first pay attention to the food. Milk, unless produced under trustworthy supervision, should always be pasteurized for patients who were seriously ill. At the Episcopal Hospital and in the University Hospital there was a special diet nurse for cases of typhoid fever, pneumonia, etc., a nurse who had nothing whatever to do with the excretions, discharges, bedclothes, etc. This nurse gave out all the diets. She also took care of the patient's mouth.

Dr. VICTOR C. VAUGHAN, of Ann Arbor, referred to the report of Dr. Shakespeare on typhoid fever during the Spanish-American war. This report showed that sixty per cent. of the cases were due to contact.

Dr. GEORGE M. KOBER, of Washington, said that nurses belonged in the susceptible age, as regarded typhoid fever. He approved of the pasteurization of milk for the general public as well as for patients who were seriously ill. Many cases of typhoid fever could be traced to the milk supply.

Dr. WILLIAM H. PARK, of New York, said that forty per cent. of the children in a certain scarlet fever ward suffered from otitis media, due to a nonvirulent diphtheria bacillus. He knew of typhoid fever patients who had had secondary infections, due to their food, and he referred to an epidemic of diarrhoea due to contaminated milk supply.

Dr. E. G. JANEWAY, of New York, said that it was the duty of the physician to take better care of the nurses under his charge. The nurse was more susceptible to typhoid fever on account of weakness due to overwork; consequently physicians should see to it that nurses had plenty of rest.

Dr. A. C. ABBOTT, of Philadelphia, referred to an epidemic of diphtheria in the University Hospital, which was due to infection from one of the internes, who had had diphtheria, but who had been released from quarantine after negative cultures had been obtained. He said that the release from isolation for diphtheria by culture methods was not always trustworthy. A convalescent diphtheria patient, by catching cold, might throw off diphtheria bacilli from the recesses of the nasopharyngeal mucous membrane which culture methods could not discover until the acute inflammation caused them to appear by increasing the secretions.

Dr. W. P. NORTHUP, of New York, said that the lesson of Dr. Edsall's paper was "eternal vigilance."

Dr. S. SOLIS COHEN, of Philadelphia, said that through his efforts separate wards had been established in the Philadelphia General Hospital for erysipelas patients, typhoid fever patients, and pneumonia patients. Patients should not be put in wards in which they might be able to transmit their diseases to other patients.

Dr. EDSALL said that the question of contact infection in hospitals was important; patients with acute infectious diseases should be isolated as much as possible. Physicians were too passive about the isolation of patients and ward hygiene. He was confident that the number of infections could be reduced.

Antitoxine and Postdiphtheritic Paralysis.—Dr. M. J. ROSENAU and Dr. J. F. ANDERSON, of Washington, read a paper thus entitled. Postdiphtheritic paralysis in the guinea pig, they said, was almost the exact counterpart of the same disorder in man, and they believed that we were justified in drawing conclusions applicable to human medicine concerning this subject from experiments made on guinea pigs. If guinea pigs were given mixtures of toxine and antitoxine, they will not die, although paralysis appeared after a definite time. If antitoxine was given twenty-four hours after the infection, it saved life and modified the paralysis. If given forty-eight hours after the toxine, antitoxine did not modify the paralysis so decidedly. Antitoxine given daily modified paralysis and saved life. If antitoxine was given when the paralysis developed, no result was observed in the course of the paralysis. The authors emphasized the importance of giving the remedy early. If the patient was not seen early, larger doses should be given in order to produce a favorable effect.

The Effects of White of Egg and Its Split Products Upon Animals was the subject of a paper by Dr. R. C. VAUGHAN and Dr. MAY WHEELER, of Ann Arbor. For a number of years past the authors had been studying the products obtained by splitting up various proteid molecules. The proteids with which they had worked were bacterial, vegetable, and animal. They had found that all these might be split up into poisonous and nonpoisonous portions. They had ascertained that the nonpoisonous products obtained by the cleavage of the proteids of the colon bacillus and of the typhoid bacillus induced specific immunity to the microorganisms of these diseases. Some two years ago they split white of egg into poisonous and nonpoisonous portions. They found that the nonpoisonous part sensitized the animal to the unbroken white of egg, and that the sensitization thus induced corresponded in all particulars with that produced by the injection of unbroken white of egg. The sensitizing effect of the nonpoisonous part was along the same line as the immunity induced to the typhoid and colon bacilli by the nonpoisonous portions obtained from the cellular substance of these organisms. When white of egg or its nonpoisonous portion was injected into a fresh animal, certain cells of the body were so influenced that they elaborated a new ferment, which, in the form of a zymogen, remained in the cell until activated by the second injection, when it was set free and split up the white of egg. The effect induced was the same as that caused by the poisonous portion. Similar phenomena occurred when animals were immunized or sensitized with the nonpoisonous portion of the typhoid or colon bacillus and subsequently inoculated with the living organism.

New Inventions.

A NEW DRAIN.

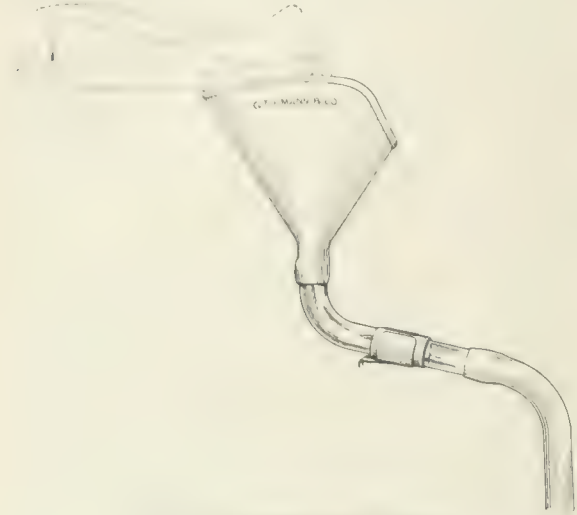
By JOHN J. DAVIS, M. D.,
New York.

This drain is intended for use with the speculum in gynæcological cases requiring irrigation before the application of a tampon or other remedial agents. It consists essentially of:

First.—A flexible rubber funnel, the upper and posterior portion being convex where it comes in contact with the speculum, the lower or anterior part concave.

to allow of free use of instruments (sounds, applicators, etc.).

Second.—An angular tube with a "catch," which retains the funnel in contact with the speculum, preventing downward and outward displacement.



Drain for gynecological cases.

Third.—Long flexible rubber tubing connecting angular glass tube with receiving vessel.

The advantages of the drain are: Simplicity of construction; the ease with which it may be cleaned, sterilized, and adjusted; the positive hindrance to the escape of irrigating fluids, this preventing the annoying condition which follows the escape of fluids in a posterior direction.

305 HENRY STREET.

Book Notices.

Problems in Animal Metabolism. A Course of Lectures Given in the Physiological Laboratory of the London University at South Kensington in the Summer Term, 1904. By J. B. LEATHES, Lecturer on Physiology in the Medical School of St. Thomas's Hospital. Philadelphia: P. Blakiston's Son & Co., 1906. Pp. viii to 1-205. (Price, \$2.)

As a concise, trustworthy, and highly entertaining presentation of the status of the main problems of physiological chemistry, this work is a model. While exhibiting an intimate acquaintance with the more technical details of the workings of physiological chemical laboratories, the author has avoided entangling the reader in them, and has kept in mind the needs of the average well informed physician, who wants to know what is being thought and done in research laboratories on metabolism. Not only is it specially adapted to the general medical reader, but during the year of its circulation we have found the book in the hands of specialists in physiology and pathology, all of whom have praised it.

Such topics as the origin and significance of acetone, lactic acid, and uric acid, fatty degeneration, the chemistry of digestion, and many others may be mentioned as being competently and briefly presented, and their direct bearing on medical problems clearly stated. Every well informed physician should be acquainted with this work.

Diagnosis of Organic Nervous Diseases. By CHRISTIAN A. HERTER, M. D., Professor of Pharmacology and Therapeutics at Columbia University. Revised and Enlarged by L. PIERCE CLARK, M. D., Visiting Neurologist to the Randall's Island Hospitals and

Schools, etc. With One Hundred and Nine Illustrations. New York: G. P. Putnam's Sons, 1907. Pp. x-690.

The original edition of Dr. Herter's book was published in 1892. On its first appearance it took an important place in the literature of neurology.

In the present revision it maintains its essentially distinctive position as an exceedingly able and comprehensive summary of the chief facts of neurological diagnosis. It is built upon very logical lines, and the student who uses it faithfully soon acquires a point of view in looking at neurological problems which no other work of its kind with which we are acquainted can give. We heartily commend it to students and practitioners alike.

The Treatment of Disease. A Manual of Practical Medicine. By REYNOLD WEBB WILCOX, M. A., M. D., LL. D., Professor of Medicine at the New York Postgraduate Medical School and Hospital, etc. Philadelphia: P. Blakiston's Son & Co., 1907. Pp. 911.

In a work on therapeutics there is little opportunity for originality, and anything very novel is likely to be more or less erratic. The qualities required are good judgment in the selection of material and a gift for lucid exposition. The teachings of Dr. Wilcox's book are in the main conservative and sound. In the few instances in which he has departed from well established and approved principles of practice it seems to us that he has done so without sufficient warrant. Thus, it is with regret that we observe his unqualified condemnation of the bath treatment of typhoid fever. In spite of the general well founded belief as to the fallaciousness of intestinal antiseptics, Dr. Wilcox urges as the best treatment the administration of the compound solution of chlorine "until complete disinfection of the alimentary canal is obtained." The statement that "when spots are seen upon the tonsils of children, it is always wise to give diphtheria antitoxine in therapeutic dosage without waiting for a bacterial examination," is, we believe, entirely too sweeping. There are many cases of follicular amygdalitis in which the spots of exudate do not coalesce and which are readily diagnosed as nondiphtheritic.

A Manual of Obstetrics. By A. F. A. KING, A. M., M. D., LL. D., Professor of Obstetrics in the Medical Department of the George Washington University, Washington, D. C., and in the University of Vermont, etc. Tenth Edition, Revised and Enlarged. With Three Hundred and One Illustrations in Text and Three Plates. Philadelphia: Lea Brothers & Co., 1907. Pp. xx-17 to 688.

This manual will not only constitute a good groundwork for the student at the beginning of his studies in obstetrics, but will also be a handy mentor during his course and later in his own practice. Not having the bulk of the usual textbook, it still serves the purpose of one. The first edition appeared a quarter of a century ago, and the present edition shows many changes and additions. The chapter on fecundation and on the nutrition of the embryo has been almost entirely rewritten, while extensive changes have been made in the chapters on pelvic deformities, cutting operations upon the mother, mutilating operations upon the child, placenta prævia, puerperal septicæmia, etc. The illustrations are well selected and instructive. Very interesting is the last chapter (xxxix), on the jurisprudence of midwifery.

BOOKS, PAMPHLETS, ETC., RECEIVED

Kokkogene Hautleiden (Furunkel, Erysipel, etc.) Von Dr. S. Jessner. Würzburg: A. Stuber, 1907.

Wellcome's Photographic Exposure Record and Diary. London: Burroughs Wellcome & Co., 1907.

Studie über Minderwertigkeit von Organen. Von Dr. Alfred Adler, Wien. Berlin und Wien: Urban & Schwarzenberg, 1907.

Pædiatrics. The Hygienic and Medical Trêatment of Children. By Thomas Morgan Retch, M. D., Professor of Pædiatrics, Harvard University. Fifth Edition, Rearranged and Rewritten. Illustrated by Numerous Engravings in the Text and by Colored Plates. Philadelphia and London: J. B. Lippincott Company, 1907.

A Treatise on the Principles and Practice of Medicine. By Arthur R. Edwards, A. M., M. D., Professor of the Principles and Practice of Medicine and of Clinical Medicine in the Northwestern University Medical School, Chicago, etc. Illustrated with 101 Engravings and 19 Plates. Philadelphia: Lea Brothers & Co., 1907.

The Essentials of Histology, Descriptive and Practical. For the Use of Students. By E. A. Schäfer, LL. D., Sc. D., F. R. S., Professor of Physiology in the University of Edinburgh, etc. Seventh Edition. Philadelphia: Lea Brothers & Co., 1907.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon-General, United States Public Health and Marine Hospital Service, during the week ending May 17, 1907:

Smallpox—United States

Places.	Date.	Cases.	Deaths.
Florida—Duval County, Jacksonville	Apr. 27-May 4	1	1
Florida—Santa Rosa County	Apr. 27-May 4	3	
Georgia—Augusta	Apr. 30-May 7	1	
Illinois—Belleville	Apr. 20-27	1	
Illinois—Springfield	May 2-9	2	
Indiana—Elkhart	May 1-11	1	
Indiana—Indianapolis	Apr. 28-May 5	5	
Indiana—South Bend	Apr. 28-May 11	8	
Iowa—Ottumwa	Apr. 28-May 4	7	
Kansas—Lawrence	Apr. 1-30	2	
Kentucky—Louisville	May 2-9	3	
Louisiana—New Orleans	Apr. 27-May 4	9	
Massachusetts—Chelsea	Apr. 27-May 4	1	
Massachusetts—Lawrence	Apr. 27-May 4	4	
Massachusetts—Pittsfield	May 4-11	1	1
Michigan—Detroit	Apr. 28-May 11	9	
Michigan—Holly	Dec. 10-Apr. 3	75	estl-ted.
Minnesota—Stillwater	Apr. 1-30	8	
Missouri—St. Joseph	Apr. 27-May 4	10	
Missouri—St. Louis	Apr. 27-May 4	1	
New York—Buffalo	Apr. 27-May 4	2	
New York—New York	Apr. 27-May 4	3	
New York—Niagara Falls	Apr. 27-May 4	2	
North Carolina—Greensboro	Apr. 27-May 4	3	
Ohio—Toledo	Apr. 27-May 4	2	
Pennsylvania—New Castle	Apr. 1-30	1	
South Carolina—Charleston	Apr. 1-30	1	
Tennessee—Memphis	May 4-11	1	
Texas—Bell County	May 6	3	
Texas—San Antonio	Apr. 27-May 4	1	
Virginia—Richmond	Apr. 27-May 4	1	
Washington—Spokane	Apr. 27-May 4	13	
Wisconsin—Milwaukee	Apr. 27-May 4	6	

Smallpox—Foreign

Austria—Trieste	Apr. 13-20	2	
Brazil—Bahia	Mar. 23-Apr. 13	17	
Brazil—Para	Apr. 13-27	4	3
Brazil—Rio de Janeiro	Mar. 30-Apr. 14	3	1
Canada—Sherbrooke	Apr. 1-30	44	
Canada—Vancouver	Apr. 20-27	1	
Chile—Coquimbo	Apr. 13	Present.	
Chile—Iquique	Apr. 13	Present.	
China—Hongkong	Mar. 23-30	20	16
Colombia—Barranquilla	Apr. 6-13	1	1
Cuba—Habana	May 3	1 on S.S.	
Egypt—Cairo	Apr. 8-15	Alphonso.	
France—Paris	Apr. 20-27	8	1
France—St. Etienne	Apr. 1-15	1	
Germany—General	Apr. 13-20	18	
Great Britain—Aberdeen	Apr. 13-20	1	Imported
Great Britain—Liverpool	Apr. 20-27	7	
India—Bombay	Apr. 9-16	4	
India—Calcutta	Mar. 30-Apr. 6	87	
India—Madras	Apr. 6-12	1	
India—General	Apr. 22-29	18	
Italy—Palermo	Apr. 13-20	1	1
Italy—Torre Annunziata	Apr. 27	11	4
Italy—Turin	Apr. 27	5	1
Mexico—Jalapa	Apr. 28-May 3	2	
Portugal—Lisbon	Apr. 13-20	11	
Russia—Moscow	Apr. 6-13	15	
Russia—Odessa	Apr. 13-20	15	4
Russia—Riga	Apr. 13-20	13	

Spain—Barcelona	Apr. 10-20	4	
Spain—San Fernando de Guixos	Apr. 20-27	1	
Spain—Valencia	Apr. 21-28	9	
Turkey—B. Asia—Basceuth	Mar. 9-15	1	
Yellow Fever—Foreign			
Brazil—Mato Grosso	Apr. 1-20	1	
Brazil—Para	Apr. 1-27	8	
Brazil—Rio de Janeiro	Mar. 20-Apr. 14	9	
West Indies—Trinidad Port of Spain	Apr. 13-19	1	
Cholera—Foreign			
India—Bombay	Apr. 9-16	2	
India—Calcutta	May 3-Apr. 6	7	
India—Rangoon	Mar. 30-Apr. 6	7	
Plague—Foreign			
Hawaii—Honolulu	Mar. 10-12	2	2
Other Foreign			
Brazil—Bahia	Apr. 6-13	2	1
Brazil—Para	Apr. 13-27	4	3
Brazil—Rio de Janeiro	Mar. 30-Apr. 14	9	3
Chile—Antofagasta	Apr. 13	20	7
Chile—Santiago	Apr. 13	Present.	
Chile—Talca	Apr. 13	Present.	
China—Hongkong	Mar. 23-30	2	2
India—Calcutta	Apr. 23-30	62,897	75,681
India—Bombay	Apr. 9-16	1	161
India—Calcutta	Apr. 30-Apr. 6	299	
India—Rangoon	Mar. 30-Apr. 6	109	
Peru—Chapen	Apr. 3-10	6	2
Peru—Lambayeque	Apr. 3-10	3	2
Peru—Lima	Apr. 3-10	9	9
Peru—Paleta	Apr. 3-10	7	5
Peru—Trujillo	Apr. 3-10	7	5
Turkey in Asia—Djeddah	Mar. 31-Apr. 14	46	46
Turkey in Asia—Tor, Quarantine Station	Mar. 31	1	1

Public Health and Marine Hospital Service:

Official List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the United States Public Health and Marine Hospital Service, for the seven days ending May 15, 1907:

- AMESSE, J. W., Passed Assistant Surgeon. Leave of absence granted for fourteen days, from May 14th, amended so as to be effective from May 19, 1907.
- BAILEY, C. W., Acting Assistant Surgeon. Granted leave of absence for seven days, from May 20, 1907.
- BROOKS, S. D., Surgeon. Authorized to proceed to San Pedro, Cal., not oftener than once in three months on station business.
- BRYAN, W. M., Assistant Surgeon. Directed to proceed to New Orleans, La., and report to the medical officer in command for duty and assignment to quarters.
- CARMICHAEL, D. A., Surgeon. Granted leave of absence for fifteen days, from May 28, 1907.
- FROST, W. H., Assistant Surgeon. Granted leave of absence for one day, May 12, 1907.
- GARDNER, C. H., Passed Assistant Surgeon. Assigned to duty on the United States Revenue Cutter *McCulloch*.
- GOODMAN, F. S., Pharmacist. Granted leave of absence for two days, from May 13th, under paragraph 210 of the Service Regulations.
- GRUBBS, S. B., Passed Assistant Surgeon. Granted leave of absence for fourteen days, from May 16, 1907.
- GUITERAS, G. M., Surgeon. Directed to proceed to Gulf Quarantine Station for temporary duty, upon completion of which to rejoin station at Mobile.
- HERRING, R. A., Assistant Surgeon. Directed to proceed to Ellis Island, N. Y., reporting to the chief medical officer for duty.
- LANZA, A. J., Assistant Surgeon. Directed to proceed to San Francisco, Cal., and report to the medical officer in command for duty and assignment to quarters.
- LAVINDER, C. H., Passed Assistant Surgeon. Leave of absence granted for one month, from April 24th, amended to read sixteen days only.
- MATHEWSON, H. S., Passed Assistant Surgeon. Directed to report at the Bureau en route from Pomfret, Conn., to Pittsburgh, Pa.
- McINTOSH, W. P., Surgeon. Reassigned to duty at Portland, Me., effective May 28, 1907.
- ONUF, B., Acting Assistant Surgeon. Granted leave of absence for five days, from May 6, 1907, under paragraph 210 of the Service Regulations.
- PETTUS, W. J., Assistant Surgeon General. Granted leave of absence for two days, from May 9, 1907.

- ROSENAU, M. J., Passed Assistant Surgeon. Granted leave of absence for one day, May 11th, under paragraph 189 of the Service Regulations.
- STONER, GEORGE W., Surgeon. Granted leave of absence for two days, from May 13th, under paragraph 189 of the Service Regulations.
- VON EZDORF, R. H., Passed Assistant Surgeon. Granted leave of absence for two days.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending May 18, 1907:

- APPEL, AARON H., Lieutenant Colonel and Deputy Surgeon General. Promoted to a deputy surgeon general, with the rank of lieutenant colonel, to date from May 10, 1907.
- BUSHNELL, GEORGE E., Major and Surgeon. Granted leave of absence for thirty days.
- DESHON, GEORGE D., Major and Surgeon. Granted four months' leave of absence on surgeon's certificate of disability, to take effect on or about June 12, 1907, with permission to go beyond the sea.
- FOSTER, CHARLES L., First Lieutenant and Assistant Surgeon. Granted ten days' leave of absence.
- MAUS, LOUIS M., Colonel and Assistant Surgeon General. Promoted to an assistant surgeon general, with the rank of colonel, to date from May 10, 1907.
- MOSELEY, EDWARD B., Colonel and Assistant Surgeon General. Retired from active service on account of disability incident thereto.
- O'CONNOR, R. P., First Lieutenant and Assistant Surgeon. In addition to present duties at Fort Crook, Neb., will, on May 11, 1907, temporarily assume charge of the office of the Chief Surgeon, Department of the Missouri, Omaha, Neb.
- PATTERSON, R. U., First Lieutenant and Assistant Surgeon. Granted two months' leave of absence.
- PIPES, HENRY F., First Lieutenant and Assistant Surgeon. Upon arrival at San Francisco, Cal., will proceed to the Army General Hospital, Washington, D. C., for duty.
- PURNELL, HARRY S., First Lieutenant and Assistant Surgeon. Ordered to proceed to Denver, Colo., for the purpose of appearing as a witness before the retiring board at that place.
- RENO, WILLIAM W., Captain and Assistant Surgeon. Granted leave of absence for twenty days, to take effect upon the arrival of another medical officer at Fort Riley, or so much thereof as he may be able to take advantage of before sailing for the Philippine Islands.
- RICHARD, CHARLES, Major and Surgeon. Detailed as a member of a board of officers to meet at Washington, D. C., to consider the subject of purchase of ground for a rifle range in the vicinity of Washington.
- TRUBY, WILLARD F., Captain and Assistant Surgeon. Granted leave of absence for one month.
- VEDDER, EDWARD B., First Lieutenant and Assistant Surgeon. Upon arrival at San Francisco, Cal., will proceed to Fort Douglas, Utah, for duty.
- WILSON, WILLIAM H., Major and Surgeon. Promoted to surgeon, with the rank of major, to date from May 10, 1907.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending May 18, 1907:

- BACON, S., Acting Assistant Surgeon. Detached from the Naval Hospital, Norfolk, Va., and ordered to the Naval Station, New Orleans, La.
- DELANCY, C. H., Passed Assistant Surgeon. Detached from the Navy Yard, Washington, D. C., and ordered to the Florida.
- DYKES, J. R., Passed Assistant Surgeon. Detached from the Naval Station, New Orleans, La., and ordered to the Mayflower.
- DUNNIG, J. T., Assistant Surgeon. Detached from the

Naval Hospital, New York, N. Y., and ordered to the Severn.

- JONES, A. McK., Acting Assistant Surgeon. Detached from duty with Naval Recruiting Party No. 4, June 1st, and ordered to duty at Naval Recruiting Station, Chattanooga, Tenn., on June 3, 1907.
- LONGABAUGH, R. I., Assistant Surgeon. Ordered to the Naval Hospital, Annapolis, Md.
- OHNESORG, K., Passed Assistant Surgeon. Detached from the Mayflower and ordered to the Navy Yard, Boston, Mass.
- OMAN, C. M., Passed Assistant Surgeon. Detached from the Ohio and ordered to the Arkansas.
- RICHARDS, T. W., Surgeon. Detached from the Naval Hospital, Norfolk, Va., on May 19th, and ordered to the Kansas.
- ROSSITER, P. S., Passed Assistant Surgeon. Detached from the Naval Academy and ordered to the Nevada.
- STUART, M. A., Assistant Surgeon. Ordered to the Naval Hospital, Norfolk, Va.

Births, Marriages, and Deaths.

Married.

- BARNARD—BOSLER.—In Carlisle, Pennsylvania, on Thursday, May 9th, Dr. Everett Pusey Barnard and Miss Eliza Harnian Bosler.
- CABANNE—DOHERTY.—In St. Louis, Missouri, on Saturday, May 11th, Dr. James S. Cabanne and Mrs. Delia Doherty.
- HARUFF—WAGGONER.—In Greeley, Colorado, on Wednesday, May 8th, Dr. Oscar Haruff and Miss Reta Waggoner.
- MATTHEWS—HOBKIRK.—In Waddington, N. Y., on Tuesday, May 7th, Dr. Herbert W. Matthews and Miss Wayne L. Hobkirk.
- McGEE—CORLISS.—In Denver, Colorado, on Sunday, May 12th, Dr. Rea P. McGee and Miss Margaret H. Corliss.
- MURRELL—CLARKE.—In Richmond, Virginia, on Tuesday, May 14th, Dr. Thomas Whitehead Murrell and Miss Gertrude Clarke.
- VICKERS—SULLENDER.—In Saratoga Springs, N. Y., on Thursday, May 16th, Dr. Harry W. Vickers and Miss Susie L. Sullender.

Died.

- BROADNAX.—In Greensboro, North Carolina, on Thursday, May 9th, Dr. John G. Broadnax, aged seventy-five years.
- CUMMINGS.—In Omaha, Nebraska, on Sunday, May 12th, Dr. J. A. Cummings, aged thirty-five years.
- DESELLEN.—In Jamaica, Long Island, N. Y., on Wednesday, May 15th, Dr. Ernest Maltravers Desellen, aged fifty-eight years.
- GILLET.—In Dorchester, Massachusetts, on Wednesday, May 15th, Dr. H. H. Gillett.
- GOODWILLIE.—In Yonkers, N. Y., on Wednesday, May 15th, Dr. David H. Goodwillie, aged seventy-three years.
- GRANT.—In Aberdeen, South Dakota, on Saturday, May 4th, Dr. Alexander Grant.
- HARLOW.—In Woburn, Massachusetts, on Monday, May 13th, Dr. John M. Harlow, aged eighty-seven years.
- JOHNSON.—In Taylor, Texas, on Wednesday, May 8th, Dr. Jordan Johnson, aged eighty-four years.
- MOORE.—In Mount Washington, Kentucky, on Tuesday, May 14th, Dr. Edward M. G. Moore, aged eighty-two years.
- NEILL.—In Chicago, on Tuesday, May 14th, Dr. Charles Neill, of Toronto, Canada.
- OTTLEY.—In Baltimore, on Wednesday, May 8th, Dr. Charles Williams Ottley, of Atlanta, Ga., aged thirty-six years.
- SHEERAR.—In Wellsville, N. Y., on Tuesday, May 7th, Dr. Harvey M. Sheerer, aged seventy-nine years.
- TRENWITH.—In New York, on Thursday, May 16th, Dr. Walter Day Trenwith.
- WILEY.—In Philadelphia, on Friday, May 17th, Dr. Eugene Wiley.

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Original Communications.

THE MORPHOLOGICAL DIAGNOSIS OF PATHOGENIC PROTOZOA.*

By JAMES FAYING, M. D.,
New York.

Zoologists seem to be in agreement that when one encounters a protozoon under the microscope the morphology alone carries immediate conviction that the structure is one of a living organism.

In 1904 in conversation with Schaudinn I was much interested in hearing him say that he had never been greatly occupied with the search for unknown protozoa, that the organisms of this class which he had encountered had always revealed themselves at once and unmistakably as living organisms, and that the chief labor of the investigator was not to discover new protozoa, but to work out the cycles of the numerous forms already presenting. This clear and instinctive recognition of morphological characters seems to have been an important factor in enabling this remarkably acute observer to pick out the *Treponema pallidum* in a field where others had failed to recognize its presence or significance. From the writings and remarks of other zoologists, Pfeiffer, Hertwig, Schuberg, Calkins, and others, the same impression must be drawn that at some stages, if not all, protozoan morphology is absolutely distinctive and characteristic.

To the general pathologist this impression of the striking morphology of protozoa is greatly strengthened by his experience with recognized pathogenic protozoa in man and the higher animals. The amoeboid motion, dancing pigment, vividly stained protoplasm and nucleus, rosettes, crescents, and flagella, of the malarial parasite, together, or even singly, are sufficiently pronounced features to convince an inexperienced layman that they belong to a living structure. Equally simple with present histological methods is the recognition of amoeba coli, the Leishman-Donovan bodies in kala-azar, the various piroplasms, the extensive group of trypanosomes, and the spiral organisms whose zoological position is perhaps still uncertain.

Among the sporozoa of lower animals, while some forms are lacking in characteristic morphology, so far as I can judge from the textbook descriptions, these are always associated with other developmental forms which leave no doubt that a protozoon is present. The only disagreement

among zoologists in this field concerns, not the existence of the protozoon, but the right of certain intracellular bodies to be included in the cycle, and the relations of one set of forms to another.

In the recognition of protozoa the features most relied upon are: (1) amoeboid motion, which is not constant; (2) the presence of a definite and often characteristic nucleus; (3) dividing forms; (4) encysted forms; (5) spores and the structures concerned in their development, which are usually very characteristic and quite unmistakable. Basing his conclusions on data of this sort the zoologist is enabled to proceed with nearly absolute certainty in the recognition and study of protozoa as they occur in their chief habitats.

A striking contrast is presented when one meets the conditions surrounding the search for protozoa in a group of diseases of man and some other animals, of unknown aetiology, but in which there has been for many years a persistent search for protozoan factors by a large number of competent zoologists and pathologists. The reference is especially to cancer, the exanthemata, and rabies. Differing radically from diseases of known protozoan origin, in this field progress has been barred at the outset by uncertainty regarding the nature of various intracellular bodies regarded by some observers as protozoa, and by others as products of cellular degeneration. Thus the attempt to establish even the first of Koch's postulates is met by unusual difficulties, and the chief progress in recent years has been the recruiting of the ranks of the two opposed classes of students of these suspicious intracellular bodies. While the recognition of protozoa may be a very simple matter the identification of cellular degenerative products is one of the most difficult fields in pathological histology, and one which has long engaged the attention of many acute and resourceful workers, with the result that we are still unable to explain many of these products in terms of cellular chemistry and physiology. The studies of Dunham on lecethin forms, those of Albrecht and Adami on the myelin bodies, and of Hertwig and Albrecht on the structure of the metazoan nucleus, indicate that some phases of this subject have only been touched.

I believe that the chief cause of this deadlock of opinion lies in the tendency of one group of observers to trust exclusively to the morphological evidence, which appeals but feebly to those who are impressed by the contrary circumstantial or collateral evidence.

It is the object of this paper to urge that serious

* Read before the American Association for the Advancement of Science, Section K, Physiology and Experimental Medicine, New York, December 27, 1906.

dangers are inherent in the morphological diagnosis of protozoa in diseased human tissues, and that the collateral evidence must be favorable before new and very peculiar protozoa can be established as the causes of disease.

The great danger surrounding the morphological diagnosis of protozoa in human tissues lies in the fact that in many diseases, some of bacterial origin, intracellular processes give rise to structures closely resembling protozoa. In cancer and other tumors, variola, scarlatina, measles, rabies, glanders, diphtheria, and in some pyogenic infections of certain organs, there are series of intracellular bodies, differing considerably in each disease and sometimes in each organ, and therefore more or less specific for each disease and organ, some of which may be peculiar protozoa, but all of which bear some resemblance to protozoa. In this field the demonstration of protozoa requires far more comprehensive data than suffice where the protozoan forms are absolutely characteristic, where the collateral evidence is entirely favorable, and where cellular degenerative products do not seriously intrude.

Variola.—In variola there is a series of peculiar intracellular bodies about which opinions have been at variance. Some of the forms considerably resemble protozoa, but the morphology is certainly not of the type which zoologists recognize at once, in the manner described by Schaudinn, as protozoan. In 1904 I presented specimens of vaccine bodies in sections and in Klatsch preparations, and sections showing the intranuclear forms of Councilman and Calkins, to several zoologists in Europe and America. I do not pretend to quote the mature opinions of these authorities, but may say that I was surprised to find that they were not inclined to accept any of the bodies as protozoa. Many pathologists, however, were more uncertain in their views.

In further studies of vaccine bodies during the past two years I have found no reason for altering the conclusion drawn in 1904 from the examination of Klatsch preparations, namely, that the vaccine body is a cellular structure, and that no parasitic organism has yet been discovered in it. This view has been confirmed by many who have examined these preparations and recently in independent studies by Prowazek, Supfle, Mühlens and Hartman, and Borrel and Burnet.

I have long searched for a protozoon closely resembling the vaccine body but have found none and have been told by zoologists that there are none. In conversation with L. Pfeiffer, I learned that a crustacean protozoon parasite, *Glugea Mulleri*, gave forms most nearly resembling the vaccine body, and he kindly gave me specimens of infected crustaceans (*Gammarus pulex*), but on examination I find fundamental differences between vaccine bodies and *Glugea Mulleri*. Some forms of sporozoa with reticulated protoplasm strongly resemble vaccine bodies in Klatsch preparations, but with the sporozoa other extremely characteristic forms are encountered which leave no doubt of the protozoan nature of the series. No such characteristic forms have been found to be derived from or associated with the vaccine body. If the vaccine body is to be established as a protozoon some such characteristic developmental forms must be discovered. If no such forms exist, then the protozoan nature of vac-

cine bodies cannot be established on the morphological evidence available, and the disease remains of undetermined ætiology.

Regarding the intranuclear bodies, I think the evidence is rather clear that these are transformed nuclear elements of the diseased cell, a view which has recently been confirmed by studies of Schrumpf and of Supfle.

There is considerable circumstantial evidence against the protozoan nature of smallpox and of the vaccine and intranuclear bodies. The disease is the most readily transmissible of the exanthems, being carried, it is said, through the air a quarter of a mile from smallpox hospitals; the virus is extremely resistant to drying; the histological process is marked not by cell consumption but by active necrosis similar to that produced by diphtheria and other diffusible bacterial toxins. There appear to be no known protozoan diseases of similar characters. Against the vaccine body must be urged the absence of amœboid motion, of definite nucleus at any stage, and of characteristic reproductive forms, its intimate connections with the cytoplasm, its complete destruction by agents which leave the virus intact (Foa), (Prowazek), and the characteristic mucous degeneration which I have found to terminate its growth in the cell. Against the intranuclear bodies stand their resemblance to nuclear constituents, their absence in vaccinia, and from most of the characteristic variolous lesions of the mucous membranes in the disease. Their occurrence is limited to one stage, not initial, of the necrosis of stratified squamous epithelial cells.

In the face of this contrary collateral evidence the direct morphological diagnosis of protozoa with hitherto unknown characters is entirely inadequate. It would seem to be the first task of those who would strengthen the protozoan theory of variola, to explain away this contrary collateral evidence and to supply from among known protozoa reasonable parallels for the structure of the vaccine bodies and for the behavior of the virus in the disease.

Some other hypotheses remain concerning the vaccine body, which is specific for the disease and in all probability is essentially connected with the virus. (1) It may harbor an invisible organism; but this has not been demonstrated. In the contagious epithelioma of birds, Borrel and Burnet describe very minute cocci in certain intracellular masses, but not in the structures which parallel the vaccine bodies. They appear to have done no control work on normal or diseased epithelial cells, and their sketches resemble the cell granules or involuting bacteria which are to be found in all normal corneal epithelium. (2) The mycoplasmic theory of the vaccine body may be mentioned to point out that the existence of parasites whose protoplasm is at one period fused with the protoplasm of the host cell, has not been accepted by those most competent to judge of it, the plant pathologists.

Scarlatina.—In scarlatina sufficient evidence in favor of the protozoan nature of the cytoplasmic bodies in the epithelial cells has not been obtained to warrant its discussion at this time. The studies of the past few years have tended to increase rather than restrict the importance of the streptococcus as a factor in scarlatina and have led some to conclude that this or a closely related bacterium is the

cause of the disease. In favor of this view stand the results of treatment by antistreptococcus serum, which seem to be quite as good as or better than in any known streptococcus infection. Park has recently studied an epidemic of scarlet fever disseminated by the milk of a cow suffering from a puerperal disease in which a streptococcus was apparently the exciting agent. Gabritschewski reports observations on a disease of horses (*Pruss*) showing much resemblance to scarlet fever, and in which a somewhat peculiar streptococcus is constantly present. The results of vaccination of man and horse by their particular scarlatinal streptococci in the hands of Gabritschewski, Zlatogoroff, and others, have been very encouraging. These observers report the occurrence of typical scarlatinoid rashes, pharyngitis, and strawberry tongue, followed by desquamation, in a certain proportion of cases after such vaccination. It is therefore clear that certain streptococci can produce a disease closely resembling scarlet fever in all important clinical features. What fact of equal significance can be mentioned in support of the protozoan origin of the disease?

On the other hand there are several considerations which prevent the acceptance of a streptococcus as the cause of this exanthem. Prominent among these is the immunity established after scarlatina, contrary to the rule with other streptococcus infections. The constant occurrence of streptococci in the disease it still remains possible to explain as a secondary infection, while specific biological and pathogenic characters have not been satisfactorily established for the scarlatinal streptococci.

Nevertheless, a careful study of the evidence bearing on the relation of streptococci to scarlet fever would seem to encourage further studies in this field rather than an exclusive search for protozoa.

Measles.—In measles, the epithelial cells of the skin and mucous membranes exhibit a great variety of cytoplasmic and intranuclear bodies resembling those of variola. In 1902 I searched carefully through the tissues of eight cases of measles, and was much impressed by the great number and complexity of the intracellular bodies seen in nearly all regions lined by pavement epithelium, especially in the skin. On account of their rather negative character I have not published the results of that study, but may report from it that the cellular changes vary greatly in different cases, and are very extensive and complex and in some respects specific. In some cases the number and variety of cytoplasmic and intranuclear bodies greatly exceed anything seen in variola. In others the interepithelial and subepithelial lymph and blood channels contain myriads of peculiar granules which are also to be seen in some cells. Similar granules appear in similar numbers in other skin diseases, notably in pityriasis rosea. I am not inclined to interpret any of these appearances as strongly suggestive of protozoa, while most of them seemed clearly referable to the products of cellular degeneration. In measles the same problem awaits solution as in variola, but under somewhat less favorable circumstances, and it does not seem likely that the investigator armed only with morphological information will make much headway with it.

Rabies.—In rabies there is a series of bodies in the

nerve cells and processes discovered by Negri, which some believe to be the protozoan cause of the disease. These bodies are specific of rabies, and their peculiar morphology at once suggests that they may be protozoa. The evidence bearing on the nature of these bodies is partly morphological, but chiefly collateral. From a careful study of some very successful smear preparations made by Williams and Poor, or by the method devised by them, it is clear that these structures do not belong in the class of protozoa which can be identified at a glance. They are not known to be amœboid. The granules interpreted as nuclei are not more distinctive of this important element than are the granules of blood plates which many of the forms considerably resemble. The budding forms suggest, but do not demonstrate, multiplication. Calkins compares the large forms of Negri bodies with the encysted *Amœba proteus*, but in other stages the parallel between Negri bodies and *Amœba proteus* is certainly not close. Williams regards the entire cycle as most nearly approximating that of the microsporidia. Some forms of the nucleus, however, lead one for a parallel to plasmodiophora, a plant parasite, while other nuclear phases suggest resemblances to *Glugea Lophii*, a microsporidium which produces tumor like cysts filled with myriads of spores in the central nervous system of a fish. It is evident that the various forms of the Negri bodies do not accord with any known protozoan cycle, but, like Korotneff's cancer parasite, possess characteristics of several orders. The morphological evidence, therefore, does not appear to be adequate to establish the protozoan nature of the Negri bodies.

The collateral evidence, however, is much stronger. The bodies occur only in rabies, and only in the ganglion cells. Their numbers bear a certain relation to the time of appearance and to the grade of infectivity of the nervous tissue, although, according to Remlinger, the bodies are most abundant in Ammon's horn, while the medulla is the most highly infectious area of the central nervous system. The very acute cases yield chiefly the very small forms, the slower cases the larger forms. It is difficult even to suggest any possible source of the bodies from the altered elements of the ganglion cell. Yet it is a fact that ganglion cells sometimes yield very remarkable forms of degenerative products which it is quite impossible to explain. Finally the virus is very susceptible to heat and some other physical influences, and the common mode of transmission of the disease accords with a protozoan origin. On the other hand, in a certain proportion of cases the bodies have not been found (Bertarelli); they are scanty or absent after inoculation by the most virulent fixed virus; widely different classes of animals are inoculable, from man to frog (Lote), and the structure of the bodies varies to a noticeable extent in each class (Schiffman, Galli-Valerio); while no trace of the bodies has been found in the salivary glands or saliva, the agency which nature provides for the transmission of the disease.

Rabic virus passed through a Berkefeld filter No. V, or even through a Chamberland F (Di Vestea), retains an infectivity which, while distinct, is enfeebled, slower in action, and more susceptible to physical and chemical agents. Hence, it is supposed

that the virus may assume extremely minute forms capable of passing such filters. The smallest recognizable forms of Negri bodies cannot meet these requirements, while the more minute granules which may possibly be derived from the larger bodies have been found in conditions other than rabies (Luzzani, Williams). Maceration seems to destroy the bodies before annulling the virulence of the tissue (Daddi). D'Amato placed fragments of Ammon's horn containing many Negri bodies under the dura of rabbits. The Negri bodies gradually disappeared, while the adjacent brain tissue became infective, although showing no Negri bodies.

The position of the Negri body, therefore, is uncertain, its morphology is not clearly protozoan, but the collateral or circumstantial evidence, perhaps, favors the protozoan theory. The hypothesis which appears to be most generally entertained is that the virus is an ultramicroscopic organism, as Pasteur believed, and that it is in some way connected with tissue proteids which constitute the Negri body. In any event, the morphological study of Negri bodies, especially that of Williams and Lowden, seems to have contributed about all the evidence of which it is capable, and the future status of these bodies will probably depend upon newly acquired data of another type.

In molluscum contagiosum, clavelée, and the contagious epithelioma of birds, much the same conditions surround the interpretation of the intracellular bodies peculiar to those diseases, and in none of them has the morphological study led to a definite result.

Strongly opposing the hasty morphological diagnosis of protozoa in diseases of unknown ætiology stand the results of the histological study of glanders, the minute histology of the epithelial lesions following experimental inoculation of diphtheria toxine, and the history of cancer parasites.

Glanders.—In glanders the epithelial cells involved in the cutaneous pustules exhibit a variety of intracellular bodies resembling in sections those of measles and variola, although on minute examination these structures are found to differ considerably from the vaccine bodies. The oil immersion lens reveals in sections or spreads of the necrotic material from glanders abscesses a highly specific reaction of the nuclear elements to the toxine which does not occur in any other process with which I am familiar, and which permits a comparatively certain diagnosis of glanders from other forms of necrosis. Were it not for our knowledge of the *Bacillus mallei*, some of these cellular products might be suspected of being protozoa.

The reaction of corneal and other epithelium to diphtheria toxine yields a surprising number of nuclear and cytoplasmic structures differing in various animals, many of which are identical in appearance with some forms of protozoa. I think that if the oil immersion lens had been used as assiduously over the entire field of human pathological histology as it has been in diseases of unknown ætiology, instances of specific cell degenerations would be considerably increased.

Cancer.—In cancer the intracellular bodies have been interpreted as protozoa of almost every known variety, according to contemporaneous interests, and

by authorities of the highest standing, including such names as Pfeiffer, Metchnikoff, and Virchow. It cannot be denied that the "cancer parasites," as a whole, exhibit as much of the morphology of protozoa as do any of the suspicious bodies in the other diseases of uncertain origin. Yet to-day the tendency of opinion is strongly against the protozoan nature of any of these bodies, largely on account of the increasing force of collateral evidence against them. After long labor we now know that "cancer parasites" of one or another type may be produced by one of the following intracellular processes:

1. Degeneration and deformation of the lipoid nuclear membrane.
2. Hyperchromatosis with swelling and clumping of chromatin.
3. Vacuolar and hydropic degeneration of chromatin, linin, or plastin.
4. Karyorhexis.
5. Karyolysis.
6. Hypertrophy, subdivision, vacuolation, and extrusion of nucleolar substance.
7. Pathological mitosis.
8. Mucous, colloid, hyaline, and hydropic degeneration of cytoplasm.
9. Pathological keratosis.
10. Inclusion of red and white blood cells.
11. Invagination and digestion of one tumor cell by another.
12. Formation of pseudonuclei.
13. Incomplete cell division.
14. Multiplication of centrosomes.
15. Formation of chromidial substance.
16. Calcific deposits.
17. Secretory products.
18. Occasional saprophytic organisms.

All of these processes contribute to the protozoan-like bodies in malignant tumors, where their action must be regarded as more or less spontaneous. In diseases in which the natural tendencies of the cells are disturbed by the toxic influence of an unknown virus, similar results should be anticipated, and when they occur, the first assumption is that they arise from intracellular processes and not from invading parasites. The unfortunate history of much cancer investigation up to recent years must stand as a monumental warning against the morphological diagnosis of pathogenic protozoa. In this field, at least, the morphological criteria are too uncertain to justify a repetition of the errors of the past three decades.

On the other hand, the collateral evidence is almost conclusive against the protozoan origin of malignant neoplasms, since no parasitic invasion can explain the autonomy and organoid character of many tumors, and there is no parallel protozoan disease anywhere in the animal or vegetable kingdoms.

There are other ways in which the trained specialist in protozoa, and investigation directed from the standpoint of protozoology can further the knowledge of diseases of unknown ætiology.

Assuming that some of these diseases are really of protozoan origin, that theory can be strengthened or demonstrated by multiplying the details of collateral evidence. The greater portion of the work on these diseases has been concerned with this type of evidence, and there is encouragement for such workers in the fact that their results have permanent value, no matter what the cause of the disease studied may prove to be. I am inclined to think that at present this is the most fruitful field of research in the exanthemata. Significant results in this field are the recent demonstration of the filterability of some viruses; the local nature of the immunity in

inoculated vaccinia; and the production of immunity against vaccinia by means of filtered virus or by the subcutaneous injection of very dilute glycerinated virus without the production of the characteristic lesions (Casagrandi, Nobl, Kraus, and Volk).

The artificial cultivation of free swimming protozoa accomplished by Novy and McNeal has greatly encouraged further efforts in this direction, and opens up great possibilities to the worker with pathogenic protozoa. If the results of Lericux and Geets in the cultivation of *Treponema pallidum* can be verified, the nature of this organism will not long remain in doubt and an effective therapeutical agent is probably within reach. The artificial cultivation of intracellular protozoa is a more difficult problem, but hardly so hopeless as to suppress efforts, especially with species which have extracellular stages. Other additions to the present technical methods of studying protozoa seem very desirable, especially if organisms without characteristic morphology are to be identified as the cause of disease. If they cannot be cultivated in vitro, some may, perhaps, be enriched in the body or by incubation of the infected tissues. The study of toxine production by protozoa, of the mechanism of immunity against them, and of the possibility of preparing antagonistic sera for such as may be obtainable in quantity, are problems which have not received such attention as their theoretical and practical importance deserves.

The study of related diseases in lower animals has thrown much light on the infectious diseases of man, and hardly a beginning seems to have been made in the exploration of this field. Little seems to be known of the exanthematous diseases in lower animals.

On the bacterial side the filterability of trypanosome blood has weakened an important support of the theory of submicroscopic organisms and partly cleared the way for the demonstration of the protozoan origin of some diseases hitherto attributed to invisible microorganisms.

On the other hand, advances in the knowledge of bacterial chemistry and immunity, the study of aggragins, and of the modifications in the biological properties of bacteria exerted by different tissue proteids, as shown by Bartel and Neumann for lymph nodes and tubercle bacilli, and especially the comparison of the interactions of related bacterial strains among different animals, all suggest that the actions of some well known bacteria may be of greater variety and scope than has hitherto been recognized.

Although the foregoing review has led to conclusions which are not strongly encouraging to the protozoan theory of the origin of cancer and the exanthemata, it would be unwise to predict the results of future investigation. It cannot be denied that some suggestive facts and difficult arguments may be presented in favor of the protozoan nature of some of these diseases. It is not at all likely that protozoology has already exhausted the forms of lowly organized life. The negative attitude of the present paper, which is shared perhaps by the majority of pathologists, might be changed if protozoa could be found which produce active toxins, and minute resistant spores unaccompanied by readily recognizable trophozoites or sporocysts. The pres-

ent state of our knowledge, however, points to the conclusion that the virus of smallpox and rabies, and possibly of measles, is intimately connected with the tissue proteids which form the bulk of the specific cell inclusions of these diseases, but is itself of a nature not understood and not yet paralleled among known protozoa.

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THE PATHOLOGY, DIAGNOSIS, AND TREATMENT OF ACUTE UNILATERAL SEPTIC INFARCTS OF THE KIDNEY.*

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One year ago the writer presented a paper to the Chicago Medical Society, entitled Some Observations Upon Acute Unilateral Septic Infarcts of the Kidney.

In that communication he reviewed the entire subject of hæmatogenous renal infection, called particular attention to the acute unilateral variety, spoke of its obscure symptomatology, its rapidly fatal progress, and its successful treatment by early nephrectomy. At the same time the writer de-

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scribed a series of laboratory experiments undertaken to ascertain if possible the various ætiological factors present in these cases. These experiments demonstrated the necessity of two essential conditions, namely, a bacteriæmia and a diminished resistance on the part of the tissues of one kidney; they also clearly indicated the effects of trauma, calculus disease, and renal retention, as determining causes of the unilateral character of the lesion. The paper was illustrated by numerous photographs of the gross lesion, as well as a few microphotographs of the histological appearances in both the human and experimental varieties.

Since the publication of that paper a number of successful cases have been reported to the New York Surgical Society, and the criticism has been made that nephrectomy is not always necessary in these cases. In my former paper I was dealing only with what might be termed the peracute form of the disease, in which nephrectomy is absolutely necessary to save life; and although I distinctly indicated that the milder varieties of the malady could be treated by less radical measures, I feel that it is desirable to present another communication on the subject in which the milder as well as the severer types of the affection will be considered.

The disease, like appendicitis, lies on the border line between medicine and surgery, in that in its milder manifestations it frequently recovers spontaneously, while its severer types require prompt surgical treatment; unlike appendicitis, however, its symptomatology is still obscure, as in the majority of instances the condition is unrecognized or wrongly diagnosticated in the early stage when treatment is most effective.

It is a well known and generally accepted fact that during the progress of any acute infectious or septic disease certain microorganisms, giving rise to the symptoms, find their way into the blood current, and are either destroyed by the bactericidal action of the blood itself or by substances encountered in the passage of the blood through certain organs, or they are excreted through the kidneys. Pernice and Scagioni in 1894 published in Virchow's *Archiv* the results of an elaborate series of experiments showing the anatomical changes occurring in the kidney by the excretion of various pathogenic and nonpathogenic bacteria.

Albarra in his admirable thesis published in 1889 reviewed the entire subject of renal infection, and concluded that ordinary pus cocci may under certain conditions be eliminated through the kidneys without producing marked anatomical lesions; their elimination, on the other hand, may give rise to a bacteriuria, to a glomerular nephritis with degeneration of the epithelium, to multiple nonpyogenic infarcts, to pyogenic infarcts giving rise to multiple abscesses, to perinephritic abscess, to pyelonephritis, or to a rapidly fatal toxæmia. He also stated that the effects of trauma, excessive functional activity, the presence of toxic products, and renal retention, all served to accentuate the process and to favor the formation of graver lesions.

The presence in the blood of pathogenic microorganisms capable of producing metastatic accidents in the kidneys may, according to Israel, arise from absorption from the intestine, from acute infectious

diseases, from local suppurations, as furuncles, carbuncles, paronychias, etc., and also from infection of the lower urinary passages.

It would naturally be inferred that such blood infections would produce bilateral lesions, but Simon, Alexander Johnson, and others have emphasized the fact that in a large number of cases of hæmatogenous infection the renal lesions are unilateral; the cause which determines the lesions in one kidney only being a diminished resistance of that organ as a result of previous disease or injury.

In enumerating some of the predisposing factors, Israel mentions calculus disease, ureteral obstruction producing renal retention, trauma, floating kidney, etc., as frequent determining causes of unilateral lesions. Singer, in 1883, reported a case of unilateral renal suppuration occurring during an attack of typhoid fever in a kidney severely injured eighteen years before the attack. Quinke reports a similar case seventeen years after such an injury. Numerous other examples of unilateral renal suppuration following trauma are reported by Simon, Tuffier, Rayer, Johnson, Rosenburger, and Levi. Regarding the infecting agent in these cases, Israel considers the colon bacillus the most frequent, but also reports cases due to the streptococcus and *Staphylococcus aureus*. Alter has reported a case of unilateral renal abscess in which the pneumococcus was demonstrated. Cases due to the typhoid bacillus have been reported by Singer and Comba. Cohn in 1902 reported four cases of suppurative nephritis in which the infection was traced to furuncles, in one of which the presence of a calculus was evidently the determining cause. More recently Jordan has reported twelve cases of renal and perirenal suppuration in which small foci of peripheral infection were considered as ætiological factors.

It will thus be seen that hæmatogenous infection of the kidney has been recognized for many years, that the various pathological changes in the kidney substance as the result of such blood infections have been well worked out by the pathologist, and the relationship between this form of infection and the more easily recognized gross renal suppurations has been admitted by most clinical observers.

It seems to the writer a matter of considerable surprise that while all of this work was being carried out no one seemed to recognize the most serious and important clinical type of acute hæmatogenous renal infection, or, if they recognized it, they failed to place their observations on record or describe it clinically.

So far as I have been able to ascertain, it was not until the publication of my original paper on the subject, in May, 1906, that the disease was described as a distinct pathological entity.

In that communication, after referring to the ætiology of pyonephrosis, pyelonephritis, and perinephritis, I stated that "in nearly all the cases to which reference had been made the disease was well advanced, and one or more fairly large collections of pus were found. It is not, however, of these easily recognized terminal conditions of renal infection that I desire to speak, but rather of the earlier stages of the process, when the clinical picture is often one of an acute general infectious disease, in which the local manifestations are so slight,

and so generally overshadowed by the symptoms of general toxæmia; that they are frequently overlooked, unless a more than ordinarily careful physical examination is made. These cases are often so acute in their onset, and so rapidly progressive in their septic manifestations, that death may ensue before any distinctive renal or urinary symptoms are observed."

CASE I. My first observation of this severe type of renal infection occurred eleven years ago at the City Hospital. The patient was a female, aged twenty years, admitted to my service, suffering from double femoral fracture and multiple contusions of the body. After some three weeks of treatment, during which there were no evidences of disease or infection of any kind, she suddenly became violently ill with symptoms suggesting an attack of grip. The temperature rose to 104° F. or more; the pulse was accelerated; she complained of pain in the back and extremities. After two or three days of observation, a careful examination revealed tenderness over the right kidney, albumen and pus in the urine. Exploratory nephrotomy was advised, and refused by the patient. The symptoms increased in severity; she complained of constant aching pain in the right flank, had a number of chills, became delirious, and presented every evidence of a profound and rapidly progressive sepsis. At no time did she complain of pain or tenderness over the left kidney. Consent was finally obtained for operation.

Under general anæsthesia, the right kidney was exposed by a lumbar incision. The perirenal fat was found to be oedematous, the surface of the kidney was studded with deep red elevated lesions. On incising the cortex, the entire parenchyma was found to be filled with minute abscesses, the largest being about a half centimeter in diameter. There was considerable hæmorrhage from the cut surface of the kidney, which was with difficulty controlled. As the patient's condition was critical, the kidney incision was packed with gauze, and the external wound partly united and dressed. She died within twelve hours.

Then followed two other cases almost identical in onset, clinical history, and pathological findings. In both of these cases the kidney was explored, incised and drained. Both died within twenty-four hours.

Up to this time I feared to perform a nephrectomy for the reason that I believed the lesion to be bilateral, although the symptoms pointed to one side only. This view was strengthened by a striking case of bilateral hæmotogenous infection reported by Lilienthal, in which recovery followed a double nephrotomy.

The next case was, as will be seen, more carefully studied, and the treatment being the same, the autopsy gave me my first definite conception of the true pathological lesion, and clearly pointed to more rational and radical treatment.

CASE II.—The patient was a man, twenty-one years of age, who complained of general abdominal pain and frequent micturation, with hæmaturia. The symptoms temporarily subsided, but three weeks later the pain became localized over the right kidney region, and was accompanied by a gradually rising temperature and other symptoms of progressive sepsis. On examination, there was tenderness and some muscular rigidity in the right flank. The urine was albuminous, contained some pus, a few red cells and casts. Urine from the right kidney was scanty, highly albuminous, contained many red and a few white cells; that from the left practically normal. Temperature, 105.5° F.; leucocytes, 20,200.

No evidences of other septic foci could be found. The right kidney was exposed by a lumbar incision, and freely opened by a cortical cut. The entire parenchyma was studded with minute abscesses. Drainage was inserted, and the wound partly closed. There was marked improvement in the symptoms, which continued for several days; but this improvement was succeeded by a gradual return of the septic manifestations, with scanty albuminous urine, delirium, and death.

On autopsy, the right kidney was found to be completely destroyed by numerous abscesses. The left kidney, spleen, and other organs showed the presence of very recent septic infarcts, which had not broken down. Cultures demonstrated *Streptococcus pyogenes*. In this case the lesion was evidently unilateral at the time of the first operation, and had the kidney been removed at that time recovery would probably have occurred.

My first successful case was the following:

CASE III.—A woman, twenty-eight years, experienced an attack of chills, fever, and general prostration, and was treated for malaria. An examination of the blood revealed no plasmodia, and upon subsequent examination a prolapsed and tender kidney was easily palpated. Urinary examination was negative. Under chloroform anæsthesia the kidney was explored and incised. The cortex was studded with small areas, the exact nature of which could not be determined at the time. The organ was removed, and on subsequent examination it was found to be the seat of numerous infarcts. The patient made a complete recovery.

The following case is of interest as illustrating how rapidly improvement may follow the removal of such a kidney, even under the most unfavorable conditions:

CASE IV.—A female child, three years of age, was brought to the Vanderbilt Clinic, suffering from left sided abdominal pain, high fever, and great bodily weakness. The temperature was found to be 103.8° F.; pulse, 130. An examination of the chest and abdomen was negative; slight tenderness in the costovertebral angle. Urine drawn by catheter was found to be albuminous, and contained a few pus cells. No vesical irritability, no other sign of local infection.

The patient was transferred to the Roosevelt Hospital, where it was discovered that the hands and feet were desquamating. Inquiry regarding exanthematous disease revealed the fact that she was supposed to have had measles four weeks before she was admitted. She was subsequently examined by Professor A. Jacobi and an inspector from the Board of Health. Both pronounced the condition in all probability one of scarlatinal desquamation. The infant was removed to her home and quarantined. Five days later the mother came to the clinic and reported that the child had grown steadily worse and was apparently dying. The temperature had ranged between 103° F. and 105.5° F. during the week; the pulse from 130 to 160; the urine was scanty and cloudy; the child was thoroughly prostrated. Assisted by Dr. Turnure and Dr. Darrach of the Vanderbilt Clinic surgical staff, I did a hasty nephrectomy in the parents' home. The kidney was surrounded by an oedematous fatty capsule; the organ was enlarged and highly congested; the fibrous capsule presented nothing abnormal, but on stripping it from the renal parenchyma the surface of the kidney was covered with deep violet, oval, and irregular lesions, which, upon section, contained bloody serum and granular-necrotic tissue. On section, the cut surfaces presented many similar lesions, as well as a number of triangular infarcts. Cultures taken from several lesions with the greatest care showed no growth after three days. The improvement in the child was marvelous. The temperature dropped several degrees within twelve

hours, the pulse improved, and the infant made an uninterrupted recovery.

The following two cases illustrate how closely this condition may resemble acute appendicitis or inflammation of the gallbladder. In no less than six instances during the past two years the writer has known of a primary anterior incision being made in the belief that the symptoms were due to some intra-abdominal infection. In each instance no intra-abdominal lesion was found, the laparotomy wound was closed, and an acutely infected kidney discovered by a lumbar incision.

CASE V.—A woman, twenty-two years of age, experienced a severe pain in the epigastrium and right side of abdomen, with vomiting and high fever. She was sent to the Roosevelt Hospital with a diagnosis of acute appendicitis. On examination, the appendix region was free from evidences of inflammation. There was, however, pain and muscular rigidity in the right hypochondriac region, with tender points over the gallbladder and the costovertebral angle. Temperature, 105° F.; pulse, 120; leucocytes, 18,000.

Cystoscopic examination was negative; urine from the right kidney scanty and slightly albuminous, few pus and blood cells; that from the left kidney was abundant and apparently normal. Widal negative; no plasmodia; no tubercle bacilli in the urine. The diagnosis rested between an acute infection of the gallbladder or kidney, small anterior incision; gallbladder and liver found to be normal, but the right kidney seemed enlarged. Anterior incision united, and the kidney exposed by lumbar route. The perinephritic fatty tissue was oedematous; the kidney enlarged, highly congested, and the seat of innumerable small infarcts. Nephrectomy was performed. After operation, the temperature fell from 105.5° F. to 99° F. within twelve hours, and thereafter remained practically normal.

She made a satisfactory convalescence. Microscopic examination of the specimen showed it to be filled with minute embolic abscesses.

One year later this patient married and became pregnant. I had an opportunity of examining her urine before and after her confinement. It was normal in every respect. Her confinement was normal, and she presented the picture of robust health two months later.

CASE VI.—A young married woman was admitted to the Roosevelt Hospital, suffering from right sided abdominal pain, high fever, and extreme nervous restlessness. Six weeks before she had an attack of supposed peritonitis from unknown cause. After recovery from this, she remained well until forty-eight hours before admission to the hospital, when she began to complain of pain in the region of the gallbladder, with vomiting, and a rapidly rising temperature. On admission the temperature was 105.8° F.; pulse, 140; respiration rapid and jerky. Examination of the chest was negative. On attempting to palpate the abdomen, the patient complained of such extreme tenderness and became so excited and hysterical that nothing could be elicited. (These symptoms were undoubtedly exaggerated by the presence of coexisting exophthalmic goitre.) The following morning the temperature had fallen to 102° F., but the pulse was extremely rapid and weak. Abdominal palpation revealed tenderness and marked muscular rigidity in the upper right quadrant, tenderness to pressure over the lower costal arches, and some pain on pressure over McBurney's point and in the costovertebral angle. Blood count showed 16,000 leucocytes, and 79 per cent. polynuclears. Urine was abundant, contained a trace of albumin and a few pus cells. She was immediately prepared for operation, the diagnosis resting between cholecystitis, subphrenic

abscess, or abscess of the liver. An incision through the right rectus muscle revealed no intraabdominal lesion, save a slight redness and oedema of the peritonæum overlying the right kidney. The anterior incision was closed, and the kidney exposed by a lumbar opening. The perirenal fat was oedematous, the kidney was highly congested, and its cortex studded with dark red lesions. Nephrectomy, followed by an intravenous infusion of 1,500 c.c. of normal salt solution. After removal, the kidney was bisected and found to be the seat of numerous infarcts and minute abscesses.

Cultures taken from a freshly opened abscess gave a growth resembling the colon bacillus, but on further investigation it was found to be a nonpathogenic organism, probably a contamination. The patient made an uninterrupted recovery, the temperature falling to normal immediately after operation.

I desire now to give an example of the severest type of the disease which has come under my observation. It also illustrates the disastrous results of delay. If she had been admitted to the hospital in the early stage of her disease, nephrectomy would undoubtedly have saved her life:

CASE VII.—A woman, thirty-one years of age, was admitted to the Roosevelt Hospital in a condition of profound septic intoxication. She had had occasional attacks of abdominal pain, of short duration, for the past six months. Eleven days before admission she experienced severe pain in the right side of the abdomen and flank, extending upward to the chest; this was accompanied by chills, high fever, delirium, and great prostration. At the time of her admission to the hospital her temperature was 106.5° F.; pulse rapid and weak; leucocytes, 35,000. On palpation, the only sign that could be elicited was tenderness and muscular rigidity in the right kidney region. The urine contained albumin and a few pus cells. As her condition was extremely critical, she was immediately prepared for operation. On exposing the right kidney there was found a small focus of pus in the fatty capsule near the kidney cortex. The condition of the patient would not admit further exploration, and she was saved from death on the table only by an intravenous infusion of salt solution. The temperature rapidly rose to 112° F., and the patient died in a few hours. Autopsy revealed only multiple abscesses and infarcts of the right kidney. Cultures showed *Staphylococcus pyogenes aureus*.

Although numerous other examples of the severe type of the disease could be reported from my own experience or from those of my colleagues at the Roosevelt Hospital, I desire next to call attention to a few of the milder types in which measures less radical than nephrectomy may be successful.

CASE VIII.—A woman, twenty-six years of age, complained of severe right sided abdominal pain, with nausea, headache, fever, and general prostration. Ten days later she was admitted to the Roosevelt Hospital; temperature, 102° F.; pulse, 120; leucocytes, 19,000, of which 81 per cent. were polynuclears. She complained of a bearing down sensation on urination. The following day the temperature rose to 104° F.; 82 per cent. polynuclears on differential count. The patient was then cystoscoped. The examination of the bladder negative; ureters were catheterized, and from the right there was a scanty flow of urine containing albumin, a few pus cells, and blood from the left, more abundant flow, few red cells, practically no pus.

Physical examination revealed tenderness in the right costovertebral angle. The kidney was not palpated. Left side free from tenderness. Operation was performed on the tenth day of illness. Right kidney exposed by lumbar incision; oedema of perirenal fat.

Kidney was highly congested and presented six distinct cortical areas of induration. Each of these was opened and packed with separate strips of gauze tape, which were allowed to protrude through the partly closed parietal wound. Of the six lesions only one contained pus, the others necrotic tissue. The renal pelvis was opened; the mucous membrane appeared normal. Cultures made from the pus showed the bacillus coli communis. The patient made a tardy but complete recovery.

The following case is of interest on account of the double lesion.

CASE IX.—A female patient, thirty-two years of age, was sent in with diagnosis of acute appendicitis. The attack began by a severe right sided abdominal pain, high fever, and prostration. There was marked muscular rigidity over the appendix and gallbladder regions, with tenderness both in front and in the costo-vertebral angle. In this instance the urinary analysis showed no red cells, only albumin and a few leucocytes. Temperature on admission was 102.4° F.; pulse, 120; leucocytes, 20,400. Although the temperature fell to 99.5° F. during the night, she was prepared for operation. An anterior incision was made, and the gallbladder and appendix found to be normal. This was closed and a lumbar cut revealed a large polycystic kidney studded with minute infarcts and small abscesses. As the toxic symptoms were already beginning to subside in this case, and as there was a strong probability of there being a polycystic and possibly imperfectly functioning kidney on the opposite side, we punctured several of the large foci and stripped the fibrous capsule from the organ. She had a slow convalescence, complicated by an embolism of the third division of the right pulmonary artery. The recovery was, however, complete.

The next case, still more subacute, is of interest on account of the fact that the lesion resulted in complete absence of function.

CASE X.—It was that of a married woman, twenty-three years of age, who was admitted to the Roosevelt Hospital with a diagnosis of renal calculus. Seven weeks before admission she experienced a severe pain in the right loin, radiating to the groin and thigh. This pain continued for one to two hours and then subsided. Following the paroxysm of pain she had a severe chill, with fever and vomiting, which lasted for two days. During this period the temperature reached 103° F. Since the acute attack the patient had complained of more or less constant pain and discomfort in the region of the right kidney and ureter, with occasional attacks of a more acute nature.

On admission to the hospital she seemed weak and anæmic. Her temperature was 100° F.; pulse, 120; and the blood count showed 10,000 leucocytes, 56 per cent. polynuclears. Physical examination revealed tenderness in the right costovertebral angle, and along the course of the ureter to the pelvic brim. On cystoscopic examination the bladder appeared normal. There was no efflux from the right ureteral orifice, but an abundant flow from the left. Both ureters were catheterized. From the left there was an abundant flow of normal urine, from the right only a few drops were obtained after forty-five minutes. X ray examination was negative. From these findings a diagnosis of subacute infarcts was made and an operation was advised.

Under ether anæsthesia, the right kidney was explored by a lumbar incision. The fatty capsule was somewhat thickened and adherent. The surface of the organ was studded with small, whitish areas which were moderately indurated. No calculus was felt. The fibrous capsule was stripped from the organ, the kid-

ney replaced, and the wound sutured. There was a moderate febrile reaction following operation, which subsided on the seventh day. The wound healed by primary union. All sutures were removed on the tenth day. Fourteen days after the operation she was again cystoscoped and the ureters catheterized. From both catheters there was an abundant flow, 12 c.c. from the right and 15 c.c. from the left in twenty minutes. Although the urine from the right side showed a very faint trace of albumin, its percentage of urea was higher than that from the left, showing that its function had been practically restored.¹

To remind my readers that one may occasionally be mistaken regarding the virulence of a given case, I will relate the history of a patient whose symptoms and appearance seemed to warrant treatment less radical than nephrectomy.

CASE XI.—A married woman, thirty years of age, had a severe chill, followed by high fever, prostration, and abdominal pain. When seen by her attending physician there was marked muscular rigidity and tenderness over the entire right half of the abdomen, the point of greatest tenderness being immediately over the middle of the ascending colon. When seen by the writer in consultation there was also found marked tenderness in the right costovertebral angle.

She was immediately transferred to the Roosevelt Hospital, where, upon examination, the urine was found to contain a trace of albumin, a few red blood corpuscles and pus cells. Temperature was 103° F.; pulse, 120.

On exploring the right kidney by a lumbar incision, it was found to be oedematous and highly congested. Two or three fair sized cortical abscesses were found and numerous smaller infarcts. The capsule was stripped from the kidney, the larger abscesses incised and packed with gauze, the wound partly closed, and an intravenous infusion of salt solution given. There was a marked temporary improvement in the symptoms. The temperature and pulse fell and she seemed brighter, but the pain continued and required morphine in considerable quantities for its relief. Two or three days later the temperature began to rise, the pulse increased in frequency, she became restless and delirious. We hesitated to remove the kidney on account of the uncertainty regarding the functional competence of the opposite organ.

Her sepsis continued to deepen, however, the tongue became dry and brown, the urine diminished in quantity, the delirium increased, she became more and more prostrated. As it was evident that she would surely die unless the kidney was removed nephrectomy was hastily performed. The operation was associated with a considerable loss of blood from the slipping of a ligature on the renal pedicle. The loss was immediately made up by a large intravenous infusion of normal salt solution, which undoubtedly had a favorable effect on the profound toxæmia. The relief was striking, the pulse improved, the temperature gradually fell to the normal, the mind cleared, and convalescence was finally established. Although many months elapsed before she was completely restored to health, her recovery was in the end complete.

All of the foregoing cases have been examples of a more or less severe type of the disease which imperatively demanded some form of surgical intervention. I now desire to speak of the mildest type of the affection.

During the past eighteen months I have observed

¹ Since this patient returned to her home I have observed from her correspondence that she has put in the right of the left kidney. I have not, however, had an opportunity of examining her.

eight or ten cases presenting symptoms practically identical with the preceding, but much milder in character, all of which under expectant treatment went on to a presumably complete recovery. I will give but three examples.

CASE XII.—A young lady, twenty-five years of age, experienced an attack of right sided abdominal pain, with fever vomiting, tenderness, and muscular rigidity over the right lower quadrant. These symptoms had been preceded by a subacute attack of follicular tonsillitis. Her attending physician regarded the case as one of appendicitis, and asked me to see her in consultation with a view to operation. At the time of my visit the temperature was 100° F., pulse 110. There was a slight tenderness over McBurney's point, which extended upward nearly to the costal border. The muscles were moderately rigid. There was marked tenderness in the costovertebral angle. As no urinary analysis had been made I declined to operate upon her on the ground that in my opinion the lesion was a unilateral hæmogenous renal infection. I ordered an examination of the urine, and predicted that a trace of albumin would be found, a few red cells, and pus, if the specimen was precipitated by the centrifuge. The analysis proved this prediction to be correct. The patient made a satisfactory recovery without operative treatment.

CASE XIII.—A young man, twenty-three years of age, was operated upon by me for an acute streptococcus appendicitis with spreading peritonitis. Although quite septic at the time of operation he made a satisfactory convalescence. About the sixth day after operation, when the temperature had fallen to the normal, he experienced an acute stabbing pain over the lower ribs on the left side, with a sharp rise of temperature. I regarded the case as one of acute pleurisy, but on physical examination was surprised to find no definite signs in the chest. I called an expert medical consultant, who also was unable to find evidences of plural infection. We were at a loss to account for the pain and fever which continued for two or three days, when a urinary analysis showed a trace of albumin and a small number of pus and red cells. Subsequent examination revealed the characteristic costovertebral tenderness, and daily examination of the urine showed the unmistakable evidences of renal infection. The symptoms persisted for ten days or two weeks, but were never severe enough to warrant operative interference.

At the same time another patient in the hospital, after an operation for the removal of the appendix, experienced an identical attack. This case was subsequently seen by Dr. Klotz, who by cystoscopic examination and an examination of the separated urines, was able to confirm our diagnosis. She made a tardy though complete recovery.

The chronic forms of this disease are not infrequently encountered, and furnish an interesting group for further study, but the limits of this communication will not permit me to consider these at this time.

In conclusion, permit me to say a few words regarding diagnosis and treatment.

Diagnosis.—The disease may or may not be ushered in by a chill. When present it generally indicates a severe type of infection. The initial rise of temperature is high, generally 104° F. or 105° F., the pulse is frequently 120, or above. The toxæmia is marked from the first, and with the high fever suggests often an acute grip, lobar pneumonia, or one of the exanthemata. Then follows a more or less vague pain in the abdomen or flank correspond-

ing to the side of the lesion. Tenderness and muscular rigidity over the region of the appendix or gallbladder leads often to error in believing one of these organs to be the seat of disease. As the urinary secretion from the infected kidney is greatly diminished and is largely diluted by the abundant secretion from the unaffected organ the mixed urine when passed or drawn from the bladder is often quite normal in appearance, and the slight trace of albumin, blood, and pus is often overlooked unless a more than ordinarily careful examination is made.

The one pathognomonic sign present in all cases is a marked unilateral costovertebral tenderness.

Treatment.—In regard to treatment, the cases should be divided into three classes.

The severe type, in which the temperature remains high, and the toxæmia is rapidly progressive. These cases require nephrectomy at the earliest possible moment.

The milder cases are those in which the initial temperature may be high, but begins to fall within forty-eight hours, and where the toxæmia is less marked. These cases may often be successfully treated by decapsulation, which relieves the intense congestion and allows Nature to complete the reparative process. Where one or more cortical abscesses are present they should be opened and drained.

In the mildest type, the case may be treated expectantly with a reasonable prospect of complete recovery, although the writer has observed two or three patients in which a chronic pyelonephritis has remained.

Statistics.—The following are my own statistics to date: Nephrotomy and drainage in five patients of the severe type, all died. Nephrectomy in eight patients of the severe type, all recovered. Nephrectomy decapsulation and drainage in five patients of the milder type, all recovered. Expectant treatment in four or more patients of the mildest type, all recovered.

61 WEST FORTY-EIGHTH STREET.

PYOCYANEUS ULCER OF THE CORNEA.

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Infection of the superficial structures of the eye by the bacillus of blue pus is an extremely rare occurrence, and in the few cases on record led to the destruction of the cornea, if not of the globe. Almost without exception, the infection was a mixed one, the usual pyogenic bacteria being present, and complicating the clinical picture. Aside from its rarity, the following case is of interest on account of the bacteriological findings and the rapid course of the disease, as a pure culture of *Bacillus pyocyaneus* was found in the conjunctival sac and in scrapings from the cornea, the latter membrane becoming completely destroyed, in spite of the most vigorous treatment, in the course of a few days.

CASE.—On the evening of August 17, 1906, I was called by Dr. Louis Friedman to see a patient of his, a young girl of sixteen years of age, in perfect health, who had been brought into town from a nearby summer resort on the Jersey coast on account of a sore eye. Two days before, returning from a ride in an

automobile in the afternoon she had felt slight irritation in the right eye, and had some pain during the night. Next morning the eye was somewhat red, and a boric acid wash was prescribed by a local practitioner. The same afternoon the redness increased, and "a gray spot appeared on the sight." There was no history whatever of traumatism, and the patient was in perfect health. There had been no watering of or discharge from the eye previous to the complaint of pain. Examination showed a large, shallow ulcer occupying the lower third of the cornea of the right eye. There was little or no infiltration except along the corneal margin, below, extending upward in a crescentic line to near the horizontal meridian. There was marked chemosis of the conjunctiva, but no discharge whatever. The ulcer was grayish, and covered with a sloughy débris which could be wiped off. There was no pain in the eye, and manipulations showed a certain amount of anaesthesia.

The ulcer was freely cauterized with pure tincture of iodine, a solution of atropine 1 per cent., instilled, hot applications made constantly, and chlorine water, one drachm to the half pint, used as an irrigation every hour. A cover glass smear of matter from the ulcer was examined by Dr. Friedman and found to be negative. Next morning the local condition was much worse, and the actual cautery was used freely. In addition, a subconjunctival injection of bichloride of mercury, 1:3,000, was made under morphine, and constant hot irrigation kept up. By afternoon of the same day the entire surface of the cornea had become involved, excepting a very narrow area running along the limbus. Within the next day or two the destruction of the cornea was complete, although perforation did not take place. The destructive process had taken in the entire thickness of the cornea, and should rather be described as an abscess with necrosis than as ulcer in the ordinary sense. Redness and conjunctival chemosis disappeared in a few days, and the eye became quiet. The diseased cornea now began to bulge under the influence of intraocular pressure, and a staphyloma developed, making it advisable to remove the eye on account of the deformity and the danger of possible sympathetic ophthalmia. Enucleation was performed about six weeks later, and an artificial eye is now worn.

As the examination of the matter from the cornea had shown nothing in spread, cultures were made and submitted to Dr. Charles Ryttenberg, of the pathological department of Mount Sinai Hospital, to whom I am indebted for a very careful examination and for the following report: The first specimen was a culture from the corneal ulcer in a tube of Loeffler's medium. Subcultures demonstrated *Bacillus pyocyaneus* pure. A second culture was made from the cornea, and from the conjunctival sac. These were also received in Loeffler's medium, and the subsequent inoculation demonstrated the same organism as had been found before, in both specimens. Inoculation tests were made with the pure culture obtained from the corneal ulcer. On August 23rd, a guinea pig was inoculated intraperitoneally, with a 4 per cent. saline emulsion of the *Bacillus pyocyaneus* made from an agar slant of about twenty-four hours' growth. The animal died within forty-eight hours. Autopsy showed a general peritonitis of purulent character, involving especially the liver, spleen, and stomach. The right pleural cavity contained a small amount of turbid fluid. The base of the right lung showed three or four hæmorrhagic spots, the size of peas. The subperitoneal vessels of the abdominal parietes in the vicinity of the site of inoculation are delicately outlined in bright green (probably due to growth of the *Bacillus pyocyaneus* after death, the animal having died during the night). Cultures were made from the peritoneal effusion, pleural fluid, heart blood, bladder, sectioned kidney, lung (hæmorrhagic

spots, sectioned), spleen, and liver. In each and every instance the *Bacillus pyocyaneus* was found in pure culture. Inoculations made from these organs were positive.

To sum up the interesting features of this case. We have, first, the lack of any determinable injury. Pyocyaneous infection is generally traumatic in origin, the injury having been inflicted with a soiled weapon or with dirt. One would hardly expect to find the *Bacillus pyocyaneus* far removed from crowded habitations, out doors at the sea shore. The bacillus was found in pure culture, and the matter from both ulcer and conjunctival sac was otherwise sterile. In spite of this, there was nothing characteristic in the local conditions. The ulcerated area was a dirty gray. There was no green discoloration whatever which might have led us to suspect the nature of the pathogenic organism. The course of the ulceration was rapid and malignant. There was no perforation; the cornea became entirely shrunken and opaque and then gave way to intraocular pressure. After the development of the ulcer there was no pain. The patient did not feel the cauterization with pure tincture of iodine, ordinarily quite painful, and had little or no discomfort, even from the application of the actual cautery.

(60 EAST FIFTH-EIGHTH STREET)

DIAGNOSIS OF TUMORS OF THE BLADDER.*

BY HUGH CABOT, M. D.,
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While there is nothing new or startling which I can present upon the subject of diagnosis the fact that at the present time diagnosis of these growths is by no means as satisfactory as it might be leads me to hope that I may present the subject in such a light as to show why this uncertainty has been allowed to exist and by what methods it may be overcome.

It is so thoroughly orthodox for the surgeon to plead that his failure to cure disease is due to tardy diagnosis on the part of the physician that I should be lacking in duty to this representative assemblage if I did not also urge that the failure of early diagnosis is to an extent responsible for failures in treatment. But I am prepared to go beyond this bald statement and insist that if the methods now at our disposal are used no new growth of the bladder will escape detection, except those in which the patient fails to consult any physician.

The failure to take advantage of methods now well known and thoroughly understood is a serious responsibility, though it is difficult to convince the average practitioner that delay will frequently expose his patient to serious and perhaps fatal risks. But the tendency to defer accurate decision and await developments does expose the patient to very real dangers, of which the following are the most important:

1. Continued growth of the tumor which may render an operable growth entirely inoperable.
2. Infection of the bladder with all its train of painful and distressing symptoms.
3. Infection of the upper urinary tract.
4. Damage to or destruction of

* Read before the New York Academy of Medicine, March 21, 1907.

one kidney by pressure upon the lower end of the ureter.

This is a somewhat alarming array of possibilities, and yet it may truthfully be said that in many instances early and accurate diagnosis may be the means of avoiding any or all of these catastrophes. Responsibility for early diagnosis rests largely upon the general medical practitioner and upon the medical consultant. It is by them that these cases are first seen, and it is from them that we must expect material aid toward prompter measures. And yet with all that has been said in regard to an early diagnosis of surgical conditions it still remains a fact that the average practitioner will allow a transient, painless hæmaturia to pass by undiagnosed, and for fear of disturbing his patient or some equally unsound reason will put off accurate diagnosis and await the development of symptoms. If there is any method by which I can convince these gentlemen that they are assuming a risk for which they would not wittingly be responsible I will promptly adopt it.

The cardinal symptoms of tumor of the bladder are painless hæmaturia and some disturbance of bladder function. It is needless to suggest that these symptoms are common to a great number of other conditions from which they must be distinguished. The hæmaturia of bladder tumor must be distinguished from that occurring in diseases of the kidney, ureter, prostate, and in other diseases of the bladder. Disturbances of bladder function occurring in connection with tumor, such as impediment of the stream, pain, frequency, pyuria are in no respect characteristic and are in fact frequently very suggestive of other conditions. Much ingenuity has been shown and, I think, largely wasted in developing methods by which these conditions could be distinguished, but I believe it may truthfully be said that only one of them is sufficiently accurate and free from exceptions. In a recent discussion on the diagnosis of hæmaturia I find the following statement: "If there are clots in the urine and the urine is bright red in color, it (the blood) is from the bladder. If it contains worm like casts it is ureteral, and if it is of dark color it is renal." It is against this sort of teaching that I would warn the general practitioner. It is true that a bright red urine and clots are most common in bladder hæmorrhage, but it is also true that this hæmorrhage may come either from the prostate or from the kidney. Worm like casts may come from the ureter, but on the other hand they are most commonly seen when the hæmorrhage is from the kidney, and long, narrow clots which to any but an expert would look like casts of the ureter may come from the bladder. Dark color simply means that the blood has been in contact with the urine for some time. It is true that this is more likely to occur with hæmorrhage from the kidney, but it is by no means unknown in bladder hæmorrhage or even in hæmorrhage from the prostate.

To take another example, hæmaturia accompanied by pain in the region of the kidney would naturally lead one to suspect that the hæmorrhage was of renal origin, but it must not be forgotten that many cases are on record in which exactly this symptom complex has been produced by tumor of

the bladder, which by pressing upon and obstructing the ureteral orifice has caused back pressure upon the kidney, temporary hydronephrosis, and pain. The picture may be made even more confusing by the bacteriological examinations of the urine. Thus in a case of intermittent hæmaturia with pain in the region of the left kidney, occurring in a comparatively young woman, examination of the urine between attacks was reported to show tubercle bacilli. These afterwards proved to be smegma bacilli, and examination with the cystoscope revealed the presence of a bladder tumor situated at the orifice of the left ureter.

When we come to consider the difficulties involved in a diagnosis of cases showing disturbance of bladder function, the snares and pitfalls are often more frequent. It is by no means uncommon to find tumor of the bladder simulating stone, by producing pain, frequency, sudden stoppage of the stream, and slight hæmaturia. The picture is almost classic though totally misleading. Another not uncommon source of error is found in those cases which simulate hypertrophy of the prostate, and this is particularly likely to occur in cases of cancer of the bladder occurring in men past middle life. The symptoms of obstruction may be far the most prominent. Frequency, particularly at night, inability to completely empty the bladder, pain, and evidence of cystitis may be present. Examination with the catheter may show residual urine, and though rectal examination will generally fail to show any considerable enlargement of the prostate, this does not essentially aid us, for we know that a prostate but little larger than normal on its rectal aspect may cause obstruction.

In the attempt to differentiate bladder tumors from diseases of the prostate we are again met by the same lack of symptoms absolutely diagnostic. Ulcerative conditions which occur in hypertrophy may lead to terminal hæmaturia intermittent in character, which by its symptoms alone is absolutely indistinguishable from tumor of the bladder.

Briefly stated, there are a few suggestive symptoms which should be borne in mind in connection with the diagnosis of tumor of the bladder. It should always be remembered that tumor may exist for a considerable length of time without causing any symptoms. Hæmaturia, which is the first symptom in half the cases and is practically always present at some stage of the disease, is by no means an early symptom in many cases. On the other hand profuse and even fatal hæmorrhage may occur from very small growths. The hæmaturia of bladder tumor is likely to be profuse, bright, terminal, and transient, and this picture belongs more particularly to the nonmalignant cases or those which have not reached the malignant stage. The bleeding of malignant growths is less profuse, more persistent, more often accompanied by pain. The stage of hæmaturia may be long or short, varying from many years to a few months. It is practically always followed by a stage of infection, with evidence of cystitis, pyelitis, and obstruction. In not a few cases the surface of the growth may become encrusted with lime salts. Pieces of this crust may break off, be passed in the urine and give rise to the belief that the condition is due to renal or vesicle

calculus. Clearly these symptoms are not diagnostic.

I have perhaps said enough to make it clear that if reliance is placed upon the signs, symptoms, and ordinary methods, we may be led inevitably to an incorrect decision and to delay which is quite unwarranted by the facts. I would not, however, be understood as advocating their neglect, but I would urge upon your attention the fact that these symptoms will not lead to an accurate diagnosis and are not to be depended upon.

There are, however, two methods of examination which are always valuable, and will almost inevitably lead to a correct diagnosis. I refer to examination either by rectum or by vagina, and to the use of the cystoscope.

Examination by rectum or by vagina, though valuable, is much less certain than cystoscopy. In the case of small, soft tumors, particularly papillomas, it will reveal nothing. If the growth is malignant, and infiltration of the bladder wall has gone on to any considerable extent, stiffening and thickening of the portion of the bladder wall lying above the prostate may often be felt, but a somewhat similar condition may exist in tuberculosis.

In massive tumors, such as some of the varieties of bald carcinoma, in sarcoma, myxoma, and fibroma, a considerable mass may be felt in the region of the bladder, but this is not always distinguishable from an overgrown vesical calculus.

Rectal examination is of most value in distinguishing disease of the bladder from that of the prostate, and it is generally possible to distinguish hypertrophic or neoplastic changes in the prostate from diseases of the base of the bladder. At best, however, this method of diagnosis is only suggestive and except to one expert in rectal palpation it is unreliable. We must, therefore, fall back upon the only thoroughly trustworthy method at our command, cystoscopy.

I will not take up your time by discussing the history and development of this essentially modern instrument, the cystoscope. Suffice it to say that it has now been brought to such a state of perfection, and such a variety of instruments is at our command, that cases will be rare indeed in which one expert in its use cannot arrive at a correct diagnosis by a visual inspection of the interior of the bladder. If the hæmorrhage comes from above the bladder it is always possible, by the use of this instrument, to decide that it comes either from one or from both ureters, and that the bladder is free from disease. If the bleeding is from the prostate or urethra the presence of the instrument itself will, in a vast majority of cases, be sufficient to stop the hæmorrhage for the time being, and we can then obtain a sufficiently clear medium in the bladder by the use of irrigating instruments to demonstrate beyond peradventure that this viscus is not at fault. There are occasional cases of new growths of the bladder from which the bleeding is so furious that a clear medium cannot be obtained. These cases will, however, be very exceptional if the instrument be in the hands of an expert, and even under these circumstances a satisfactory opinion can be arrived at by waiting a few days for the hæmorrhage to quiet down.

There are some cases in which the bladder tumor is so large and the cavity of the bladder so much reduced that a view cannot be obtained, but in these cases it is generally possible to demonstrate the presence of a tumor in the bladder region by bimanual examination. In very exceptional cases the hæmorrhage is so persistent and so copious as to render the use of the cystoscope impossible, but these will be rare indeed, and in them the surgeon is justified in doing an exploratory suprapubic cystotomy in order to arrive at exact conclusions. Cases will also occasionally be seen in which urethral obstruction makes the passage of the cystoscope for the time being impossible, but this difficulty may be overcome by urethral dilatation, external or internal urethrotomy, or by cystoscopy through a perineal boutonnière.

I have spent so much time in considering the possible difficulties of cystoscopy that I have perhaps made these difficulties appear too weighty. They are, in fact, all exceptional, and in the great majority of cases the cystoscope in the hands of an expert will do its work without difficulty. I do not pretend to think that it is an instrument which will be of value to the general practitioner or even to the general surgeon. Like all instruments requiring experience and delicacy of manipulation it can be used to the best advantage only by those whose opportunities are such that they can make constant, almost daily, use of it, and it will be valuable therefore only in the hands of those relatively expert.

That a diagnosis by means of the cystoscope presents some difficulties will be evident from the statement of Mr. Fenwick, who asserts that he excluded entirely from his record his first fifty cases of bladder tumor, as the examinations were entirely too inaccurate to be of value. Though this is probably unnecessarily radical, it may yet serve as a warning for the tyro who, after having examined a few cases, regards himself as pastmaster of the art. But the number of men in this country who are entirely familiar with the instrument is now so large that there can be but little excuse for the practitioner who does not avail himself of this possibility. There are, in nearly every large community to-day, men whose ability in this line is sufficient, and they should be encouraged by being asked to see all doubtful cases.

I have, perhaps, given the impression that I think tumors of the bladder are wrongly diagnosticated with greater frequency than is really the case, but this opinion has been forced upon me by the length of time over which the practitioners, at least in my neighborhood, are in the habit of observing a painless hæmaturia, and by the condition in which many of the cases present themselves at the hospital having existed and been known to exist for months or even years. I was startled, but the other day when in conversation with an eminent medical consultant he questioned me in regard to painless hæmaturia, and remarked that during the past year he had been observing with interest a woman of thirty-five with an intermittent hæmaturia, and was still at a loss to come to an accurate diagnosis, I found that he had never even considered the use of the cystoscope. I have now under my care a woman past middle life who eight months ago had a slight attack of painless

hæmaturia. During the following six months she was constantly under the observation of several physicians, was treated by extraordinary, and, I doubt not, most perfect regulation diet, by bladder irrigations, and by opiates, and came into my hands having steadily lost ground, contributing largely to these gentlemen's support, and never being offered anything which approached accuracy of diagnosis, except by the physician with whom I saw her. It is needless to say that a mass could readily be felt upon bimanual examination, and that the cystoscope showed a large, inoperable cancer of the bladder.

In conclusion I would urge that it is the duty of all practitioners, whether general or special, in the presence of painless hæmaturia, hæmaturia accompanied by pain which may seem to localize it elsewhere, or in cases of disturbance of bladder function of doubtful origin either to make use of the cystoscope or promptly to refer the patient to some one who can do so. Nothing is to be gained and much is to be lost by delay, and when the possible difficulties attending the use of the cystoscope are appreciated, no practitioner need feel any hesitation in admitting that he is himself not able to use this, the most accurate method of diagnosis.

1 MARLBOROUGH STREET.

EYESTRAIN IN SCHOOL CHILDREN.

BY WALTER S. CORNELL,
Philadelphia,

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That the physical welfare of children should be more closely associated with the profession of medicine than with sociology or pedagogy is not disputed by any one. Yet at the present time a remarkable display of interest and enthusiasm is being manifested by educators and philanthropic organizations in the prevention and correction of physical defects of children, while the great mass of physicians are but little concerned over the subject. Notwithstanding the early thorough studies of Dr. Samuel D. Risley,¹ which twenty years ago revealed the prevalence and effect of eyestrain in children, we seem to regard the school age as interesting to us only in connection with acute infectious diseases and appendicitis. Health officials and specialists are alive to the relation between special sense defects on the one hand, and physical and mental health on the other; but the writings of the former are too matter of fact to be interesting; and of the latter too interesting to be always matter of fact. Meanwhile, the effects of eyestrain and of deafness and of adenoids, in school children who are suffering from such notwithstanding the possession of a family physician, make the basis of many an essay by our nonmedical friends. It is for this reason that one of these special sense defects is here discussed from the standpoint of general practice, and considered in its commonest practical relations.

Prevalence of Eyestrain.

The consideration of eyestrain naturally begins with an inquiry into its prevalence; and one may

well be pardoned if he confesses uncertainty on the subject after reading the statements given in both the lay and medical press.

I do not know the lower estimates publicly made, but that two thirds of children suffer from eyestrain has been freely asserted. An eminent ophthalmologist² at the recent convention of the American Medical Association stated that 40 to 60 per cent. of school children were suffering from headaches, and that 0.9 of these were due to eyestrain. If we add to these the number of children having eyestrain without headache, the maximum authoritative estimate may possibly be this one.

It is this lack of united opinion that has led the writer to collect the records of his own work, and the official reports of the health departments of various cities, and endeavor thereby to establish standard figures on this variety of physical defect. Comparison in these cases is interesting but difficult, because of the different methods and objects of examination reported in these official statistics.

In New York the estimate is made that the eyesight of 29.5 per cent. of children is defective. This is based on routine school inspection of 79,069 children in 1905.

In Philadelphia, 1905-1906, the estimate is 28 per cent., based on the statistics of Dr. Beatty from the inspection of 140,000 children.

The proportion of cases among school children with vision not over two thirds is given in the London School Report for 1904. It is 26 per cent. This eye examination was made on 20,000 children by eight ophthalmologists. It evidently does not include many cases whose vision is between normal and two thirds, who also need the help afforded by glasses.

My own examination of school children's eyes was made in connection with routine physical examinations conducted by the Philadelphia Bureau of Health. It comprised simply the test for distance vision by Snellen's test types, with the best natural light obtainable. Symptoms of eye fatigue were frequently asked for, in cases of fairly good vision, to aid the judgment as to the advisability of issuing official parents' notices recommending treatment. Each eye was tested separately. Children wearing glasses already were examined while wearing the glasses, as the official examination is primarily a practical one.

In 1156 children I found that vision was normal in 66 per cent. of all cases. By normal children is meant those having absolutely normal vision, those with vision slightly less than normal, but no symptoms of eyestrain; and those cases where one eye was normal and the other with fair vision, such as three quarters. Of the 34 per cent. defectives, about 6 per cent. of the whole number suffered from vision of one half or less, but it must be remembered that there were many children wearing glasses with full or partial correction who would have swelled this number greatly if they had not had such artificial aid. The absolute number of such cases (vision one half or less), is given in the London Report as 12.5 per cent., which I think is accurate. The 6 per cent. in my series, however, represents those cases of the very poorest vision for whom nothing had been done.

¹ *Transactions of the Pennsylvania Schools of Philadelphia, Trans. of the Pennsylvania School of Medicine, 1881. Good Vision and the Eye, by Dr. S. D. Risley, 1881. The Eye and the Eye Process. Bulletin of the American Academy of Medicine, vol. vi, No. 4.*

² *Journal of the American Medical Association, November 10, 1906.*

In the above described examination of my own, the number of children defective enough to need eye glasses can only be arrived at by a secondary calculation, namely, the addition of those given official notices to those already wearing glasses. This number, as can be seen from Chart II, equals 32 per cent. Because their visions were taken with a natural light illumination, which in the Kane school was poor (see Chart II, line 6), I believe 30 per cent. to be a more exact estimate.

Present Care or Neglect of School Children's Eyes.

It will be remembered (see Chart II) that 32 per cent. of all school children show defective vision. The parents of 24.5 per cent. received notice (Chart II) that such defective vision existed of a degree that eye glasses would be beneficial, the other 7.5 per cent. being already provided with them. Furthermore, an analysis of my series or a reference to the London School Report of 1904 shows that vision of two thirds or less exists in about 17.5 per cent. of all children. The latter cases of very poor eyesight will serve as a basis for comparison since they are demonstrable to any person by simple test and therefore indisputable.

Comparing, then, the minimum of 17.5 per cent. children who undeniably need glasses but are unprovided, with the 7.5 per cent. children already wearing them, shows that 70 per cent. of defective children are at the present time without them. With whom does the fault of this condition of affairs lie? With the medical profession, the teacher, or the laity?

First, the medical profession. Speaking frankly from a knowledge of my own former indifferent attitude, a personal knowledge of a great number of physicians in general practice, and my official experience in this connection, we do not as a body appreciate as we should that the vast majority of headaches in children are of reflex origin, and that these "reflex headaches" are mostly due to eyestrain. Only with advancing years, and the appearance of constitutional disorders and organic diseases of the kidneys, gastrointestinal, circulatory and nervous systems, do headaches from these causes appear. Let us keep this aetiological distinction ever clearly in mind in our practice.

Again, how frequently we ignore flat chested, round shouldered, delicate children, or pass them by with the pseudophilosophical remark that no infection exists and therefore their poor development is constitutional. The true reason is likely to be eyestrain, or nasopharyngeal obstruction. The child with adenoids has an undeveloped chest, the myopic child leans forward to see and turns to indoor confining amusements. The hyperopic or astigmatic child also leans forward to see, and lays the foundation for a future unstable nervous system by the constant effort of accommodation.

Not only are we careless in observing the symptoms of eyestrain and its effects, but like the shoemaker's barefoot children, our own children suffer unnoticed while we are engrossed attending to those of others. A few months ago I examined the ten year old child of a very able physician, who was in ignorance of the fact that she possessed only one third vision. I have encountered two or three other cases almost as remarkable.

The reason for all this indifference is the almost absolute divorcement of ophthalmology from general practice. Because the average physician ignores the whole question of refraction, the advertising optician has appeared upon the field. He does make ridiculous mistakes, but simple refractive errors he sometimes relieves; he at least does something, and therefore he profitably endeavors to fill a real want. I could tell many tales of strange things seen which have emanated from these opticians' shops; but they are more entertaining than germane to the subject.

Second.—The responsibility of the teaching profession. This phase of the subject is worthy of an essay in itself. Briefly it may be said that the present generation of teachers know little book anatomy, and nothing about it practically. This is the fault of their training which supplements the study of other sciences, including botany, with practical specimen and laboratory work, but teaches the human body and its functions by theoretical methods of a far inferior sort. I suppose the lack of ready material for demonstration, and a sense of modesty are responsible for this. However, the realization by educators that the next great advance in pedagogical economy is the existence of healthy children as objects of instruction will doubtless introduce into our normal school curricula, brief practical courses on the eye, the nose and throat, the skeleton, the nervous system, and their commonest departures from the normal. There is a certain amount of humor in the contemplation of a teacher, drilling thoroughly into her class, the baneful effects of alcohol on the "lining of the stomach" and its production of "hob nailed liver," while she is blissfully unconscious of the squinting, heavy eyed, round shouldered children before her.

Personally and individually, the attitude of all the teachers with whom I have come in contact is one of cordial co-operation and eagerness to learn. The utility of such a course of instruction as I have advocated, is proved by the diagnostic acumen displayed by many teachers, as soon as the major symptoms have been explained to them.

The teacher is still more potent in the work of correcting defects, than she is in their diagnosis. I have often noticed how, in certain school classes, very encouraging results were obtained, while in others the effort was apparently wasted. This is due largely to the interest or indifference of the teacher, whose repeated inquiries and solicitude are received as from a friend; and never in a spirit of parental or professional jealousy born of misunderstanding.

Third.—The attitude of parents: Cooperation and appreciation on the one hand; and indifference, poverty, and resentment on the other, summarize this phase of the problem.

Some of the happiest moments in this work, which like missionary labor is efficient in proportion as a man puts his enthusiasm and extra-services into it, are derived from the grateful expression of parents who realize that the health of their children may be materially benefited. The poor are not behind the well to do in this respect, and many a woman has asked me how to procure the glasses which she could not afford to buy.

The fact remains, however, that the large major-

ity of our recommendations are ignored. In the Allison School, the children of which are mostly of very good social station, 22 per cent. of children, whose parents were notified that they were suffering from eyestrain, were fitted with eye glasses. In the Kane, Morris, and Sartain Schools taken together, the proportion—34 per cent.—was better. These latter children were of poorer but respectable parents.

Far worse than poverty to combat with is indifference or active hostility. I have notified parents that their child had but one third of its normal vision and been told to mind my own business. A week previous to this writing, a very respectable man neatly disposed of me forever, by writing on the back of my recommendation blank in blue pencil: "My dear Dr.: Kindly leave this to me. W. H. L." Another case, a little girl in the Allison School, has one third vision in one eye and one fifth vision in the other. She had had a daily headache for a month. Two official notices have been sent to her parents; but they profess to believe that a breakfast of toast and oatmeal is the remedy for the headaches.

Relation of Sex to Vision.

It is an established fact that girls suffer more than boys, not only from reflex and secondary effects of eyestrain, due to their higher nervous organization and less sturdy physique, but also from actual refractive error itself. The best authoritative statement which has come to my notice is that of my colleague, Dr. L. J. Wessels (*Philadelphia Health Report*, 1905, p. 166), which gives the prevalence of eyestrain in girls compared to boys as five to four. The London Health Report before cited, also states that girls have poorer vision than boys.

I have examined the records of the Robert Morris School for information on this point, and find that eighty-two girls and forty-seven boys had evident eyestrain, by the simple test for distance vision. The school population examined (473) is equally divided as to sex. The proportion here is therefore considerably greater than that of Dr. Wessels.

As to the boys and girls encountered already wearing glasses, they seem to be about equally provided for. Dr. Wessels gives a slightly higher proportion to the girls which *a priori* is what one would expect; while my records show a reverse condition. Parental supervision, therefore, seems to be about the same among each sex.

Reflex symptoms, such as headache, are much more in evidence in girls. In the Morris School (children of all ages) 17 per cent. of the boys and 26 per cent. of the girls gave a history of headache. In the girls' grammar grades of the Kane School about 70 per cent. (I am not sure of the exact figure) stated the occurrence of headache as a recognized frequent symptom.

From developmental orthopædic defects, such as round shoulders and flat chest, girls suffer more than boys. Unfortunately, I neglected the opportunity of noting the exact association of these deformities with eyestrain and nasal obstructions, and must therefore make the statement simply on the basis of general observation. There is, however, no doubt as to its correctness.

Indirect Effects of Poor Vision.

The secondary effects of poor vision are a most interesting study to the physician and a revelation to the teacher.

The headaches, round shoulders, and flat chests already mentioned, together with vertigo, chorea, epilepsy, dyspepsia, backache, and general neurasthenia, comprise the commonest recognized evils following in the train of eyestrain. Lately Dr. Gould and Dr. Wilson, of Philadelphia, have drawn attention to the fact that lateral curvature of the spine has one of its important causes in eyestrain (*American Medicine*, March 26, 1904, *Ibidem*, May 21, 1904, *New York Medical Journal*, July 28, 1906). I can give no statistical studies in this particular field except those already touched upon in connection with headaches. Taken as a whole, 31 per cent. of the children with defective vision, who did not possess eye glasses, suffered from headaches, and it is remarkable that this percentage (30) holds for those leaving five sixths vision as well as for the whole number of defectives. However, no pædiatrist or neurologist goes far without encountering numerous instances of these cases, and my own major recollection in this connection is that of two boys who had epileptic convulsions fairly established, despite bromides and diet, and who have been almost cured by the correction of a before unsuspected refractive error. I shall therefore pass directly to the last phase of the subject, namely, the effect of eyestrain on intellectual development, as evidenced by progress in school studies. Because of its importance and the present lack of accurate information on the subject, it will be considered in a separate paragraph.

The Relation of Poor Vision to Poor Scholarship.

That such a relationship should exist is but reasonable; and is strikingly manifest in the study of actually feeble minded children, where associated defects of the special senses, such as sight and hearing, are frequently found, and where great improvement often takes place subsequently to the correction of these defects. The average child in school, however, does not depend on his eyes alone in acquiring knowledge. If his vision is poor, he unconsciously sharpens his hearing. The distinction between the normal and defective sighted children is also somewhat blunted by the coincident occurrence of adenoids and deafness throughout the whole number. Consequently, one should not expect sensational results in examining large numbers of children.

With the kind assistance of Miss Boyd, principal of the Allison School, a series list was made of 219 children, their visual acuity, and their term marks in arithmetic, geography, and spelling. For convenience vision was designated as normal, if it exceeded three fourths, fair if it exceeded one half, and bad if it was one half or less. The children were first grouped according to their acuity of vision, with the following result:

	Arithmetic.	Geography.	Spelling.	Average.
Normal vision.....	79	69	76	75—
Fair vision.....	70	71	77	73+
Bad vision.....	66	70	71	69

This difference of six points is often the difference between promotion and failure in a child's work. It is interesting also to note the great differ-

ence in the arithmetic marking and the slight difference in the geography marking, the latter being acquired largely by oral instruction rather than black-board work.

The children were again grouped according to their scholarships, into three classes. Good scholarship comprised a mark of 85 or more, fair scholarship 70 to 84, and poor scholarship less than 70. The following result was obtained. Of the bright children, twenty-two had normal vision, four had fair vision, and one had bad vision. Of the fairly bright children one hundred were normal, twenty-seven had fair vision, and three had bad vision. Of the dull children forty-two had normal vision, eleven had fair vision, and three had bad vision. The results on analysis, therefore, correspond to the conclusions drawn from the first grouping, namely, that the scholarship and visual acuity vary directly and proportionately.

CHART I.—RECORD OF VISUAL ACUITY OF 1,156 SCHOOL CHILDREN.

	Allison School.	Kane School.	Morris School.	Total.	Total per ct.
Normal	214	221	321	756	65.7
Normal minus vision	164	156	248	568	..
Normal minus, but no symptoms of eyestrain	38	39	42	119	..
One eye normal, the other eye nearly so	12	26	34	72	..
Defective	86	162	149	397	34.3
One eye normal and one eye with vision less than two thirds	5	10	17	32	..
Both eyes defective—equally defective	69	131	103	303	..
Normal minus vision and showing symptoms of eyestrain	(27)	(14)	(10)	(51)	..
Vision three quarters and two thirds	(40)	(80)	(65)	(185)	..
Vision one half or less	(2)	(37)	(28)	(67)	..
Both eyes defective—unequally defective	12	21	29	62	..
Vision in better eye two thirds or more	(8)	(16)	(20)	(44)	..
Vision in better eye less than two thirds	(4)	(5)	(9)	(18)	..
Total number of children, 300	383	473	1,156	100	

IMPORTANT NOTE.—Illumination of test card by natural light only. Vision recorded with the aid of eye glasses in all cases already wearing them. Squint cases (total 29) included in above summary.

CHART II.—SCHOOL CHILDREN AND EYE GLASSES.

	Allison School.	Kane School.	Morris School.	Total.	Total per ct.
Number of children already wearing glasses	30	30	28	88	7.5
Corrected to full vision (16)	(8)	(13)	(37)	..	
Corrected to partial vision (14)	(22)	(15)	(51)	..	
Absolute total number of children with defective vision according to card test	102	170	162	434	37.5
The same, calculated percentage	34	44.3	34.2	37.5	
Number of official notices to parents issued	72	109	101	282	24.5
Number of children (minimum number) needing eye glasses	102	139	129	370	32
The same, calculated percentage	34	36.33	27.5	32	

Conclusion.

I will say in conclusion that this monograph on eyestrain covers but a part of the field embraced in the study of the developmental defects of childhood and adolescence, a field which is proving of increasing interest to the educator as he realizes its relation to the success of his work; and one that bids fair to become recognized by the medical profession as a distinct period in the life of the race, in whose few

years, almost trifling physical causes or their removal, exert a profound influence on the subsequent physical and mental welfare of the individual.

1728 CHESTNUT STREET

THE SCRANTON TYPHOID EPIDEMIC.

Final Note.*

By JONATHAN M. WAINWRIGHT, A. M., M. D.,
Scranton, Pa.

The following further note¹ is intended to present in full the history of the Scranton typhoid epidemic from the scientific standpoint, forgetting so far as may be possible, the bitterness which one hundred thousand people must feel against a private water company not only because the water was infected in the first place, but more so because even after every intelligent person knew it was infected it was still insisted that the use of the water should be forced upon the people. People who preferred the water boiled were "fools," the men who fought and stamped out the epidemic were "amateurists," citizens who felt that they had a just claim for expenses incurred from sickness could "sue and be damned."

I may say, too, here, that I note with some chagrin for my adopted State that the three men who have been invited here to-night to give the prize exhibits in the way of typhoid epidemics are all from Pennsylvania. This, furthermore, leaves out Plymouth, Nanticoke, and Butler, also known to fame, and Philadelphia, where there is a continuous all star performance.

TABLE I.—SHOWING MORTALITY RATES PER 100,000 PEOPLE FROM TYPHOID IN CITIES BETWEEN 75,000 AND 150,000 POPULATION. (From Department of Commerce and Labor, Bureau of Census, Bulletin No. 29, Washington, 1905. Population as per estimates for 1903.)

City.	Population, 1903.	Mortality rate per 100,000 from typhoid in 1902.	Same in 1903.
Scranton, Pa.	109,757	19.6	18.2
Denver, Col.	147,111	60.6	55.7
Toledo, Ohio	145,991	34.7	29.5
Allegheny, Pa.	138,064	121.6	102.8
Columbus, Ohio	135,487	37.1	37.0
Worcester, Mass.	128,552	13.6	14.8
Los Angeles, Cal.	116,429	42.0	54.1
New Haven, Conn.	114,627	39.1	36.6
Syracuse, N. Y.	114,443	8.0	17.5
Fall River, Mass.	114,004	10.8	21.0
Memphis, Tenn.	113,669	39.1	41.3
Omaha, Neb.	113,391	21.9	11.5
Paterson, N. J.	113,217	33.5	21.2
St. Joseph, Mo.	110,479	13.9	8.2
Lowell, Mass.	100,150	17.3	30.9
Portland, Ore.	98,655	36.5	35.5
Cambridge, Mass.	96,655	10.4	10.2
Atlanta, Ga.	96,550	68.9	66.3
Albany, N. Y.	94,151	32.9	20.2
Grand Rapids, Mich.	93,029	51.3	41.6
Dayton, Ohio	92,716	44.4	23.7
Seattle, Wash.	92,020	32.9	36.9
Hartford, Conn.	87,836	16.4	21.6
Richmond, Va.	86,148	72.3	73.1
Reading, Pa.	85,051	66.2	31.7
Wilmington, Del.	81,300	60.8	84.7
Nashville, Tenn.	83,275	51.4	69.7
Camden, N. J.	79,811	22.9	13.8
Bridgeport, Conn.	77,635	23.9	14.2
Trenton, N. J.	76,766	41.0	62.5
Troy, N. Y.	75,567	49.1	35.7
Average		38.5	37.1

An important preliminary question before coming to our own epidemic is: What were the conditions in Scranton as to typhoid in previous years? Reliable morbidity reports are not at hand, but from the death reports it would appear that while the disease

* Defective vision cases noted in Chart I, plus those cases possessing full vision by the aid of eye glasses:

86 + 16 = 102, 162 + 8 = 170, 149 + 13 = 162

¹ Issued by Inspector from among the total number of defective children not wearing glasses according to his discretion and professional judgment.

² Those to whom notices were issued plus those already wearing glasses.

* Read before the New York Academy of Medicine, March 7, 1907.

¹ See New York Medical Journal of February 9, 1907, for preliminary note.

has been constantly present, still the total has not been very great as American cities go. Thus the number of deaths was 21, 20, 11, and 25 respectively for the years 1902, 1903, 1904, and 1905, so that estimating the mortality at ten per cent. there have been during the last four years about 200 cases each year, of which probably one third have been reported by physicians. Furthermore, Table I, compiled from *Bulletin* 20, Department of Census,

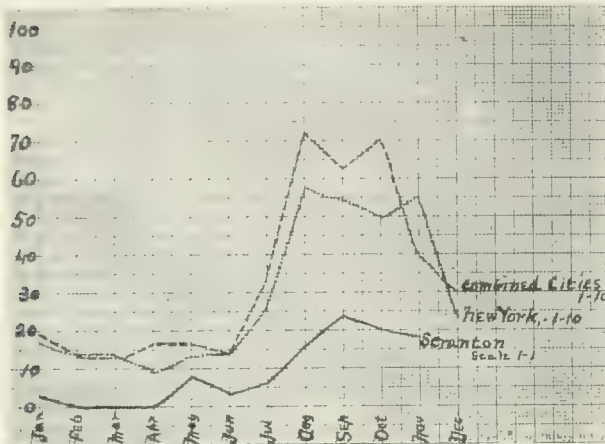


CHART I. Number of cases of typhoid reported by months in 1906 in Scranton, New York, and the combined figures for twenty-two cities having a population between 75,000 and 150,000 (see Table I), showing the comparison between the usual fall rise in these cities. The combined cities represent 4,000 cases, while New York had 3,497 cases during the same period.

1905, shows that for the years 1902 and 1903 Scranton was sixth from the lowest in mortality rate for typhoid among thirty-one cities having a population between 75,000 and 150,000. We can truly say that Scranton heretofore has had a comparatively small amount of typhoid.

A second important preliminary question is, what were the conditions in the city in the months immediately preceding the outbreak (the outbreak began in December), and was there an unusual number of cases during the fall? Chart I shows graphically the fall rise in typhoid in Scranton in 1906. Comparing this with similar curves for Greater New York, and with a chart compiled from the combined reports of twenty-two cities in Table I (Hartford, Rochester, Providence, Reading, Bridgeport, Trenton, New Haven, Syracuse, Patterson, Albany, Camden, Worcester, Grand Rapids, Memphis, Atlanta, Lowell, Toledo, St. Joseph, Wilmington, Cambridge, Seattle, and Allegheny), from which monthly morbidity reports could be obtained, one sees that the fall rise in Scranton was not nearly as sharp as it is in other cities. So far as my own hospital experience goes the ordinary diarrhoeas which some authors have noted as precursors to typhoid epidemics were not present. The epidemic broke from a clear sky and must, of course, have been due to a sudden, very large pollution of the water.

An interesting point in regard to the curves shown in Chart I for New York and the combined cities may be noted in passing. Both these curves are practically identical and as they represent a total of 7,470 cases they may be taken as a fair indication of facts. Both curves begin to rise sud-

denly in July, and the maximum for the year is reached in August. From August to November the curve is practically constant. This agrees substantially with a report of Chapin from the Providence board of health.

Another interesting fact obtained from an examination of monthly morbidity reports is that in Philadelphia and Pittsburgh where typhoid is epidemic all the time there is no fall rise. In 1906 the curve for these two cities was practically a straight line. Why the healthier cities should have the fall rise and others should not I do not see.

A brief description of the Scranton water system is necessary for a full understanding of the epidemic. The diagram gives a rough illustration sufficient for practical purposes, although it does not pretend to geographical accuracy or scale. The major part of the city is supplied by what is known as the Elmhurst reservoir. The principal tributary to this is the Roaring Brook, which a few miles above runs through the centre of Moscow, a village of six or eight hundred people. From Elmhurst the water in previous years has been delivered over a spillway and allowed to run several miles down a brook into a storage reservoir called No. 7. In No. 7 the distance from the inlet to the outtake is about two thousand feet and the water here displaces itself in from two to four days. The brook from Elmhurst to No. 7 also runs through the small hamlet of Nay Aug, of about one hundred to two hundred people, and for a number of miles it is directly at the foot of a railroad embankment. This railroad also runs very close to the Elmhurst reservoir

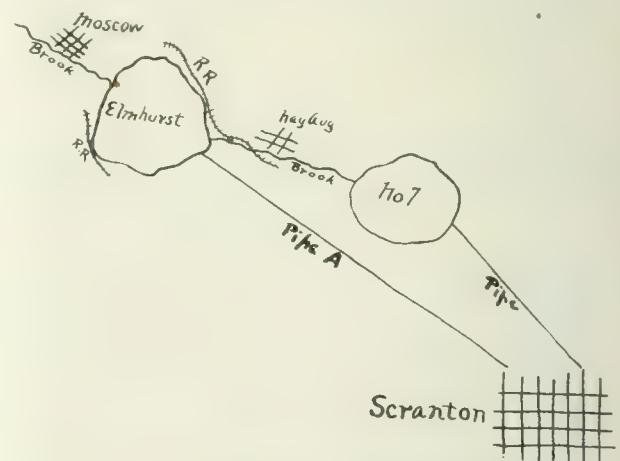


DIAGRAM.—General features of infected system.—Not drawn to scale or geographical accuracy.

and another railroad runs close to it on the other side and actually crosses a small set back from the lake.

Under this system water was supplied to the city for some thirty years. On October 29, 1906, this system was changed. No. 7 reservoir was cut out and the water from Elmhurst was piped directly to the city from a pipe line (A) having its outtake near the bottom of the reservoir. The significance of this change in its bearing on the severity of the epidemic is easily seen and it is an unfortunate coincidence that the new system was in operation at the time of the pollution of the watershed.

According to Dr. Park, director of the New York

City research laboratory, about two to four times as many bacteria would be delivered in the water taken from the outlet near the bottom of the lake as would be delivered over the spillway. Dr. Park also informs us that about fifty per cent. of typhoid bacilli would die out in their passage across No. 7. It will thus be seen that at the very time when the pollution occurred the dose of bacteria was delivered to the city by quick delivery and in a concentrated form.

We now come to the development and course of the epidemic. As stated before, in October, twenty cases were reported and in November eighteen. During the first week in December eleven cases were reported and it is in the latter part of this week that the first patients of the epidemic proper began to get ill. This time suggests close connection with a heavy snowstorm on November 15th, followed by heavy warm rains November 22d, so that it is probable that a fecal accumulation of some

water was shut off and the city supplied with water from another storage reservoir, Lake Scranton, which, as the event proved, was not infected. If we put the maximum incubation period for typhoid at about three weeks it was, of course, to be expected that a large number of patients already poisoned would be attacked during the three weeks after the poisoned water was cut off, and that then there would be a marked falling off in the number of cases. Chart 2 shows graphically that this is just what occurred. This chart, I believe, shows the best example which we have ever had in the United States of a sudden large epidemic coming directly from the public water supply in a city which has previously been comparatively free from typhoid.

Considering the epidemic to have extended over December, 1906, and January and February, 1907, there was a total of 1,155 cases reported and 111 deaths. Estimating the population of Scranton at 115,000 one person was sick to each hundred population.

The accompanying map of the city shows very strikingly the distribution of cases in reference to the Elmhurst supply. The larger portion of the town is supplied with this water and here it will be seen that the cases are very thickly grouped. Two portions of the city are supplied by a different "high pressure service." A glance will at once show that these areas were comparatively free. An accurate police census kindly made by Director of Public Safety Wormser for this paper, shows the population for these two high pressure districts to be 10,166. The total number of people in these areas who had typhoid was only twenty-eight. This gives an uncorrected proportion of one person ill with typhoid to each 362 people. However, careful inquiry has shown that all of these twenty-eight cases either worked, went to school, or frequently visited the Elmhurst area, so that these cases all were poisoned by the Elmhurst water, and the high pressure water was not responsible for any cases.

There are besides two other sections in the northern and southern portions of the city which have different supplies, and a glance at the map shows that these, too, were quite free from the disease, and, as in the high pressure districts, inquiry showed that nearly every case was frequently in the Elmhurst area.

One point which I had not fully appreciated and which, I think, most fail to appreciate, is that typhoid is to a certain extent a directly communicable disease. The Scranton experience has impressed this on me forcibly. Thus there were fifty-four families in which there were two cases, and in at least twenty-two of these the second person afflicted was definitely found to be the attendant to the patient. There were seven families which had three cases, and nine families which had four cases. Among the sixteen families having three and four cases in eight the attendant is definitely known to be one of the secondary cases. An interesting fact is that in these families where more than one case occurred an unusual number of the secondary cases were children. Thus in the three and four case families out of thirty-five cases, in which I have data as to age twenty-one or sixty per cent. were chil-

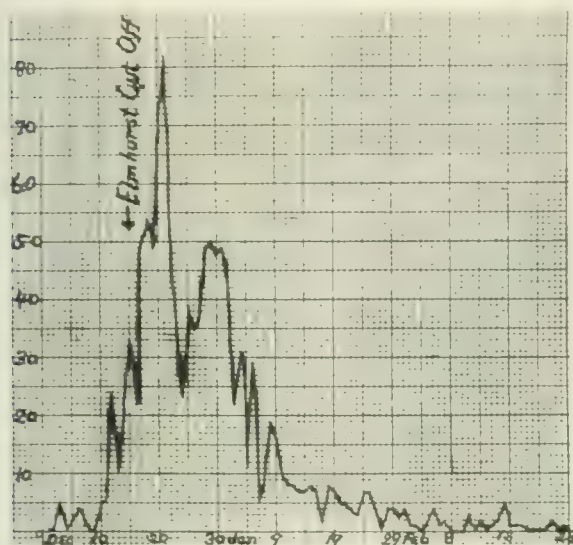


CHART 2. Daily record of report of cases in Scranton during December, 1906, January, 1907, and February, 1907.

little standing was washed into the reservoir suddenly at this time.

It is a lamentable fact that the earlier cases were not being reported by the physicians of the city, so that proper action on the part of the bureau of health was delayed a number of days. In fact, it would have been delayed much longer if it had not been for the circumstance that a daily paper discovered that there were a large number of unreported cases in the city. Largely as a result of the agitation of this paper reports of cases began to come in, and further disastrous delay was prevented.

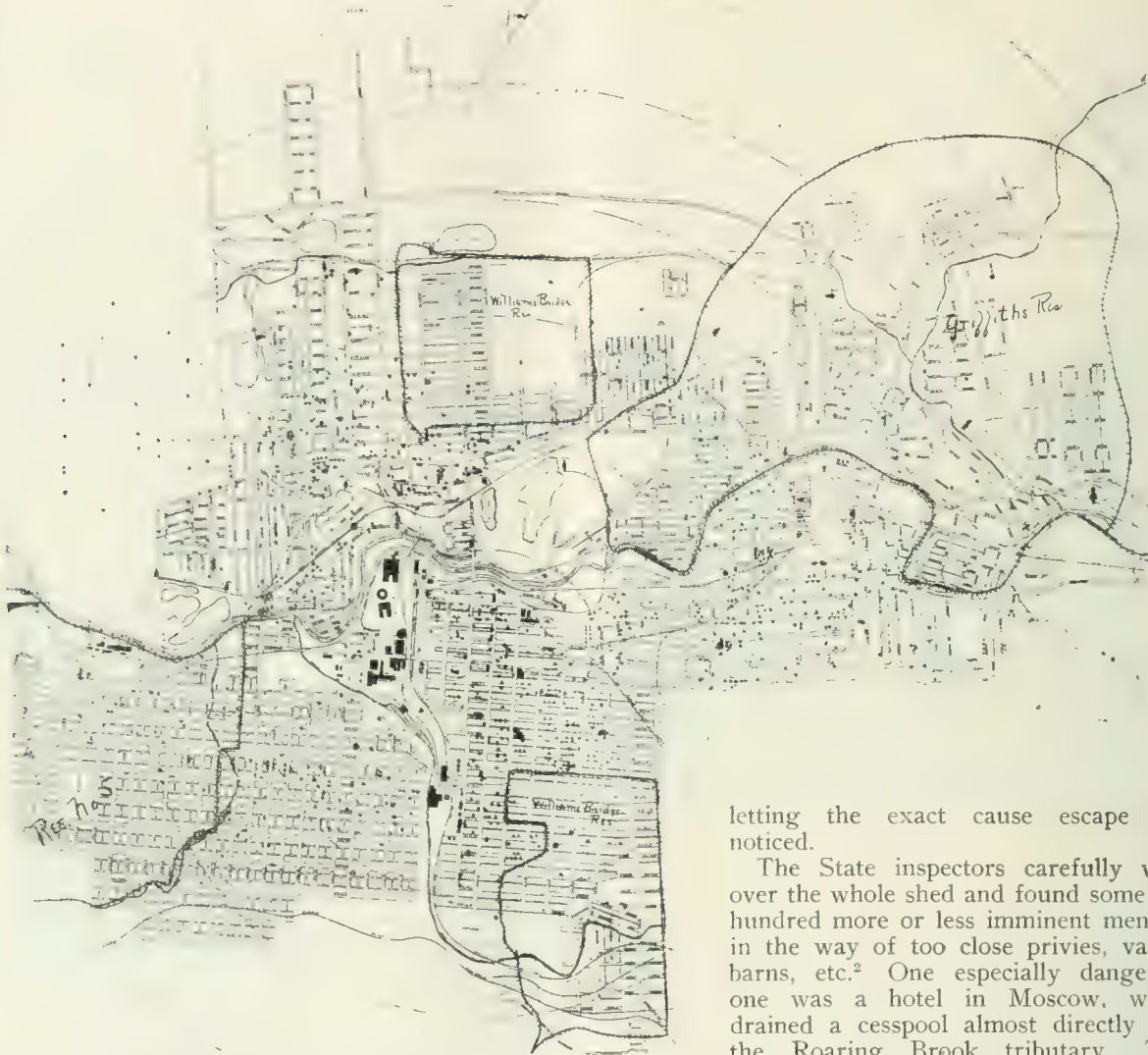
The rise and course of the epidemic is best understood from Chart 2. A marked characteristic is the suddenness both of the rise and fall. The active period of the epidemic can fairly be placed between December 10 and January 10, the cases developing after this period, being comparatively few cases of long incubation period and some secondary cases due to direct communication.

The important date in the epidemic was December 15th, at which time the polluted Elmhurst

dren. Miss O'Halloran, who was chief of our visiting nurses, and who spends her time going from town to town in Pennsylvania fighting typhoid epidemics, considers that the secondary infections are due, generally, to the other members eating the portions of the more or less unusual delicacies which the patient has left unfinished. This was done frequently from the patient's own cup.

In addition to the secondary cases noted before,

of Elmhurst is still undiscovered. Of course, with the principal tributary running through a village the size of Moscow, with the hamlet of Nay Aug on the brook between Elmhurst and the distributing reservoir, and with the railroads running along the system the chances for infection are great and indeed it is quite remarkable that the Scranton disaster did not happen long before. The very multiplicity of possibilities has of itself been important in



A general map of the city of Scranton, Pa. The areas included in the crossed lines are not supplied from Elmhurst; all other areas are.

five nurses on private duty and one ward helper contracted typhoid. Another interesting case of probable secondary infection was that of an undertaker's assistant who contracted typhoid many weeks after Elmhurst had been cut off, and who quite certainly was infected during his work. In all, there were about one hundred secondary cases, or about ten per cent., of the total number. In Plymouth, where there are entirely different conditions, there were about forty per cent. of secondary cases.

It has been a great disappointment that in spite of the most painstaking search by both city and State authorities the exact source of the pollution

letting the exact cause escape unnoticed.

The State inspectors carefully went over the whole shed and found some five hundred more or less imminent menaces in the way of too close privies, vaults, barns, etc.² One especially dangerous one was a hotel in Moscow, which drained a cesspool almost directly into the Roaring Brook tributary. This hotel does a considerable business,

some people from Philadelphia go there, and in the absence of any other more suggestive source this hotel must be regarded with considerable suspicion as the origin of the epidemic through an early walking case or a late convalescent.

The Scranton epidemic has produced important evidence on the question of the ultimate disappearance of typhoid bacilli from infected water supplies. Dr. Park, in his valuable consultation with Mayor Dimmick, stated that so far as known the bacillus did not survive in such waters longer than six weeks, and that if the city could be supplied by the purer reserve reservoir for this period the danger from the original infection would be passed. It was possible for the city to remain on the reserve supply for

² Dixon, *Pennsylvania Medical Journal*, April, 1907.

eight weeks, at the end of which time the reserve was so low that a return to Elmhurst was necessary. The change back to Elmhurst was made February 9th, or just five weeks from the present writing. No recrudescence of the disease has taken place in this time, so that it is certain that the original large infection died out during the eight weeks.

The methods adopted by the State and city authorities in fighting the epidemic were outlined in my preliminary report. They did not involve anything especially new to sanitary officers. The greatest factor in wiping out the epidemic was, of course, the turning off of the Elmhurst supply and serving the city from another lake. It has been our experience, and that of other cities, that no matter how much the people are warned, a large number will not boil water and milk. There can be no doubt from the suddenness and force with which the epidemic broke out in the city that there would have been thousands more of cases if Elmhurst could not have been cut off. From this I believe that a reserve or a storage reservoir is one of the greatest safeguards in regard to typhoid that a city using unfiltered water can have.

Another important source of danger in a city where typhoid is epidemic is, of course, the milk. From the absence of secondary localized epidemics I believe that the milk supply was well guarded by our board of health. Warnings to the public to boil the milk as well as the water were issued early in the epidemic, and inspection of the whole milk supply from farm to retailer was made both with reference to general sanitary conditions and to the presence of illness among the farmers and handlers. In order to reduce the possibility of milk bottles being infected in any house having a case all milkmen were forbidden leaving any milk whatever in bottles. It was required that the desired amount be poured into receptacles provided by the consumer.

The spread of infection from the individual cases was combated by the visiting nurse system under Miss O'Halloran, by circulars of instruction for the care of patients printed in the daily press and also mailed on receipt of a report, by free distribution of lime, and by a general sanitary policing of the city. Miss O'Halloran considers that the circulars of instruction mailed to the typhoid houses were of great service. Many families had them nailed up on the wall for constant observation. Miss O'Halloran also considers that the free lime was very valuable; the more so because all the circulars of instruction and all the verbal instructions by the nurses gave specific directions for the use of lime only. She considers it quite disadvantageous and confusing to vaguely mention a number of antiseptics rather than to settle firmly on one.

The conclusions which, it seems to me, may be drawn from our lesson are:

1. All cases of typhoid must be promptly reported. When this is not done grave danger signs will pass unnoticed. In our own case it was the chance finding of a reporter and the recognition of its seriousness by an editor that prevented further fatal delay. In many cities besides Scranton there is laxity in this respect. In going over figures recently I have found a number of cities who have twenty or twenty-five per cent. mortality from ty-

phoid on the face of reported cases. Furthermore, it must be remembered that physicians cannot be too much blamed for laxity if boards of health know well enough of this laxity, but do not go to work to remedy it.

2. The advantage of municipal ownership. Under this system one at least eliminates the harm a private corporation may do during an epidemic in its efforts to safeguard the capital stock at the expense of further disaster to the people.

3. The numerous nuisances which had been maintained for years on our watershed show the necessity of a rigid police inspection of the entire watershed by inspectors employed by and for the people and not by the water company.

4. Another safeguard which our experience has shown to be decidedly valuable is the frequent bacteriological and chemical examination of the water. Our city laboratory has not been equipped for this work, although it soon is to be. However, according to an authentic newspaper account there was a chemical analysis made by a private chemist early last fall, which showed undoubted sewage pollution and which if made by the city and published could have warned all intelligent people that the water was unfit to drink.

5. In times of epidemic change the water supply if possible, impress upon the people the need of boiling water and milk; use all possible precautions to safeguard the milk supply; and prevent the spread from individual cases by visiting nurses, circulars of instruction, and the free distribution of one antiseptic, etc.

6. Typhoid is to a very distinctly appreciable degree a directly communicable disease.

7. Physicians and sanitarians must recover from their habit of speaking of a certain amount of typhoid as "normal." Typhoid is a filth disease. It comes because we are imbibing more or less directly the feces of a sick man. The only "normal" amount for a civilized community is none at all.

MODERN METHODS OF IMPROVING THE MILK SUPPLY OF CITIES.*

By CLARENCE B. LANE,
Washington, D. C.,

Assistant Chief of Dairy Division, U. S. Department of Agriculture.

Milk is the most important of our food products. It contains every required nutrient in an easily digestible form. It is one of the cheapest foods. It is one of the most common articles of food. In our cities and towns almost every house receives a daily supply. It is an article of food in which almost every one may be said to be interested.

It is being appreciated more and more that there is a great variation in the quality and wholesomeness of the milk sold in our cities and that it is of great importance that this article of food be pure. In some cities it is extremely difficult to secure a regular supply of milk of really good quality. It is a good sign of the times that public interest in the subject of clean milk is increasing, and there is a general agitation of the subject throughout the

* Read before the School of Hygiene, New York City, April 4, 1907. The paper was illustrated by about one hundred slides showing methods of inspection, good and bad conditions in dairies, milk depots, etc.

whole country at the present time. The boards of health in our cities are doing excellent work in passing ordinances to better control the healthfulness and cleanliness of the cows, the sanitary condition of the stables, the water supply, proper cooling and storing of the milk, and delivering it to the consumer with low bacterial content, thus insuring its keeping quality. They are taking more stringent measures to keep the milk shops in a sanitary condition, isolating them from the horse stable, wagon shed and living apartments. We are receiving letters at the Department of Agriculture almost every day for information along this line.

That there is great need for improvement in the milk supply of our cities is very evident to anyone who will take a day or two visiting dairies supplying milk to almost any of our cities, whether large or small. Out of 600 inspected by our department, supplying milk to one city, the average score on the basis of 100 points was only 50.5. Only a few were in even a fair condition. In another city where over a thousand dairies have been rated, the average condition is only 45 per cent. perfect.

Dr. Bense, sanitary superintendent of the Health Department here in your city, stated recently that of the 5,000 dairies which they had inspected since last July, just 5,000 were ordered to make changes or corrections. Out of sixty-two samples of milk taken one day in one city, six showed less than one million bacteria to the fifteen drops, while the other fifty-six showed counts ranging from 1,180,000 to 39,060,000, and twenty-three showed more than 10,000,000. These illustrations will serve to show the need of improvement in the production and handling of milk.

Principles Upon Which Inspection Should Be Made.—Inspection relates first to what may be termed honesty in milk traffic. This includes adulterated milk or milk to which water or any foreign substance has been added, milk which has been skimmed (unless sold as skim milk) or for any reason is not of standard quality, and milk which has been misrepresented by advertisement or otherwise. For example, it must not be represented that milk is produced from tuberculin tested cows unless all of the animals have passed the test within a year.

No one must allege to sell "certified milk" unless the conditions under which it is produced and the quality of the milk have been certified to by some milk commission of a regular medical association. Milk also represented as Jersey milk, pasteurized milk, sterilized milk, inspected milk, etc., must be true to representation. The standard for milk varies in different States. For example: The State of Maine has a standard of 12 per cent. of total solids and 3 per cent. of fat, while Maryland has a standard of 12.5 per cent. of total solids and 3.5 per cent. of fat. The United States standard is 12 per cent. total solids and 3.25 per cent. fat for whole milk, and 9.25 per cent. total solids for skim milk.

Inspection is Related to Healthfulness.—Our rapid growing cities and increasing consumption of milk and long distance for shipping make it more important than ever that the milk be as clean as possible when it leaves the farm. The possibility of spreading contagious diseases in milk among a large number of consumers makes it necessary to have a strict inspection of the supply. In a recent *Bulletin of the Massachusetts State Board of Health* the

statement was made that of 328 samples of milk examined, 195 were up to standard and 133 were not, while out of 128 samples of ale examined all were up to standard. It appears from this that one may know better what he is getting when he asks for ale than when he asks for milk.

Perhaps one of the most important features of inspection is in regard to the health of the animals from which the milk is produced.

The veterinary fraternity is now practically agreed that tuberculosis may be transmitted through milk, and that milk from animals suffering from tuberculosis is dangerous as food. The time is fast approaching when our cities will require that all dairymen supplying milk must have their herds tuberculin tested. At least four cities have already taken this stand and are enforcing the tuberculin test. In one city where 500 cows have been tested, 29 per cent. have been found tuberculous.

Inspection is also made with reference to decomposed food, contaminated water, dirty and filthy stables, or improper handling or transportation of the milk. It is the testimony of medical science that nearly if not quite one half of the deaths of infants in the cities of this country are due to the class of diseases which are known to be preventable; chief among these preventable diseases are the diarrhoeal disturbances of young children, and the prime agent in the production of these is impure milk.

Reliable authorities tell us that the death rate among infants fed bottled milk which has been produced and handled with proper care is one half the death rate among infants fed milk which has not been carefully produced and handled. In other words, the deaths among infants fed dirty milk are twice those among infants fed clean milk.

Some of the more recent regulations in our cities provide a standard for bacteria. This varies in different cities from 100,000 to 500,000 to the cubic centimetre. If the number exceeds this standard the party having the milk in possession is liable to prosecution. In some instances standards have been established for temperature of the milk. This is usually placed at 50°F. In one city at least, an ordinance is in force requiring all milk sold in the city to be delivered in bottles. This is a decided step in advance.

Enforcement of Laws.—A chief inspector working under the general direction of the board of health usually appoints inspectors and collectors of samples, also a chemist and bacteriologist. The samples are collected for the purpose of examination for composition, adulteration and preservatives, and bacterial content. Inspections are made from time to time of milk shops, vehicles, and places of business in the cities. Where the inspection system is well organized careful inspections are made at regular intervals of all dairy farms supplying milk to the city. This includes the water supply, cleanliness of cows, sanitary condition of the stables, cleanliness of milking and the handling, storage, and transportation of the milk. It also includes the examination of cows as to their healthfulness. The chief inspector prosecutes in court violations of the city laws and regulations.

Every person before selling milk is required to secure a license from the chief inspector or health officer each year, and pay a license fee which is turned into the city treasury. It is the duty of the

chief inspector to make such detailed rules and regulations as are necessary for the purpose of rendering the law more effective.

In thirty-five States there are laws referring to market milk. In at least nine other States and Territories there are pure food laws which have a bearing upon the milk supply. In twenty-six States there are officers whose duty it is to enforce these laws. Almost every city and many towns and villages have ordinances or board of health regulations concerning the milk supply. These laws and ordinances are too often faulty for the reason that their requirements are not clearly expressed. Frequently the laws are expressed in such general terms that their execution is practically impossible. Some laws go to the other extreme and try to include almost every detail of dairy work. It is impracticable to enforce such laws, and gradually their requirements are more and more ignored until attention is given to only a few that can be most readily enforced.

A Practical Method of Inspection.—It has been the common practice of inspectors in their work of inspecting dairy farms to put a long list of questions to dairymen relative to their method of milk production and handling the milk; this has failed to be of any great value for the reason that they were cumbersome and it was difficult to get at the exact conditions from these reports. After carefully studying the question of how to meet the present needs in this respect we decided that if a score card was carefully prepared setting forth the conditions in dairies and giving each branch of the work a definite rating that this would largely solve the problem. The score card system is not new, but it has never been applied practically to any great extent. Some 1,500 dairies have already been scored in different parts of the country and the results have been most gratifying.

The score card system has the advantage in pointing out to the dairyman in a very clear manner his defects, and he knows just where he needs to improve. A copy of the score is placed on file and can be referred to at any time and comparison made at a glance. It puts the inspection work on a mathematical basis, making it possible to average conditions in any section, and to compare the dairies in one place with those in another. Another advantage of the score card is that it gives little opportunity for favoritism. Every dairyman receives fair treatment. It also eliminates to a large extent the individuality of the inspector. Careful directions are given for scoring so that different inspectors scoring the same dairy will arrive at practically the same results. The score card has been found particularly valuable to boards of health as a basis for issuing and revoking permits to dairymen.

Boards of health can establish standards which must be reached by all dairymen if they want to sell milk, and if dairies are not up to the standard the score card shows them just what they need to do to reach it.

In many dairies more careful cleaning of the cows and stables and more prompt and efficient cooling of the milk will raise the score of the dairy 20 to 25 points and with little or no expense.

The following is a copy of the score card, with full directions:

UNITED STATES DEPARTMENT OF AGRICULTURE BUREAU OF ANIMAL INDUSTRY

Inspection Division

Form No. 1 (Revised 1906)

OBJECT OF INSPECTION: To determine

Town

State

Total No. cows... No. milking... Quality of milk... Daily

Is product for sale? (If not, state reason)

If shipped to other States, specify State

Permit No.

Date of inspection

Inspector

Perfect Allowed

	Perfect	Allowed
Condition of cows (a)	10	
Health of cows (b)	10	
Cleanliness of cows (c)	10	
Water supply (d)	5	20
Construction of stable (e)	10	
Cooling of milk (f)	10	
Lighting (g)	10	
Ventilation (h)	10	
Cubic space per cow (i)	10	
Removal of manure (j)	10	
Stabling (k)	10	
Milk house (l)	10	
Construction of milk house (m)	10	
Equipment of milk house (n)	10	
Cleanliness of milk house (o)	10	
Care and cleanliness of attendants (p)	10	
Water supply (q)	10	
Health of attendants (r)	10	
Cleanliness of milking (s)	10-15	
Handling the milk (t)	10	
Storage of milk (u)	10	
Transportation (v)	10	
Sanitary conditions (w)	10	
Other (x)	10	
Total score	100	

Sanitary conditions are—Excellent... Good... Fair... Poor.

Signature of Inspector

Inspector

DIRECTIONS FOR SCORING

	Perfect score
COWS.	
CONDITION AND HEALTH.—If cows are in good condition, allow 10 points; if poor flesh, and 8 points if not tuberculin tested, allow 8 points.	10
CLEANLINESS.—Clean, 5; good, 4; fair, 2; bad, 0.	5
WATER SUPPLY.—If clean and unpolluted, allow 5 points; otherwise, 0.	5
STABLES.	
CONSTRUCTION.—If construction is good, allow 10 points; if poor, allow 5 points; if very poor, allow 0 points.	10
CLEANLINESS.—If thoroughly clean, including floor (a), walls (b), and ceiling (c), allow 10 points; if good, allow 5 points; if fair, allow 2 points; if poor, allow 0 points.	10
LIGHT.—If light is good, allow 10 points; if fair, allow 5 points; if poor, allow 0 points.	10
VENTILATION.—Good ventilation, allow 10 points; fair, 5 points; poor, 0 points.	10
CUBIC SPACE PER COW.—If 500 cubic feet or over per cow, allow 10 points; if less than 500 and over 400, allow 5 points; if less than 400 and over 300, allow 2 points; if less than 300, allow 0 points.	10
REMOVAL OF MANURE.—Hauled to field daily, allow 10 points; removed at least 30 feet from stable, allow 5 points; otherwise, 0 points.	10
STABLE YARD.—If in good condition, allow 10 points; if fair, allow 5 points; if poor, allow 0 points.	10

MILK HOUSE

CONSTRUCTION.—Tight, sound floor, and not connected with any other building (a), well lighted (b), well ventilated (c), 2; (d) if connected with another building under good conditions, 1; otherwise, 0; (e) if no milk house, 0.

EQUIPMENT.—Hot water for cleaning (a), 1; proper pails (b), 1; proper pails (c) and strainers (d) used for no other purposes, 1.

CLEANLINESS.—Interior clean, 5; good condition, 4; medium, 3; fair, 2; poor, 1; bad, 0	5
CARE AND CLEANLINESS OF UTENSILS.—Clean (a), 3; kept in milk house or suitable outside rack (b), 2; otherwise, 0	5
WATER SUPPLY.—If pure and clean running water, 5; pure and clean still water, 3; otherwise, 0	5

MILKING.

ATTENDANTS.—Healthy	5
CLEANLINESS OF MILKING.—Clean milking suits, milking with clean dry hands, and attention to cleanliness of udder and teats while milking, 10; no special suits, but otherwise clean (a), 7; deduct 4 points for uncleanly teats (b) and udder (c) and 3 points for uncleanly hands (d)	10

HANDLING THE MILK.

PROMPT AND EFFICIENT COOLING.—If prompt (a), 5; efficient (b), if 50° F. or under, 5; over 50° and not over 55°, 4; over 55° and not over 60°, 3; over 60°, 0; if neither prompt nor efficient, 0	10
STORING AT LOW TEMPERATURE.—If 50° F. or under, 5; over 50° and not over 55°, 4; over 55° and not over 60°, 3; over 60°, 0	5
PROTECTION DURING TRANSPORTATION TO MARKET.—If thoroughly protected (iced), 5; good protection, 4; partly protected, 2; otherwise, 0	5

100

SCORE.

If total score is 90 or above and each division 85% perfect or over, the dairy is EXCELLENT (entitled to registry).
If total score is 80 or above and each division 75% perfect or over, the dairy is GOOD.
If total score is 70 or above and each division 65% perfect or over, the dairy is FAIR.
If total score is below 70 and any division is below 65% perfect, the dairy is POOR.

* The letters a, b, c, etc. should be entered on score card to show condition of dairy, and when so entered should always indicate a deficiency.

The possibility of the score card in bettering the dairyman's reputation and in increasing his business and profits are well worth his careful thought. The score card educates to a better product and to better profits. The consumer having knowledge of the scores of dairies is not slow to discriminate between those that score good and those that score bad.

The score card is an effectual weapon for driving out of business filthy dairymen. It shows the dairyman, it shows the board of health, it shows the consumer, just what the conditions are under which the milk from each dairy is produced. The score card encourages dairymen to take more pride in their work.

In one city, at least, the scoring of the dairies has resulted in the milk from all dairy farms rating 65 or above being contracted for by dealers at an advanced price of from two to four cents per gallon. The system then touches the pocketbook of the dairyman, and when his pocketbook is affected and he sees more profit coming from better methods and better conditions, he is sure to give the matter careful attention.

It is not altogether the dairyman's fault that conditions are not better. I believe we have been getting at this thing wrong end first. The cities have been endeavoring, largely through enforcement of laws, to make these improvements, but instead of spending all their time and money telling dairymen not to do this and that, I believe that much of the time and money could be better spent by having practical and capable inspectors go direct to the dairy farmer and point out his faults, and through education and cooperation and encouragement assist him in bringing about the desired improvements. This would not bring the results in all cases, but in very many. Most dairymen would be willing to make improvements if they knew exactly how to go about it. I say this advisedly because I have had charge of the work of inspecting several hundred farms, and I know all about the farmer's troubles.

It is all right for our cities to set standards for bacteria; it is all right to insist that milk shall be cooled; it is all right to require that the milk shall contain a certain per cent. of butter fat and solids; it is all right to insist that cows be tuberculin tested; but the dairy farmer should be assisted along all these lines by capable inspectors and given all the help and encouragement possible, and the inspector should come into personal contact with the individual producer. The cities are only just beginning to do this, which to my mind is the most important work in securing a clean milk supply. Our cities, however, are hampered by lack of funds, which permits of only a small number of inspectors. Dairies supplying milk to some of our cities have never been reached at all. What are fourteen inspectors to 30,000 dairies? This is the situation in one of our large cities.

It is evident that only slow progress can be made in improving dairies under these conditions. If a sufficient number of inspectors could be placed in the field to report conditions and close up dirty dairies until they were put in proper condition, it would go a long way toward securing a clean milk supply. One small city I know of has accomplished this, and no dairy which has not been approved by the board of health can sell milk within its limits. The poor dairies ship their milk somewhere else.

The use of the score card is effectual in grading dairies and indirectly in grading the milk. *The strongest incentive toward the production of a better grade of milk will come when the dairyman is paid for his product according to its value.* When this time comes, and it is fast coming, we shall see the dairymen striving to get into the class that receives the most money for its milk rather than the class whose product brings the lowest price.

As in the case of the score card used in field work, this system enables the inspector to give each plant selling milk a definite rating, and the existing conditions can be seen at a glance. Some fifty milk plants have already been scored with very gratifying results. As a rule, the managers of the plants were very willing to have the inspector go through and make a thorough examination. In most cases they are also very willing to talk over the score and take any suggestions the inspector may have to give. In many instances they have stated that they were going to make the improvements immediately and they invited the inspector to call again when these improvements were made and give them another scoring.

Of course a great variety of conditions are met with in going through these milk plants. A few have the salesroom connected with the kitchen or living room, which is objectionable for the reason that in case of sickness in the family, any contagious disease might readily be transmitted to the customers buying milk. In a few cases, women with children in their arms came from the kitchen or some other part of the house into the salesroom to wait on customers.

Scoring City Milk Plants.—We have prepared a score card for the scoring of city milk plants or milk shops and have put it into practical use in Washington. This is similar to the one used for dairy farms, and I believe it is the first attempt to give city milk shops a definite rating by this method. A

copy of the score card with full directions for the inspector follows:

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ANIMAL INDUSTRY,

Dairy Division.

SANITARY INSPECTION OF CITY MILK PLANTS.

Owner or manager _____ Trade name _____
City _____ Street and No. _____ State _____
Number of wagons _____ Gallons sold daily _____ Milk _____
Permit or license No. _____ Date of inspection _____ Cream _____

	Score	Remarks.
MILK ROOM		
Location (1).....	10	
Construction.....		
Floor (3).....		
Walls and ceiling (3).....	10	
Drainage (4).....		
Cleanliness.....	15	
Light and ventilation.....	10	
Equipment.....		
Arrangement (3).....		
Construction.....		
Sanitary (2).....	15	
Durability (2).....		
Condition (3).....		
Cleanliness (5).....		
MILK		
Handling (12).....	20	
Storage (8).....		
SALES ROOM		
Location (2).....		
Construction (2).....	10	
Equipment (2).....		
Cleanliness (4).....		
WAGONS		
General appearance (2).....	10	
Protection of product (3).....		
Cleanliness (5).....		
Total.....	100	

Sanitary conditions are Excellent... Good... Fair... Poor...
Suggestions by inspector.....
Signed, _____
Inspector.

DIRECTIONS FOR SCORING

MILK ROOM

LOCATION.—If not connected by door with any other building, and surroundings are good, 10; when connected with other rooms, such as kitchens, stables, etc., make deductions according to conditions.

CONSTRUCTION.—If good cement floor, and tight, smooth walls and ceiling, and good drainage, allow 10; deduct for cracked or decayed floors, imperfect wall and ceiling, etc.

CLEANLINESS.—If perfectly clean throughout, allow 15; deduct for bad odors, unclean floor and walls, cobwebs, unnecessary articles stored in room, etc.

LIGHT AND VENTILATION.—If window space is equivalent to 15% or more of the floor space, allow 10; deduct 2 points for every 3% less than the above amount.

EQUIPMENT.—Allow 3 points for good arrangement; if some of the equipment is out of doors or so placed that it cannot be readily cleaned, make deductions according to circumstances.

Condition.—If in good repair, allow 3 points; make deductions for rusty, worn-out, or damaged apparatus.

Construction.
Sanitary. If seams are smooth, and all parts can be readily cleaned, allow 2. Deduct for poor construction, from sanitary standpoint.

Durability. If made strong and of good material, allow 2. Deduct for light construction and poor material.

Cleanliness.—If perfectly clean, allow 5 points; make deductions according to amount of apparatus improperly cleaned.

MILK.

HANDLING.—If milk is promptly cooled to 50° F. or lower, allow 12 points; or if pasteurized at a temperature of 149° F. or above and promptly cooled to 50° or lower, allow 12 points. Deduct 1 point for every 2° above 50°. If milk is pasteurized imperfectly, deduct 6 points. If milk is improperly bottled or otherwise poorly handled, make deductions accordingly.

STORAGE.—If stored at a temperature of 45° F. or below, allow 8 points. Deduct 1 point for every 2° above 45°.

SALES ROOM

LOCATION.—If exterior surroundings are good and building is

not connected with any other building, the surroundings allow 2; for fair condition, allow 1; poor conditions, 0.
CONSTRUCTION. If constructed of material that is to keep clean and sanitary, allow 2; for fair construction, allow 1; poor construction, 0.
EQUIPMENT. If well equipped with everything necessary for the trade, allow 2; fair equipment, 1; poor equipment, 0.
CLEANLINESS. If perfectly clean, allow 4 points; if conditions are good, 2; fair, 1; poor, 0.

WAGONS

GENERAL APPEARANCE.—If painted and in good repair, allow 2 points; for fair condition, 1; poor, 0.

Protection of Product. If product is kept, allow 3 points; well protected but not kept, 1; no protection, 0.

CLEANLINESS. If perfectly clean, allow 3; good, 2; fair, 1; poor, 0.

Score Card for Market Milk. Another score card which has recently been introduced has to do with the examination of milk for flavor, composition, bacteria, foreign matter, etc., and is being used to some extent in local inspection. Until recently the inspection of the product has had to do almost entirely with its composition, but now we are beginning to go farther in this matter, and to consider sanitary conditions; in other words, cleanliness is considered a commercial quality. Naturally the consumer is most interested in these standards for judging milk, but he is quite helpless in any attempt he may make to bring about improvements, as considerable time is required to make efficient tests and simple appliances are lacking.

The following score card has been used as a basis for this inspection with excellent results:

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ANIMAL INDUSTRY,

Dairy Division.

SCORE CARD FOR MARKET MILK

Exhibitor _____
Address _____

NUMERICAL SCORE

Flavor, 40.	Composition, 25.	Bacteria, 20.	Acidity, 5.	Appearance of package and contents, 10.	Perfect score, 100
					Judge's score

DESCRIPTIVE SCORE.

Flavor.	Composition.	Bacteria.	Acidity.	Package and contents.
Excellent.	Perfect.	Perfect.	Perfect.	Perfect.
Good.	Fat... percent	Total	percent	Foreign
Fair.	Solids not fat	Liquefiers....		matter.
Bad.	percent			Metal parts.
Flat.				Unattractive.
Bitter.				
Weedy				
Gummy				
Silage.				
Mannered.				
Smothered.				
Other taints.				

Remarks _____

Date, _____

Signature _____

Judge.

DIRECTIONS FOR SCORING.

FLAVOR.

If rich, sweet, clean and pleasant flavor and odor, score perfect (40). Deduct for objectionable flavors and odors according to conditions found.

COMPOSITION

If 4 per cent. fat or above and 8.5 per cent. solids not fat or above, score perfect (25). Deduct 1 point for each one-fourth per cent. fat below 4 and 1 point for each one-fourth per cent. solids not fat below 8.5.

BACTERIA

Less than 10,000 per cubic centimeter.....	20 (perfect).
Over 10,000 and less than 25,000 per cubic centimeter.....	19
Over 25,000 and less than 50,000 per cubic centimeter.....	18
Over 50,000 and less than 75,000 per cubic centimeter.....	17
Over 75,000 and less than 100,000 per cubic centimeter.....	16
Deduct 1 point for each 25,000 above 100,000.	

When an unusually large number of liquefying bacteria are present, further deduction should be made according to conditions found.

ACIDITY

If 0.2 per cent. or below, score perfect (5). Deduct 1 point for each 0.01 per cent. above 0.2 per cent. If Mann's test is used, this is to be added, subtractor on first appearance of a pink color.

APPEARANCE OF PACKAGE AND CONTENTS

If package is clean, free from metal parts, and no foreign matter can be detected in the contents, score perfect (10). Make deductions according to conditions found.

As will be readily seen, this card is of value in pointing out defects in flavor which may come from insanitary conditions in the stable, impure food, etc. Forty points are given to this section of the score card. The chemical composition, including fats and solids, has a weight of 25 points; the keeping quality, including the number and kind of bacteria, 20 points; acidity, 5 points, and appearance of package and contents, 10. The latter includes the presence of foreign matter in the bottom of the milk bottles, metal parts, unattractive appearance, etc.

One hundred and forty-two samples have been scored in one city on this basis, the average score being 80. Certified milk frequently scores 95 to 97. This method of scoring is simply mentioned to show another means of determining the quality of market milk, and giving it a definite rating.

Clean Milk Should Command a Better Price.

Milk produced under clean conditions certainly ought to command a premium over that produced under dirty conditions. With the average customer, however, milk is looked upon as a necessity to be bought as cheaply as possible. If he is asked to pay a higher price, he says immediately it is robbery. He gives no thought to the fact that the price of grain has been advancing during the past ten years, and that wages for farm labor are not only higher, but the labor difficult to obtain. Still the price of milk remains just about the same. The consumer should know that it costs money to produce clean milk, and that it means extra labor and extra care. Further, the dairyman cannot be expected to produce it without a reasonable profit. The consumer demands that other food products be produced and handled in a cleanly manner, and if the price goes up for any cause, he takes it as a matter of course and willingly pays it. He should be willing to do the same for clean milk.

Educate the Consumer.—Poor flavored milk and short keeping quality is not altogether the fault of the dairyman. This is particularly the case where milk is not delivered in bottles and the customers put out various receptacles of all degrees of cleanliness, to receive the milk. Many of these receptacles stand for hours with the dust of the street accumulating in them before the milk is delivered. After the milk is received it is often set away with other foods without any protection, where it readily absorbs any odors present. Even if delivered in good condition, too often it stands in the sun for hours and rapidly deteriorates. When milk is received it is the duty of the customer to put it immediately in a cool place away from strong smelling foods. The milk bottles should be used by the customers for no other purpose than for the storage of

milk. It is also the duty of every person using bottled milk to thoroughly clean the bottles before they are returned to the dealer. Further, all bottles should be returned promptly.

A NEW SACCHARIMETER.

By L. E. WALBUM, M. D.,

Copenhagen, Denmark,

Assistant at the Government Serum Institute.

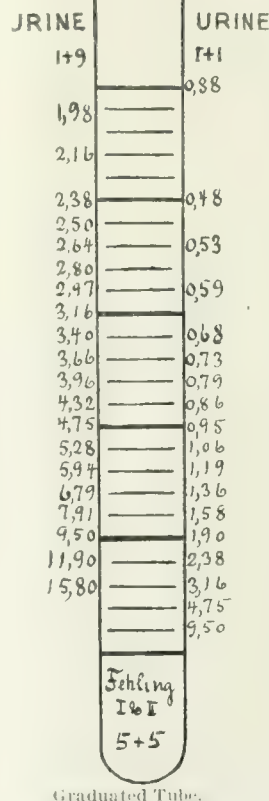
Among the numerous existing methods of quantitative determination of sugar in urine only few are proper for the use of the medical practitioner.

All the fermentative methods have *inter alia* the great detriment, that the result of analysis is not to be obtained before the following day. Titration with the Fehling's fluid and polarization demand, besides much experience, also a larger armamentarium than generally is at the disposal of the medical practitioner.

The titration with the Fehling's fluid everywhere being considered the most exact method, I have in the apparatus specified below tried to simplify the same and make it proper for clinical use without any diminution of the precision of the method worth mentioning.

The apparatus consists, besides the graduated tube shown on the drawing, of two diluting bottles with dripping stopper, in which the urine can be diluted 1 + 1 or 1 + 9, and a full pipette of 5 c.c.

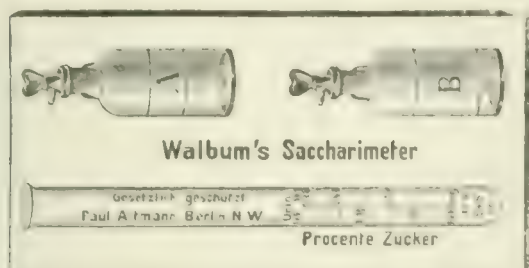
The analysis is made so that one exactly measures off, by means of the pipette, 5 c.c. of Fehling's fluid 1 (the solution of copper) in the titration tube, whereupon it is filled up to the lowest mark with Fehling's fluid 2. The mixture is boiled, and 5 to 10 drops of the dilution of urine 1 + 1 are added, whereupon it is reboiled. If the fluid after a few seconds still remains blue (hold up against the light or some white paper) some more urine dilution is



added (few drops) and is then reboiled again, etc., etc. When the blue color has quite disappeared, the fluid is cooled, and the number in front of the level of the fluid on the scale to the right then indicates

the direct per cent. of sugar in the original undiluted urine.

With the dilution of urine 1 + 1 contents of sugar of more than about 3 per cent. cannot be precisely pointed out. If one wants an exact determination of such a high proportion of sugar, another analysis is to be made in the same way as the first one, but with the dilution of urine 1 + 9, and then the num-



bers on the scale to the left will indicate the sugar per cent. of the undiluted urine.

In order to test the precision of the method, I have subjoined below the results of some analyses made partly by this saccharimeter partly by the titration with the Fehling's fluid.

Titration with Fehling's fluid	Saccharimeter.	Titration with Fehling's fluid.	Saccharimeter.
1.77	1.70	1.98	1.95
0.48	0.51	1.98	1.25
3.16	3.25	7.250	7.00
1.11	4.35	1.819	1.85
6.29	6.50	7.196	7.30
0.873	0.86	0.674	0.60
1.249	1.30	2.224	2.30
2.013	2.10	4.166	4.30
2.978	2.95		

The advantage of this saccharimeter is that reliable results are obtained in an easy and quick way. An analysis will, with some experience, scarcely take more than about five minutes. On account of the shape of the titration tube the oxidizing influence of the air is minimized as much as possible.

Therapeutical Notes.

Ointment for Ciliary Blepharitis.

- R. Ichthyos., aa 0.50 grammes;
 Copri sulphuris,
 Petrolati (albi), 25.0 grammes.

M. For local application.

La Quinzaine thérapeutique, March 25, 1907.

For Angina Pectoris.

- R. Spts. athenis comp.,
 Tinct. aetherialis valerianæ,
 Tinct. digitalis,
 Tinct. belladonnæ, aa 4 grammes.

M. Sig. Dose, ten to twenty drops during the attack of angina.

Frictions to the sternal region may also be employed, and if the attack be prolonged, an injection of atropine may be given near the seat of the pain. —*Bulletin général de thérapeutique*, April 30, 1907.

The Treatment of Dyscrasic Hæmorrhages by Injections of Fresh Blood Serum.—Emile Weil (*La Tribune médicale*) has found that injections of fresh blood sera are efficacious in arresting hæmorrhages in all dyscrasic conditions. They are more active in arresting the bleeding than any other means, and, in particular, the salts of cal-

cium. They probably act by making the circulating ferments enter the circulating blood, and probably also aid the organism in producing them. In spontaneous hæmophilias, the serum exerts a preventive action, which is established in forty-eight hours, and lasts twenty-five days, at the least. The same preventive action is shown in familial hæmophilias. In acute purpura, whether primary or secondary, the injection of serum possesses a manifest curative effect. This was observed in all the cases in which the reporter used them. In two cases they not only arrested the hæmorrhages, but they also hastened the cure. In a third case, the hæmorrhages were diminished very markedly, but in spite of this, the patient succumbed, on account of hepatic insufficiency. In two cases of chronic purpura, the injections of fresh serum arrested the hæmorrhages. In two cases of pernicious anæmia ending fatally, one especially was very favorably influenced from the standpoint of the hæmorrhages. The dose in an adult is 30 c.c., injected under the skin, and this dose may be repeated two hours later. In children, the quantity should be reduced one half. The serum obtained from man and the rabbit, goat, and ox are all efficacious; but it is advised not to use the bovine serum on account of the severe reaction which it sometimes gives rise to, with fever, chill, cyanosis, vomiting, etc. Antidiphtheritic serum, when freshly prepared, will answer the purpose.

Joint Tuberculosis Treated by Venous Stasis.

A recent contribution by Deutschländer (*Archiv für klinische Medicinische Wochenschrift*, April 10, 1907) based upon forty-four cases of osseous and articular tuberculosis shows clearly the value of the Bier method in the treatment of such cases. These observations have yielded very successful results in localized tuberculosis affecting the elbow, the hand, the foot; less favorable in tuberculosis of the knee, and almost no result in tuberculosis of the metacarpal and phalangeal bones. The author considers the following details of technique of primary importance: The applications of apparatus to produce congestion should be of brief duration, from one to six hours a day, and the stasis should be pushed to the production of a bright red coloration of the skin. At the same time, care should be taken not to cause pain or œdema. After several weeks of daily treatment, it is advised to allow the patient to rest for a few days, and then the séances are to be resumed as before. In case of tuberculous fistules, or abscesses, the venous stasis of constriction should be combined with passive congestion produced by aspiration. Acute abscesses are to be freely opened, but cold abscesses or watery collections should be simply punctured after having induced passive congestion by aspiration. It is not at all necessary to inject iodoform. Immobilization is not essential, as some light movements may be useful in maintaining the function of the articulation, but this should not be overdone. The treatment should commence at as early a period as possible, and must be carried on for a long time. In order to prevent relapses, it should even be continued for some time after all inflammatory symptoms have disappeared. Bier's method of artificial venous stasis is regarded as the best means known at the present time of conducting the conservative treatment of surgical tuber-

culosis. It avoids the necessity of surgical operation in many cases. Out of the forty-four notes of cases, the reporter was only in one instance obliged to perform a resection. In all the other cases he was able to restrict operating to a small incision, or to a scraping of the affected bone.

The Successful Treatment of Tetanus.—Guinard, at a recent meeting of the Société de chirurgie of Paris, presented a patient who had suffered with tetanus from a wound in the head (cephalic tetanus), and who had been cured by intraspinal injections of serum. In commenting upon this case, Schwartz called attention to the difference in the mortality rate between cephalic and general tetanus, the former having only 36 per cent. of deaths; the latter, 88 per cent. The prognosis is therefore better in the case of head wounds, even when the period of incubation is less than a week. Without denying the possible value of injections of serum (intrarachidian, or subcutaneous) in the case reported, however, he thought that, as to the actual benefit derived from them, judgment should be reserved. He reported a case of a man who had had a laceration of the nose by a fall. The wound was at once sutured. Six days later trismus was observed, and three days later still there was paralysis of the right upper eyelid, and the next day right-sided facial paralysis was present. The general condition, however, remained very favorable. Within the next twenty-four hours, the patient received two subcutaneous injections (of 20 c.c. of serum each) and six grammes of chloral hydrate. Subsequently three injections of serum were administered, and the chloral was continued in doses of six to eight grammes daily. The patient made a good recovery, but the facial paralysis took several months to disappear. In another case, that of a market gardener, the patient received a slight wound on the middle finger of the right hand. At the end of five days, trismus set in, and two days later the diagnosis of tetanus was confirmed. In spite of intraspinal injections and subcutaneous injections of serum and daily quantities of eight grammes of chloral hydrate, no improvement was obtained, and the patient died of asphyxia on the seventh day. Demoulin called attention to the fact that recently, in his dispensary work, he had seen very few cases with tetanus. He attributed this scarcity at the present day to the fact that in every suspected case of wound he administered preventive injections of serum previous to the operation. Reynier directed attention to the relatively rare occurrence of cephalic tetanus, as compared with general tetanus. As regards the prophylactic use of serum, he considered it impossible to say positively whether in an individual case tetanus is really prevented by these injections or not; because it cannot be known whether or not the wounds are infected. The conditions of success in treatment in all cases are to make a vigorous disinfection of suspected wounds; to administer chloral in large doses (12 to 18 grammes per day); and to completely isolate the patient. He reported six cases cured by this simple treatment. With regard to the serum treatment, it is not always efficacious. This might be due to the smallness of the dose given, or the lack of frequent repetition, and also because it may be commenced too late in the course of the disease. That these preventive inocu-

lations do really exert a certain action in preventing tetanus, it is impossible to affirm, as a fact, for the reason that we do not know if the wounded individual really had been exposed to tetanus or not. —*Le Bulletin médical*, April 20, 1907.

On the Use of Atropine in Poisoning by Morphine.—M. Roch, of Geneva, recently undertook physiological and clinical experiments to establish clearly whether the well known physiological antagonism between the action of morphine and atropine could be utilized in a case of opium poisoning in man. He observes that the respiratory centre in man is certainly more sensitive to the action of morphine than that of the rabbit. The clinical results, therefore, of the administration of atropine are necessarily less striking than those obtained in the laboratory. Moreover, there is a point in both the animal and in man at which the quantity of morphine is so much in excess that the antidote is not able to overcome its effects. If in such a case the dose of atropine should be gradually raised, we shall soon arrive at a point at which the large dose, instead of exciting the respiratory centre, actually depresses it still further, and at the same time produces injurious effects on other organs, and particularly the circulatory system. Under such circumstances one intoxication is merely added to another, and only hastens the fatal result. Roch's conclusions are formulated as follows: 1. In certain cases of poisoning by atropine, we may administer large doses, actually toxic doses, of morphine, and with success. 2. There are on record a number of cases of mixed poisoning, where the absorption of atropine simultaneously with that of morphine has prevented the latter from developing all of its narcotic effect and its depressing effect on respiration. 3. Cases of poisoning by morphine, which were treated by belladonna or its alkaloid, and favorably influenced, abound in medical literature. The amelioration manifests itself most rapidly when the remedy has been given hypodermically. 4. Finally, there exist also reports of numerous cases in which the action of the atropine appeared to be *nil* or even injurious. Experiments have shown that failure is caused either by an excessive quantity of the poison or by the injudicious use of the counter poison, too large a dose usually; too small a dose more rarely. The injection of small doses under the skin, say, two milligrammes repeated several times, appears to be the method of choice. In every case, however, it is necessary to stop the series of injections when the myosis produced by morphine begins to be replaced by the atropine mydriasis. It is hardly necessary to state that in a given case of poisoning by morphine, the treatment by atropine should not be resorted to until after having used all the evacuates and antidotes possible. Moreover, when confronted with a serious case, we should neglect no means which may be capable of reawakening the respiratory centre. As adjuvants of atropine, the author therefore recommends flagellations, cold affusions, revulsives, and even moderate doses of caffeine, strychnine, etc. In alleging that atropine is useful in cases of morphine poisoning, it is desired neither to assert that it is the only treatment which deserves to be employed nor, especially, to declare that it is all powerful.—*Bulletin général de thérapeutique*, April 30, 1907.

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NEW YORK, SATURDAY, JUNE 1, 1907.

EUTHANASIA.

We must protest against the growing tendency to misinterpret the word euthanasia. The classical Greek word *euthanasia* means simply an easy, peaceful, or painless death; and so it has always been understood by the medical profession. A few writers who ought to know better have attributed to it a different meaning, that of deliberately killing a person painlessly as an act of mercy. Not long ago a newspaper stated, under "scare" head lines, that the *New York Medical Journal* "admitted" that euthanasia was commonly resorted to by physicians. We had made no admission; we had simply said that physicians generally endeavored to secure euthanasia for the dying. It is true that they make that attempt; they always have done it and they always will do it. It is only humane to try to deprive death of its pains and terrors, but to do so is a vastly different thing from killing a person painlessly.

It is very much to be regretted that the newspaper interpretation of the word euthanasia appears to derive some support from published writings that have gone unchallenged. For example, Mrs. Oliphant says: "'I think there is a great deal to be said in favor of euthanasia,' said Phœbe, 'but, then, it ought to be with the consent of the victims.'" That plainly means painless murder, and Mrs. Oliphant ought to have known that such a procedure was never seriously considered by members of the medical profession. It is true that now and then a medical crank advances the proposition, but he

never gets a hearing. The business of the medical profession is to prevent disease, to cure it when it is possible to do so, to alleviate suffering, and to prolong life. Under no circumstances does a reputable physician do anything to cut life short; he would be a murderer if he did. He would no more contribute to "euthanasia" in the newspaper sense than he would produce a criminal abortion.

Many liberties have been taken with the word euthanasia by lay writers, but we of the medical profession hold fast to its legitimate meaning; we strive for euthanasia for our patients, but we do not commit murder. It is to be hoped that the newspapers will desist from representing us to the contrary, though the recent experience of a distinguished New York physician, Dr. Knopf, leads us to doubt if we shall ever be correctly interpreted by the lay press.

TETANUS ON LONG ISLAND.

Local problems in medicine have a peculiar fascination that is distinctive. Such a one is the investigation of the geographical distribution of disease, and it is a matter of much interest to note that in the April number of the *Long Island Medical Journal* the editor has collected a number of contributions to the subject of tetanus on Long Island. From many points of view such a study is peculiarly significant, since Long Island and its allies, Block Island and other islands and bits of mainland stretching up to Cape Cod, offer aspects that may be considered unique from a geographical and biological standpoint. Remaining as it does a fragment of the terminal moraine of the great eastern glacier resting on the tertiary coast plane which has been submerged, thus isolating the island from the mainland, Long Island enjoys a peculiar isolation. Therefore the investigation of a biological problem applied to medicine not only has a local interest, but is a contribution to the larger subject of the geographical distribution of disease.

Dr. Van Cott calls attention to the morphology of the organism solely. Dr. Overton, speaking of the reputation that Long Island possessed when he was a student of medicine, not only for its clams, but also for its lockjaw, writes that the committee of the Associated Physicians of Long Island sent a circular to a large number of the physicians of Long Island relative to the occurrence of this disease. Thirty-four replies were received, probably offering, says the author, a survey of the cases occurring over the whole island. Some sixty cases are reported. These have been equally distributed, showing no special localization for any one part of the island. From his figures Dr. Overton concludes

that, contrary to the usual belief, tetanus is an extremely rare disease in all parts of the island.

Dr. Skinner, of Greenport, makes similar observations, quoting the statistics of the Tenth Census reports, which tend to show that the number of deaths from tetanus on Long Island is smaller by one fifth than that of any State along the Atlantic coast. We have called attention to the report because it offers some slight assistance in the study of an interesting class of medical problems that have been almost entirely neglected by medical writers. The facts presented are far too few to warrant the drawing of definite conclusions; we can only suggest that the inquiry be further prosecuted and made more complete, because of the more than usually favorable situation of the island for studies of such a nature.

A REMARKABLE MAMMARY INFECTION.

A rather mysterious case was lately reported to the Lyons Society of the Medical Sciences by M. Plauchu and M. Rendu (*Lyon médical*, April 21st). It was that of an exceptionally robust and perfectly healthy young woman who, six months before the birth of her child, entered a nursery. Her labor and her lying-in were entirely normal. Her breasts were very large, the nipples were well formed, and there were no fissures. She was soon able to furnish an abundance of milk for two infants, and she continued to nurse them for five months, when her fatal illness began. The nursery was a new one, there had been no cases of infectious disease within its walls, and the young nurse had been particularly careful to cleanse her nipples methodically before and after each nursing.

At the end of her five months of service as a wet nurse she was seized with a chill, accompanied by headache, vomiting, and a rapid rise of temperature to 104° F. All her organs were examined, but nothing abnormal was discovered save the fact that energetic expression of the left breast caused thick, odorless pus, without a trace of blood, to issue from the nipple. The procedure was absolutely painless, and from first to last there was no spontaneous pain in the affected breast. Moreover, it did not become tender except on deep pressure; indeed, it seemed to acquire analgesia, for long and deep incisions were subsequently made into it without eliciting the least sign of pain. The patient was remarkably prostrated from the outset, and at the end of a week she had dyspnoea, a rapid and weak pulse, a subicteric hue of the skin, and slight delirium, but did not at any time complain of pain in the breast, which became enormously swollen.

The breast came to resemble a great sponge soaked in pus ("*une vaste éponge purulente*"), and it would have been amputated had the patient's

strength warranted such an operation. In the mean time certain erysipelatoid manifestations, chiefly in the form of large blebs, had shown themselves on the breast. The blebs were punctured, and the subjacent skin soon assumed a gangrenous appearance. On the ninth day of her illness the woman died with all the symptoms of profound infection. Unfortunately, there was no bacteriological investigation or even a gross post mortem examination. Whether the infection was with a staphylococcus or with a streptococcus, the authors do not profess to say, but they are satisfied that expression of the affected breast did not disseminate it. The two infants which the woman had nursed continued to thrive. The case presents several remarkable points, and it is to be regretted that the patient's death was not followed by a thorough investigation of the pathological conditions.

AORTIC ANEURYSM DUE TO RHEUMATISM.

Syphilis holds a very preponderant place in the ætiology of aneurysm of the aorta, and perhaps there is a tendency to exaggerate its importance. However that may be, the influence of rheumatism must not be overlooked, for it appears to play the most important part when the aortic lesion arises in young subjects. Among those who have given much attention to this subject may be mentioned Rénon, who has published several important lectures. One of his pupils, Dr. Feytaud, has recently given a very excellent description of the affection in his thesis. The cases collected by Feytaud occurred in persons from ten to sixteen years of age, and generally they had had several attacks of rheumatism. According to this writer, it is the repetition of the attacks which appears to be the essential factor in the development of the aneurysm.

The aneurysm is preceded by symptoms of aortic insufficiency and cardiac hypertrophy. Its formation may be very rapid, but it is generally insidious, and the aneurysm remains latent for a considerable time. One of the early phenomena is dyspnoea, particularly marked upon exertion, but this symptom can only be imperfectly explained by compression of the trachea and bronchial tubes. In the beginning the respiration is frequent without any true oppression, which is manifest upon exertion or violent exercise, but soon the dyspnoea becomes permanent, although paroxysms occur. These occasionally appear very early in the course of the affection, and, generally speaking, it may be said that they are the first symptom of aneurysm. The attacks generally assume the form of pseudoasthma, with intense dyspnoea, but without pain; in other instances they are painful, like those of angina pectoris.

The attacks usually occur in the early part of the

night. The child goes to bed in apparently perfect condition, and in the middle of the night is suddenly awakened in fearful agony. At first he experiences a sensation of constriction in the chest, suffers from air hunger, and, if he can leave his bed, makes violent efforts at respiration. The attacks last from a quarter of an hour to an hour and slowly subside. In some instances there is pain without dyspnoea. The attacks may occur at long intervals, only two or three times a year, or as often as every ten days or even every day. All these symptoms should lead one to suspect an aneurysm, and the diagnosis will be confirmed by the appearance of physical signs, which quite rapidly become manifest. These aneurysms are more prone to develop toward the costal wall and give rise to the classical symptoms of aneurysm, with this difference, that they coincide with those presented by insufficiency of the sigmoid valves.

Aneurysm of the aorta in young rheumatic subjects may appear within a few months or weeks and rapidly complicate the existing aortitis. When once formed, the aneurysm develops in successive stages, corresponding to the attacks of rheumatism. After each attack there may be a temporary improvement, a kind of regression of the tumor, but this amelioration is destroyed by a fresh attack in the joints, which leaves behind a more marked dilatation than there was before. Cardiac hypertrophy favors the evolution of the aneurysm, and consequently its progress is uninterrupted, so that one can hardly count on regression and cure by obliteration of the sac, because the subject is always liable to a new attack of rheumatism which will destroy any favorable progress. The ordinary end is death, which may occur suddenly from hæmorrhage or during an attack of angina, or, on the other hand, the patient may succumb from cachexia, but this is exceptional. The treatment is nothing more than symptomatic. For the attacks of dyspnoea inhalations of amyl nitrite may be employed; in very severe attacks, where the dyspnoea is severe, bleeding may be resorted to with some chance of a favorable result. The salicylates may be administered in large doses and continued for a long time for the rheumatism.

STUDIES IN EXPERIMENTAL ALCOHOLISM.

Physiologists and pathologists have often fought long and seriously over the question of the food value of alcohol as opposed to its poisonous properties. The question is not settled, and, although many able clinicians are willing to support the view that all men would be better physically if they abstained from the use of alcohol, even in moderation, they are unable to give convincing reasons for their view.

Reid Hunt (*Hygienic Laboratory Bulletin*, No. 33) has taken up the question of the influence of small quantities of alcohol on the animal physiology. The experiments made were undertaken on the theory that alcohol toleration is due to an increase in the oxidation processes of the body, one of which is an increase of the power to oxidize alcohol. As a body upon which to test the increased oxidation power produced by the administration of alcohol, acetonitrile was chosen. Chemically, acetonitrile, or methyl cyanide, may be considered as hydrocyanic acid in which the hydrogen atom has been replaced by the methyl molecule. Both chemically and physiologically, however, acetonitrile is very different from hydrocyanic acid, although it is almost certain that its physiological action is due to the slow liberation of hydrocyanic acid in the body, and its poisonous effect to this same liberation of hydrocyanic acid.

The experiments to show the influence of alcohol on the toxicity of acetonitrile were performed on mice, guinea pigs, and rabbits. It was found that in animals to which alcohol had been administered in amounts too small to cause any indication of intoxication or to produce any ascertainable anatomical lesion, there was an increased susceptibility to the poisonous effects of acetonitrile. This was associated with a distinctly increased power of the body to break up the molecule of acetonitrile, with the liberation of larger quantities of hydrocyanic acid, due to the increased power of oxidation produced by the alcohol. The results afford evidence that certain physiological processes in moderate drinkers are different from the corresponding processes in total abstainers. The experiments also show that the administration of alcohol is accompanied by an absolute and relative increase of the excretion of the ethereal sulphates in the urine. This fact may be considered as evidence that alcohol increases intestinal putrefaction, and, if it is admitted that increased elimination of ethereal sulphates is due to increased intestinal putrefaction, it is possible that the increased intestinal putrefaction produced by alcohol may account for some of the pathological effects of alcohol, such as cirrhosis of the liver and alcohol amblyopia.

A CORRECTION.

We regret that the block bearing the five illustrations of Dr. Max Talmey's article, published in our issue for May 25th, was reversed, so that the figures appear in reverse order. Such an accident is common in printing establishments, and it seems well nigh impossible to guard against it, for the reason that it occurs after the last proof has been sent away from the editorial office and after the

representative of the office has had good reason to suppose that there was nothing more that required his attention.

Obituary.

JOHN HOOKER PACKARD, M. D.,

OF PHILADELPHIA.

Dr. Packard died in Atlantic City, N. J., on Monday, May 20th, of heart disease, aged seventy-five years. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1853. At one time he was one of the visiting surgeons of the Pennsylvania Hospital. He was emeritus surgeon to St. Joseph's Hospital. He was a member of the Philadelphia County Medical Society, the Medical Society of the State of Pennsylvania, the American Medical Association, and the Pathological Society of Philadelphia.

News Items.

The American Hospital for Diseases of the Stomach is about to erect a new building on its property at Eighteenth and Wallace streets, Philadelphia.

The Alumnae Association of the Jewish Hospital Nurses' Training School held its annual banquet on Friday evening, May 24th. The members of the graduating class of the hospital were the guests of the association.

The Medical Society of the County of Otsego, N. Y., will hold its semiannual meeting at Cooperstown, on Tuesday, June 11th. A special feature of the day will be a steamer trip on Otsego Lake.

The Wayne County (Mich.) Medical Society.—At a meeting of this society, held at Detroit, on Monday, May 20th, after a spirited contest, the election of officers resulted as follows: President, Dr. A. N. Collins; vice-president, Dr. Kenneth Gunsolus; secretary, Dr. W. D. Ford.

Germantown Hospital Training School.—The graduating exercises of the Germantown Hospital Training School for Nurses were held on Monday evening, May 27th. Dr. A. M. Whiting and Dr. Lucy L. W. Wilson delivered addresses.

The Richmond, Va., Academy of Medicine and Surgery.—The programme for a meeting of this academy, held on Tuesday, May 28th, included the following papers: Bier's Passive Hyperæmia, by Dr. C. R. Robins; Railway Surgery, by Dr. H. S. MacLean.

St. Mary's Hospital Training School.—The annual commencement exercises of the training school for nurses of St. Mary's Hospital were held on the evening of Tuesday, May 21st, at the hospital. The following young women received the diploma of the school: Misses Mary Doyle, Agnes M. Nolan, and Eleanore G. Walsh.

The Buffalo Academy of Medicine.—The meeting of the *Section in Obstetrics and Gynecology*, which was to have been held on May 28th, was postponed to May 30th, when a paper entitled *Fibroid Tumors of the Uterus in Pregnancy*, Labor, and the Puerperal State, was read by Dr. Matthew D. Mann.

The Medical Society of the County of Rensselaer, N. Y.—The programme for a meeting of this society, held at Troy, on May 15th, included the following papers: *The Heart in a Case of Sudden Death*, by Dr. J. H. Flynn; *A Case of Landry's Paralysis*, by Dr. H. C. Gordinier; *Surgical Specimens*, by Dr. J. B. Harvie.

Appropriation for the Treatment of Tuberculous Patients.—On May 14th, Governor Stuart, of Pennsylvania, signed the bill appropriating \$600,000 for the establishment and maintenance of a sanatorium for consumptives. The sanatorium is to be located in the Pennsylvania forestry reservation, and the work is to be under the control of the Department of Health of the State of Pennsylvania.

The Medical Society of New Jersey.—In consequence of the fact that the hotel in which the annual meeting of this society was to have been held at Cape May will not be completed in time, it has become necessary to change the place of meeting. The trustees have therefore selected Long Branch, in which city, at the Hotel Scarboro, the annual meeting will be held, on June 25, 26, and 27, 1907.

The Connecticut Medical Society.—At the one hundred and fifteenth annual meeting of this society, held at Hartford on May 22 and 23, 1907, officers were elected as follows: President, Dr. E. J. McKnight, of Hartford; vice-president, Dr. F. P. Clifford, of Danbury; secretary, Dr. Walter R. Steiner, of Hartford; treasurer, Dr. Joseph H. Townsend, of New Haven. The next annual meeting of the society will be held at New Haven.

The West Tennessee Medical Association.—At the annual meeting of this association, held at Jackson, on May 15th and 16th, officers were elected as follows: President, Dr. H. Hawkins, of Jackson; first vice-president, Dr. F. D. Smythe, of Memphis; second vice-president, Dr. John T. Allen, of Brownsville; secretary and treasurer, Dr. A. I. McSwain, of Paris; chairman committee of arrangements, Dr. E. K. McNeil, of Jackson.

The Louisiana State Medical Society.—At the annual meeting of this society, held at New Orleans, on May 14, 15, and 16, 1907, officers were elected as follows: President, Dr. Oscar Dowling, of Shreveport; vice-presidents, Dr. L. Lazaro, of Washington; Dr. J. M. Magruder, of New Orleans; and Dr. R. B. Paine, of Mandeville. Alexandria was chosen for the next place of meeting, and the date as April 21, 22, and 23, 1908.

The Blackwell Medical Society of Detroit.—The following officers, for the ensuing year, were elected at the annual meeting of this society, held on Tuesday, May 21st: President, Dr. Harriet L. Hawkins; secretary and treasurer, Dr. Jean A. Vernier; councillors, Dr. Lucy J. Utter, Dr. Grace M. Clarke, and Dr. Juanita I. Lee. Dr. Lucy J. Utter, retiring president, addressed the society on *Women in Medicine*. The meeting was the last of the season.

Philadelphia Personals.—Dr. John H. Mayer, of Chambersburg, Pa., and Dr. Eugene J. Gay, of Algona, Iowa, are registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

Dr. W. J. Roe has been appointed oral surgeon to the Philadelphia General Hospital.

An informal tea was given on the afternoon of May 24th, at the Woman's Hospital, in honor of the fiftieth anniversary of the graduation of Dr. Susan Hayhurst.

The Medical Society of the County of Seneca, N. Y., held its semiannual business meeting at Seneca Falls, on May 16th. The following officers were unanimously nominated and will be elected at the autumn meeting: President, Dr. Lester W. Bellows, of Waterloo; vice-president, Dr. Robert E. Doran, of Willard; secretary, Dr. F. W. Lester, of Seneca Falls; treasurer, Dr. Erving Holley, of Willard; delegate to State conventions, Dr. George A. Bellows, of Waterloo.

An Announcement Misunderstood.—We learn that some of our readers have drawn from an announcement contained in the proceedings of the Medical Association of the Greater City of New York, meeting of January 21st, published in our issue of April 13th, near the foot of the first column of page 715, that Dr. Robert C. Kemp had departed this life. We take pleasure in assuring our readers that such an inference is incorrect. Dr. Kemp himself assures us that he is "still very much alive."

The American Society of Tropical Medicine will hold a meeting at the Philadelphia Polyclinic Hospital, 1818 Lombard Street, at the close of the meeting of the American Medical Association at Atlantic City. The meeting will be held at 8:15 p. m. on Friday, June 7th. Dr. J. H. White, of the United States Public Health and Marine Hospital Service, who so successfully administered the sanitary matters in New Orleans during the yellow fever epidemic of 1905, will deliver an address on *The Prophylaxis of Tropical Diseases*.

The Alumni Society of the Ohio Medical College.—The annual reunion and banquet of this society was held at Cincinnati, on Friday, May 31st, with Dr. Charles L. Bonfield as toastmaster. Toasts were responded to as follows: Dr. J. C. Larkin, Hillsboro, Ohio, on *Brainstorms*; Dr.

A. L. Gifford, A Medical College; Dr. F. S. Gifford, The Man Who Can; Dr. J. C. Sexton, Rushville, Ind., Surgical Complications; Dr. H. S. The Gravel; Dr. W. D. Hinchley, Looking Backward; and Dr. F. Forchheimer, Looking Forward.

Scientific Society Meetings in Philadelphia for the Week Ending June 8, 1907.—The following meetings will be held: Academy of Natural Sciences; West Philadelphia Medical Association; Northwestern Medical Society, *Wednesday, June 5th*, College of Physicians; Association of Clinical Assistants of Wills Hospital, *Thursday, June 6th*, Section Meeting, Lehigh University, *Friday, June 7th*, American Society of Tropical Medicine; American Philosophical Society.

The Pennsylvania Hospital.—One hundred years ago the Pennsylvania Hospital was forced to borrow money to carry on its work. To-day the hospital is confronted by serious financial difficulty, and finds itself in the position of being forced to borrow unless additional funds can be obtained from the charitably disposed. In a letter published in the *Philadelphia Ledger*, signed by Mr. J. B. Townsend, Jr., the position of the hospital is very clearly stated, and most excellent reasons are given why the hospital should apply for or accept aid from the State.

Commencement Exercises of the Woman's Medical College.—The commencement exercises of the Woman's Medical College of Pennsylvania were held in the Academy of Music, Philadelphia, on the afternoon of Wednesday, May 22d. Twenty-nine young women received the degree of Doctor of Medicine. The diplomas were presented by Dr. Clara Marshall, Dean of the College. Twenty graduates have received hospital appointments. The Agnes B. Robinson-Messner prize in anatomy was awarded to Honoria Acosta, of Dagupan, Philippine Islands.

The Medical Society of the County of Steuben, N. Y.—The annual meeting of this society was held at Bath, on Tuesday, May 14th. The election of officers resulted as follows: President, Dr. H. B. Smith, of Corning; vice-president, Dr. F. H. Koyle, of Hornellsville; secretary, Dr. W. W. Smith, of Avoca. A committee composed of Dr. E. J. Carpenter, of Corning; Dr. B. R. Wakeman, of Hornellsville; and Dr. H. R. Ainsworth, of Addison, was appointed to confer with the Board of Supervisors relative to the appointment of a county bacteriologist.

Civil Service Examinations for the State and County Service.—Examinations will be held on June 15, 1907, for a number of positions, among which are the following: Resident physician, State Hospital for Crippled and Deformed Children, \$900 and maintenance; Veterinarian, Health and Agricultural Departments, \$7 a day. The last day for filing applications for these positions is June 8th. Full information and application forms may be obtained by addressing Charles S. Fowler, Chief Examiner of the Commission at Albany.

The Medical Society of the County of Washington, N. Y.—At the annual meeting of this society, held at Sandy Hill on May 21st, the election of officers resulted as follows: President, Dr. C. W. Sumner, of North Granville; vice-president, Dr. H. C. Monroe, of Sandy Hill; secretary, Dr. S. J. Banker, of Fort Edward; treasurer, Dr. J. T. Park, of Sandy Hill; censors, Dr. W. B. Melick, of Fort Edward; Dr. S. Pashley, of Hartford; and Dr. R. C. Davies, of Granville. The society adopted resolutions in memory of the late Dr. Henry Root, a member. It was decided to hold the next semiannual meeting at Cambridge the first Tuesday in October.

The Zoological Society of Philadelphia.—The thirty-fifth annual report of the Board of Directors of the Zoological Society of Philadelphia has just been received, under the date of April 25, 1907. The report contains a classified list of autopsies made during the year in the pathological laboratory of the society by Dr. Herbert Fox, pathologist. The report of a case of tuberculous abscesses of the brain in a young drill baboon, by Dr. Fox, with remarks by Dr. J. H. W. Rhein; A Report of Two Instances of Primary Carcinoma of the Lung, One in a Woolless Sheep and One in a Civet, by Dr. Fox, are of interest. A number of other cases of neoplasms in birds and mammals are reported, as well as a number of nematode and cestode parasites.

Meeting of the Board of Medical Examiners for the State of Texas.—The last meeting of the Board of Medical

Examiners for the State of Texas (regular) for examination of candidates for the medical profession was held on May 25th.

This examination will be held in accordance with the old medical law of Texas, and will be the last meeting of this board for examination, as the new medical law of Texas, the one board bill, becomes effective on the 13th day of July, and under the provisions of this law applicants will only be permitted to appear for examination who are graduates from medical colleges of not less than four terms of five months each. For further information concerning this examination address the secretary, T. T. Jackson, M. D., 1111 North Main Street, Austin, Texas.

The Mortality of Boston.—The number of deaths reported to the Board of Health for the week ending May 25th was 208, as against 214 the corresponding week last year, showing a decrease of six deaths, and making the death rate for the week 18.01. The number of cases and deaths from infectious diseases was as follows: Diphtheria, 40 cases, 5 deaths; scarlatina, 33 cases, no deaths; typhoid fever, 9 cases, 1 death; measles, 59 cases, 2 deaths; tuberculosis, 48 cases, 19 deaths; smallpox, no cases, no deaths. The deaths from pneumonia were 22, whooping cough 2, heart disease 27, bronchitis 3, marasmus 7. There were 14 deaths from violent causes. The number of children who died under one year of age was 46; under five years of age, 65; persons over sixty years of age, 42; deaths in public institutions, 68.

Memorial Tablet for Dr. Mary Putnam Jacobi.—A memorial tablet to the memory of Dr. Mary Putnam Jacobi was formally unveiled at the Woman's Medical College of Pennsylvania on Thursday afternoon, May 23rd. Dr. Bertha Lewis, Dr. Lilian Welsh, Dr. Anna M. Galbraith, and Dr. Charles K. Mills made addresses. The following is the inscription on the tablet: "In memoriam. Mary Putnam Jacobi, class of 1864, Woman's Medical College of Pennsylvania, president of the Alumnae Association 1888-1891 and 1894-1895. Ecole de medecine, Paris, class of 1871; professor of materia medica and therapeutics, Woman's Medical College of the New York Infirmary; professor of the diseases of children, New York Post-graduate Medical College and Hospital; fellow of the New York Academy of Medicine; a distinguished contributor to medical literature, and one of the most eminent women of her time in the medical profession."

The Fiftieth Anniversary of an Unorganized Society of German Physicians.—On May 24th a rare and unique event took place at 19 East Forty-seventh Street. A meeting of the German physicians of New York—*Wissenschaftliche Vereinigung der Deutschen Aerzte und Chirurgen in New York und Umgegend*, a democratic gathering without organization—was held there; as usual, a large number of interesting clinical cases were presented and discussed by a large audience. These meetings have been continued through fifty years without interruption and—a remarkable, unprecedented fact—under the hospitable roof of the same kind host, Dr. Abraham Jacobi, who opened his doors fifty years ago to the very first meeting. The anniversary was appropriately celebrated and speeches were made by Dr. G. Langmann, Dr. L. Peiser, Dr. Willy Meyer, Dr. S. Breitenfeld, and Dr. William P. Northrup, to which Dr. A. Jacobi responded.

Personal.—Dr. Donald L. Ross, formerly first assistant physician at the Craig Colony for epileptics, at Sonyea, N. Y., has been appointed to the position of medical superintendent of the Glenwood Sanitarium, at Dansville, N. Y. Dr. Ross has had a large experience in the treatment of epilepsy.

Dr. C. W. Pilgrim, who resigned as superintendent of the Hudson River State Hospital at Poughkeepsie, to accept the presidency of the State Lunacy Commission, has resigned the latter position and has been reappointed to his former position at the Hudson River State Hospital.

Dr. Alfred R. Crain, of New York, has been appointed medical director of the bathing establishment at Richfield Springs, N. Y., to succeed the late Dr. William Baker Crain, who held the position for thirty years, as resident physician.

At a recent meeting of the Faculty of the New York Post-graduate Medical School, Dr. Follen Cabot, Jr., was appointed a professor in Genitourinary Surgery.

Charitable Bequests.—By the will of John Simmons, the Methodist Episcopal Hospital receives \$5,000 for the endowment of a free bed, to be known as the John Simmons bed. By the will of Cockcroft Thomas, St. Joseph's Or-

phanage, the Catholic Home for Girls, and St. Joseph's Hospital receive \$1,000 each. By the will of Elizabeth J. Greir, the following institutions will receive the amounts designated, after the death of certain of the relatives of the deceased: Children's Country Week Association, \$3,000; Presbyterian Home for Widows and Single Women, \$3,000; Home of the Merciful Savior, \$4,000. By the will of John C. Dudley, St. Joseph's Orphanage for Boys, St. Vincent's Home, the House of the Good Shepherd, and the Little Sisters of the Poor become residuary legatees. By the will of Jane Kennedy, the Presbyterian Hospital receives \$250. By the will of Adeline Doll, the Bethany Orphans' Home, of Womelsdorf, Pa., receives \$500; The Home for Incurables, Philadelphia, receives \$500, after the death of certain relatives.

The Association of Medical Librarians will hold its tenth annual meeting at the Marlborough-Blenheim Hotel, Atlantic City, N. J., on Monday, June 3, 1907. The programme includes the following papers: President's Address: The *Pyretologia* of Robert Talbot: An Episode in Book Hunting, by Dr. George Dock, Ann Arbor, Mich.; Dr. Elisha North, One of Connecticut's Most Eminent Medical Practitioners, by Dr. Walter R. Steiner, Hartford, Conn.; Early Medical Libraries in America, by Dr. Francis R. Packard, Philadelphia, Pa.; Doctors of Samuel Johnson and His Times, by Dr. James P. Warbasse, Brooklyn, N. Y.; How Much Is the Library Appreciated, by Dr. Charles Perry Fisher, Philadelphia, Pa.; Medical History Repositories: A Suggestion, by Dr. William Browning, Brooklyn, N. Y.; The Association of Medical Librarians: Past, Present, and Future, by Albert Tracy Huntington, Brooklyn, N. Y.; Ways and Means of Bringing the Members of the Association Into Closer Touch with Each Other During the Year. Discussion opened by Mrs. Grace Whitting Myers, Boston, Mass.

The Milk Supply of Washington.—The special committee composed of six physicians and scientists appointed by the Commissioners of the District of Columbia to investigate the milk supply of the District have submitted a report recommending that the milk supply of the city be divided into three classes. Class 1 is to consist of certified milk; Class 2 of clean, raw milk from healthy cows, as determined by physical examination by competent veterinarians and by use of the tuberculin test; Class 3 to be milk from dairies which are unable to comply with the above requirements, all of which should be clarified and pasteurized at central pasteurizing plants under the personal supervision of an officer of the Health Department. The committee making this report consisted of Dr. A. D. Melvin, chief of the bureau of animal industry of the Department of Agriculture; Dr. George M. Kober, professor of hygiene, school of medicine, Georgetown University; Dr. G. Lloyd Magruder, school of medicine, Georgetown University; Dr. John R. Mohler, bureau of animal industry; Emile Berliner, J. H. Webster, and Dr. M. J. Rosenau, director of the hygienic laboratory.

Society Meetings for the Coming Week:

MONDAY, June 3rd.—Brooklyn Anatomical and Surgical Society (private); German Medical Society of the City of New York; Practitioners' Club, Newark, N. J.; Utica, N. Y., Medical Library Association; Niagara Falls Academy of Medicine.

TUESDAY, June 4th.—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Buffalo Academy of Medicine (Section in Surgery); Ogdensburg, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Hudson, N. J., County Medical Society (Jersey City); Hornellsville, N. Y., Medical and Surgical Association; Long Island, N. Y., Medical Society.

WEDNESDAY, June 5th.—Harlem Medical Association, New York (annual); Society of Alumni of Bellevue Hospital, New York; New York Genitourinary Society; Elmira, N. Y., Academy of Medicine.

THURSDAY, June 6th.—New York Academy of Medicine; German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society.

FRIDAY, June 7th.—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynecological Society, Brooklyn; The Manhattan Clinical Society (private); Practitioners' Society of New York (private).

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending May 25, 1907:

	May 25.		May 18.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever.....	35	8	56	18
Smallpox.....	4	..	..	..
Varicella.....	120	..	93	..
Measles.....	805	19	630	19
Scarlet fever.....	494	15	469	21
Whooping cough.....	38	14	37	7
Diphtheria.....	313	27	306	32
Tuberculosis pulmonalis.....	437	184	392	196
Cerebrospinal meningitis.....	40	30	28	26
Totals.....	2,286	297	2,011	319

The Health of Philadelphia.—During the week ending May 17, 1907, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Typhoid fever.....	77	18
Scarlet fever.....	50	2
Cholera.....	37	0
Diphtheria.....	35	12
Cerebrospinal meningitis.....	20	8
Measles.....	95	1
Whooping cough.....	37	2
Tuberculosis of the lungs.....	44	63
Pneumonia.....	47	49
Erysipelas.....	9	1
Pericardial fever.....	1	4
Cancer.....	14	17
Mumps.....	10	0
Tetanus.....	2	0
Septicæmia.....	3	0

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 11; diarrhoea and enteritis, under two years of age, 20. The total deaths numbered 485, in an estimated population of 1,500,000, corresponding to an annual death rate of 16.80, in a thousand population. The total infant mortality was 103; under one year of age, 74; between one and two years of age, 29. There were 36 still births, 15 males and 21 females. The temperature reached a maximum of 84 degrees, on the 14th and 15th. The total precipitation was 1.86 inches.

The Health of Pittsburgh.—For the week ending May 18, 1907, the following cases of transmissible diseases were reported to the Bureau of Health of Pittsburgh, Pa.:

	Cases.	Deaths.
Chickenpox.....	8	0
Typhoid fever.....	34	8
Scarlet fever.....	10	1
Diphtheria.....	11	0
Measles.....	9	0
Whooping cough.....	8	2
Tuberculosis of the lungs.....	34	9

The total deaths from all causes during the week were 110. The census of 1900 gives Pittsburgh a population of 321,616; this equals an annual death rate of 17.78 in a thousand population.

Statement of Mortality of Chicago for the Week Ending May 18, 1907, compared with the preceding week, and with the corresponding week of 1906. Death rates computed on United States Census Bureau's figures of midyear populations—2,107,620 for 1907, 2,049,185 for 1906:

	May 18, 1907.	May 11, 1906.	May 19, 1906.
Total deaths, all causes.....	707	717	580
Annual death rate in 1,000.....	17.49	17.74	14.76
Sexes.....			
Males.....	406	428	332
Females.....	301	289	248
Age.....			
Under 1 year of age.....	104	142	111
Between 1 and 5 years of age.....	80	71	48
Between 5 and 20 years of age.....	48	50	37
Between 20 and 60 years of age.....	321	300	271
Over 60 years of age.....	154	154	113
Important causes of death.....			
Apoplexy.....	13	11	12
Bright's disease.....	50	49	49
Bronchitis.....	24	20	10
Consumption.....	75	92	71
Cancer.....	31	31	26
Convulsions.....	10	11	4
Diphtheria.....	10	10	8
Heart diseases.....	56	59	43
Influenza.....	3	5	3
Intestinal diseases, acute.....	25	32	23
Measles.....	6	11	9
Nervous diseases.....	21	25	18
Pneumonia.....	174	153	99
Scarlet fever.....	12	10	10
Smallpox.....	11	11	7
Typhoid fever.....	6	6	10
Violence (other than suicide).....	26	35	40
Whooping cough.....	4	8	3
All other causes.....	150	138	135

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

May 1, 1907

Medical Legislation in Two Republics.

By C. S. N. HALLBERG.

2. The External Preparation of the United States Pharmacopœia. VIII.

By C. S. N. HALLBERG.

3. Escalation of the Human System, with Respect to the Administration of Opium, and to the Treatment of Blood.

By J. W. H. H. H. H.

4. Danger Signals from the Skin.

By J. W. H. H. H.

5. Transbrachial Anesthesia: A New Method of Surgical Treatment for Brachial Palsy.

By W. W. H. H. H.

6. The Standardization of Cardiac Remedies.

By C. H. H. H. H.

7. Endemic Typhoid Fever from Infected Milk.

By J. W. H. H. H.

8. The Estimation of Hæmoglobin Content of Blood with Modern Instruments.

By T. W. H. H. H.

9. Report of a Case of Amaurotic Family Idiocy, with Histological Report on the Eyes.

By M. H. H. H. H.

10. Thymic Tracheostomy. Tracheoscopy. Thymectomy. Cure.

By C. H. H. H. H.

1. **Medical Legislators of Two Republics.**—Reed compares the physicians of the United States with those of France in reference to the part they take in politics. There are ninety-two physicians in the two houses of the present French Congress, the Ninth, elected last year, while there were four physicians in the two houses of the last Congress of the United States—the Fifty-ninth, that expired by limitation in March, 1907. This contrast is very great, but becomes all the more striking when it is remembered that the population of France, in 1906, was 38,228,969, while that of the United States for the same year, the estimate being based on the census of 1900, was approximately 85,000,000. The number of physicians in France was quoted a few years ago at 28,000. The number of physicians in the United States in 1906, according to the *American Medical Directory*, was 122,167. A study of this phenomenon is of interest not only to sociologists in general, but more particularly to American physicians who are more or less acquainted with the personnel of the medical profession of France and who have some knowledge of the cities and people and, consequently, of the political constituencies of that country. The French Congress, like the American Congress, is composed of two houses. The upper house in France, like that in this country, is called the Senate, while the lower house, corresponding to our House of Representatives, is called the Chamber of Deputies. The French Senate has 300 members, of which 40 are physicians; the American Senate consists of 90 members, of which one is a physician. The French Chamber of Deputies has 595 members, of which 52 are physicians; the American House of Representatives has 386 members, of which, in the Fifty-ninth Congress, 3 were physicians. The great interest that medical men in France display in matters of state cannot be accounted for on the basis of compensation received. The pay, or the "indemnity," as it is called in France, is only 9,000 francs, or about \$1,800, for both senators and deputies, while the pay in the United States is 37,500 francs, or \$7,500, in both branches of Congress. It is interesting to note that members of the British Parliament serve entirely without compensation, and that the medical profession always has liberal representation in that body. The author concludes that certainly with these wholesome examples before us it must be apparent that, relatively speaking, the medical profession of the United States is not doing its full duty in these higher activities of American

citizenship. May the future accord us a better record!

4. **Danger Signals from the Skin.**—Bulkley observes that the skin is the largest organ of the body, and that attention from the general practitioner in connection with many disordered or diseased conditions of the system, and yet when the skin itself becomes diseased many physicians seem to lose sight of its relation to the general system, and regard and treat it only locally; and this happens often, much to the detriment of the patient, and too frequently with unsatisfactory results in regard to the cutaneous affection. The author calls attention to the relations of the skin to the general economy, and especially to some danger signals occurring in connection with certain manifestations of diseases on the skin. He thus cites syphilis, eczema, acne, psoriasis, chronic urticaria, erythema multiforme and bullous eruptions, pruritus, xanthoma diabeticorum, boils and carbuncles, dermatitis maligna, acanthosis nigricans, lupus vulgaris, etc.

6. **The Standardization of Cardiac Remedies.**—Edmunds reviews the present condition of the standardization of cardiac remedies. He says that no one can deny the necessity of a uniform strength of the cardiac tonics on the market, but how this is to be obtained is another matter. The fact that a preparation is marked "physiologically standardized" may not mean much and "physiologically assayed" may mean less. If the tinctures are standardized those of an individual firm may be uniform, although that does not necessarily follow, but each firm having its own standard there can be little more uniformity than at present. The author observes that what is needed is a national standard, such as the pharmacopœia furnishes for chemical assays. Perhaps the revisers of the next pharmacopœia may see their way clear to insert some such method, but for the present we are left helpless so far as they are concerned. It has been very aptly suggested that the United States Public Health and Marine Hospital Service might furnish a standard method of assay that would be acceptable to pharmacist and physician alike. It has been pointed out that the adoption of such a standard would work a hardship on the retail druggists, a very large number of whom make their own tinctures, and who could not possibly carry out such tests. This objection seems to be without any great weight. At present the retail druggist can make as good a tincture as the large manufacturing house, and clearly there is no good reason why he should not do so. But when he can buy a better preparation than he can make and a preparation that the profession prefers, few pharmacists would not avail themselves of such a standard remedy. As the matter now stands, the physiological assay is made by the physician at the bedside. He gives the drug for a reasonable time and gets no effect perhaps, and then has to increase the dose until the desired results are attained. No amount of standardization would ever do away with his ascertaining the physiological dose for the individual patient, but it certainly would shorten the process and avoid the loss of much valuable time, which may mean the life or death of the patient.

10. **Thymic Tracheostomy, Tracheoscopy, Thymectomy, Cure.**—Jackson reports a case of disease of the thymus gland. He observes that this is the seventh case on record of the cure of "thymic asthma" by thymectomy, the first case demonstrated radiographically, and the only case in which the mechanical pathology of the disease was proved by direct tracheoscopic examination of the living patient. Thymic tracheostomy is a more accurate term than thymic asthma and is acceptable, now that the mechanical nature of some cases has been proved. Let thymic asthma be applied to cases supposed to be associated with neuropathic, convulsive, lymphatic, rachitic,

hæmic, or other pathology, if desired, until their exact pathological mechanism shall have been demonstrated, as has been done beyond doubt in his own tracheostenotic case. No patient with thymic tracheostenosis should die of asphyxia if a surgeon is at hand in time, with a very long tracheal cannula, bronchoscope, or similar tube which will reach below the obstruction. All the patients who have died after tracheotomy seem from the reports to have died from the want of these long tracheal cannulae. These cannulae may be worn indefinitely, but a better procedure in thymic cases is to extirpate the thymus gland, partially or totally, or an exopexy may be done. The long tracheal cannulae prevent asphyxia from tracheal compression while the finger of the surgeon is passed into the mediastinum to break up adhesions and remove the gland. This removal cannot be done satisfactorily by pulling the gland upward with forceps, as the gland would be torn. Friedleben's dictum, *es giebt kein Asthma thymicum*, is an error. The thymus gland in the author's case did compress the trachea sufficiently to diminish and to obliterate momentarily its lumen. An absolutely positive diagnosis can be made with the tracheoscope. Upper tracheoscopy is probably not safe in these cases. Tracheotomy should be done under infiltration anaesthesia, and should be high, so as to be as far as possible away from the thymectomy wound. Thymectomy is indicated, and is best done by the insertion of the little finger from above downward behind the sternum through a transverse incision after double sternocleidomastoid tenotomy. The insertion of the finger should be of brief duration, as, though the patient with the long cannula inserted is safe from asphyxia, there seems to be serious cardiac inhibition, probably from compression of nerve trunks about the oesophagus. One should be careful not to injure the pleura. An almost complete thymectomy is without effect on either the blood or nutrition.

MEDICAL RECORD.

May 25, 1907.

1. The Antrum of Highmore as an Ætiological Factor in the Production of Hay Fever (So Called),
By JACOB E. SCHADLE.
2. A Clinical View of Ulcer of the Stomach,
By FENTON B. TURCK.
3. A Method of Reducing Old Colles's Fractures: Stiffness Following Apparent Contusions of the Elbow,
By CLARENCE A. McWILLIAMS.
4. A Study of Blood Pressure in Compressed Air Workers,
By HARLOW BROOKS.
5. Popular Education in Matters Medical. A Plea for a More Thorough and Widespread Diffusion of Knowledge in Hygiene and Prevention of Disease,
By H. W. WRIGHT.
6. Inaccuracy of Dare's Hæmoalkalinometer,
By FRANK P. VALE.
7. The Use of Pilocarpine for the Relief of Pruritus, Especially in Regard to Pruritus Vulvae,
By JOHN J. REID.

1. **The Antrum of Highmore as an Ætiological Factor in the Production of Hay Fever.**—Schadle has treated in three years (1904 to 1906) ninety-one cases of hay fever, by paying exclusive attention to the antrum of Highmore of these patients. Among the cases stated is one patient who received the Dunbar treatment without effecting any benefit, the antral method was recommended and applied, with the result that the asthma disappeared within the first twenty-four hours and after several subsequent treatments, and within a week he was able to follow his profession without any inconvenience and considered himself practically cured. At the beginning of the hay fever season of 1906, while upon a business trip through Ohio, he was taken seriously ill with the disease, and, upon his arrival at his destination, he was again given the Dunbar serum treatment, which was continued for about ten days and until

his arrival home, when the antral treatment was again administered, with the result that within one week he enjoyed perfect relief. The author's observation is borne out by the experience that in those cases in which unusually developed abnormal openings of the antra prevailed, the results of treatment were more prompt and satisfactory than in those where the abnormal dimensions of the communications were much less; the former favoring and facilitating instrumentation and the application of remedies, and the latter increasing the difficulties. The observance of this point offers a rational explanation on anatomical grounds for therapeutic failures. Dissections have shown that the antrum of Highmore is a variable cavity as to its dimensions in different individuals, and also that an anomaly may sometimes exist, particularly as regards subdivision of the sinus into compartments by bony walls or partitions. It was also observed that "rose cold" or "hay fever" of one or two seasons' existence in certain individuals, yielded on an average to treatment more readily than it did in those who had had the disease for many seasons or where it extended over a long period of time. It may be concluded from this that as yet the antral mucous membrane had not undergone permanent inflammatory degeneration or changes in those patients who thus were readily cured. If this observation can be further verified in the future, it certainly adds a valuable factor to prognosis. Of the whole number of cases referred to by the author, one was a total failure. Though treatment directed to the antrum was faithfully followed for a reasonable period, yet no impression could be made and the symptoms refused to yield. In given cases of catarrhal maxillary sinusitis or hay fever in which local malformations obtain with regard to the location and size of the opening of the antrum, anomaly of the sinus must also be taken into account when dealing with a certain class where insurmountable barriers to treatment arise. Also of this number three did not respond for lack of adequate treatment. Among the number there were twelve who were entirely relieved within a period of about two and one half weeks and who had suffered in former years six to eight weeks each season, and the remainder were fully and completely relieved of the disease and its symptoms in a week or ten days, and, in exceptional instances, some in four days, treatment of the last two classes having been administered daily. The author's observation has been that the reflex symptoms first to disappear were burning and other disturbances of the eyes, pruritus of the throat and ears, finally sneezing and discharges from the nose, and last asthma and cough. That chronic catarrhal maxillary sinusitis is a morbid process productive of intranasal and postnasal catarrhal disturbances is not to be questioned, when it is understood that, by directing treatment to the antrum, many of these cases are relieved and get well.

4. **A Study of Blood Pressure in Compressed Air Workers.**—Brooks has made some experiments on blood pressure in caisson workers. Of the seventy-five men on whom observations were made, all but two had been working in compressed air over one month and may therefore be considered as habituated compressed air workers. Forty-four had worked in compressed air less than one year, twenty-three over one year and less than five, six over five and less than ten. Two men, both engineers, had worked almost continually with compressed air, one for twelve and one half and the other for twenty-two years. No substantial difference in results was found in any of these various groups, hence it seems fair to assume that the statistics collected from the entire group is fairly characteristic for healthy men, for all these men had been subjected to physical examination and all were in the prime of working life, that is, from twenty to forty-five years of age. Forty-three of them admitted using both tobacco and alcohol habitually, some of them to great

EXCESS, BUT WITHOUT APPARENT EFFECT ON THE CIRCULATION IN QUESTION. From normal diastolic and from normal systolic and the rest claimed freedom from both habits. The average systolic pressure of the seventy-five men, taken before entrance to the air, was 116.19 mm. Hg. The average diastolic pressure taken at the same time was 91.08 mm. Hg. The average systolic pressure taken in the air was 128.88 mm. Hg. and the average diastolic pressure taken at this time was 87.68 mm. Hg. The average systolic pressure taken soon after decompression was 112.76 mm. Hg., and the average diastolic, 90.78 mm. Hg. It then appears that the difference in systolic pressure of the resting man outside the compressed air and after an hour or more work in thirty-one pounds plus is but 12.69 mm. Hg., no more difference than would certainly be expected between a resting man and a man immediately after heavy exercise at ordinary atmospheric pressures. The difference in the diastolic pressure was but 3.4 mm. Hg., but in this case the diastolic pressure was decreased 3.4 mm. while the systolic pressure was raised 12.69 mm., so that the difference between systolic and diastolic pressure outside the air was 25.11 mm. While this same space under compression was 41.2 mm., again practically the same conditions found under ordinary atmospheric pressure after active exercise; the diastolic after decompression as compared with that under the pressure showed the pressure under the air to be exactly 13.1 mm. lower. The significance of these figures are expressed in the sentence that in so far as these experiments go, the changes in blood pressure after labor under a pressure of thirty-one pounds plus are practically the same as under usual atmospheric pressure and that about the relative space exists between systolic and diastolic in both conditions, again practically like those in the normal atmosphere. Several points bearing on the question of compressed air labor arise in connection with these determinations. One of the most important of these is the disproval of the theory that many of the deleterious effects on the circulatory apparatus of compressed air workers follows as a result of the high external pressure on the superficial vessels. It appears demonstrated that the blood pressure is not abnormally raised under compressed air, and these observations confirm the now well established theory of gaseous liberation in the causation of caisson disease.

BRITISH MEDICAL JOURNAL.

May 11, 1907.

1. Remarks on the Early Symptoms of Mental Disorder.
By W. H. B. STODDART.
2. Vicious Circles,
By J. B. HURRY.
3. On the Distinctive Diagnosis Between Ménière's Disease and Other Cases Exhibiting Ménière's Complex of Symptoms,
By T. W. PARRY.
4. Nine Cases of Carbolic Acid Gangrene: With Short Notes,
By D. WALLACE.
5. An Early Specimen of Total Enucleation of the Prostate Removed by the Late Mr. McGill,
By J. A. C. FORSYTH.
6. New Facts in Relation to the Processes of Nervous Degeneration and Regeneration.
By W. D. HALLERKRON.

1. **Early Symptoms of Insanity.**—Stoddart considers various early symptoms of mental disorder, in the following order: Disorders of sensation are very common, and may be either excessive (hyperæsthesia) or deficient (anæsthesia). Hyperæsthesia occurs most frequently in maniacal states. Anæsthesia is the more common, and is found in states of exhaustion following acute fevers, and also in some early cases of dementia præcox. Disorders of perception include illusions, hallucinations, and imperceptions. Illusions are most commonly experienced in the delirium of fever. Hallucinations are classified according to the sense affected; those of vision usually take the form of flashes

of light. The most common hallucination is one referred to the abdomen, the so called epigastric sensation. Imperception is most commonly met with in the insanities due to alcohol and arteriosclerosis. The disorders of memory to be watched for are three, amnesia or loss of memory, hyperamnesia, or excess of memory, and paramnesia or erroneous memory. Loss of memory is a very common symptom; as a rule, things are forgotten before actions, and ideas of things before ideas of actions. Hyperamnesia occurs most frequently in certain cases of idiocy and in some cases of chronic mania. In paramnesia incidents are remembered which have never occurred. It is almost limited to a form of alcoholism associated with peripheral neuritis, known as Korsakoff's disease. Disorders of conduct are of the greatest importance. In the various forms of mental dissolution, the first motor system to be affected is the volitional, the pyramidal system, which is myelinated at least sixteen months after the instinctive corticorubrospinal system. The first symptom of mental disorder is loss of voluntary control of the instincts. The pyramidal system is unable to control the corticorubral. The patient spends money recklessly and must be out of doors playing games. A special example of the outdoor instinct is motoring. With advancing dissolution the patient becomes a sexual libertine, then the eating instinct gets out of hand, and the collecting instinct becomes prominent. Disorders of Emotion. Disproportionate excitement and depression are common. Unjustified suspicion is an important symptom of mental disorder; it occurs in the early stages of paranoia and dementia paranoides. The best physical sign of suspicion is a peculiar restlessness of the eyes. Morbid fears are not very common. Loss of control of emotional reaction occurs most typically in general paralysis, chronic alcoholism, and slight maniacal conditions. Loss of emotional reaction, or apathy, is commonly an early symptom of melancholia or dementia præcox. Delusions scarcely come under the head of early symptoms, but it is of course desirable that they should be recognized as early as possible. Attention should be paid to loss of sleep; it is undoubtedly a mental disorder and should be treated as such.

2. **Vicious Circles.**—Hurry denotes by the term "vicious circle" a morbid condition in which cause and effect are so correlated that cause becomes effect, and effect becomes cause. Physiological or healthy circles are always operative in the body; among them may be mentioned the processes of hæmogenesis and hæmolysis, the reciprocal relation between the condition of the blood and the respiratory function, etc. The various vicious circles may be grouped as follows: 1. Organic circles. Here are included circles arising between two organs so interdependent that when the first is diseased and in difficulty, the second, becoming in turn affected, upsets the first and *vice versa*. The lungs and heart in acute pneumonia furnish a good example. 2. Symptomatic circles. Here the circle is formed by a diseased organ and one or more symptoms, due to and aggravating the morbid processes. For example, adenoids lead to mouth breathing, which in turn provokes a further development of adenoids. Other examples are dental caries due to oral sepsis, pulmonary hæmorrhage causing coughing, etc. 3. Infective circles. Children suffering from oxyuriasis furnish a good example of an infective vicious circle. The irritation and consequent scratching leads to portions of the worms and to their eggs being caught under the nails, conveyed to the mouth, and swallowed by the host. Thence the ova passes into the intestines and rapidly attain sexual maturity. In this way the irritation secures, by autoinfection, successive generations of the parasite. 4. Neurotic circles. To this group belong such vicious circles as are completed by two or more nervous conditions, without any evidence of organic disease. 5. Chemical circles. A chemical vicious

circle occurs in diabetes mellitus, in reference to the two important conditions of polydipsia and polyuria. The polydipsia leads to dilution of the patient's blood and thus promotes the excretion of sugar and the associated polyuria. The polyuria, on the other hand (by depriving the system of a large quantity of fluid), leads to greater concentration of the blood, and consequently to thirst and polydipsia. 6. Mechanical vicious circles are formed when abnormal pressure or tension relations act and react reciprocally on each other. An example is met with when a retroverted gravid uterus becomes so impacted in the pelvis as to press on the urethra and cause retention of urine. The distended bladder increases the retroversion and the impaction; the retroversion increases the retention. Similar effects may be produced by myomata or other pelvic tumors. In ascites pressure on the renal veins may lead to ischuria, which in turn aggravates the ascites. 7. Artificial circles. To this group are relegated such vicious circles as do not arise in the ordinary course of disease, but have an artificial origin. Such are the circles associated with indulgence in alcohol, tobacco, opium, or similar narcotics, etc.

4. **Carbolic Acid Gangrene.**—Wallace reports nine cases of gangrene of the finger or fingers, due to the application of carbolic acid dressings. In seven out of the nine cases, amputation was required. In four of the cases the strength of the solution used was not over five per cent. In none was a waterproof covering used, nor had there been any constriction by a bandage. The appearance of the gangrenous part is characteristic. The skin is at first dry, wrinkled, and grayish white in color; later it becomes darker and more shrivelled. At the junction of the living and dead tissue there is some hyperæmia, and eventually a line of demarcation forms. This should always be waited for before amputation is performed. The condition is, as a rule, similar to a typical case of dry gangrene.

LANCET.

May 11, 1907.

1. New Facts in Relation to the Processes of Nervous Degeneration and Regeneration (*Oliver Sharpey Lectures, II*), By W. D. HALLIBURTON.
2. The Causes of Cardiac Motion and Disordered Action, By A. MORISON.
3. On the Treatment of Fractures in the Vicinity of Joints, By W. A. LANE.
4. The Opsonic Index to Various Organisms in the Sane and Insane, with the Results Produced by Injecting Tuberculin, By C. J. SHAW.
5. On the Clinical Aspects of Metastases to the Central Nervous System and Other Parts in Malignant Disease of the Viscera, By C. O. HAWTHORNE.
6. A Case of Paratyphoid Fever Following the Removal of an Ovarian Cyst, By W. THYNE.
7. Perforation in Typhoid Fever and Its Relation to Blood Pressure; With a Report of Five Cases, By A. L. SHEPPARD.
8. Status Lymphaticus, By L. VINTRAS.

1. **Regeneration of Nerves.**—Halliburton, in the second of the Oliver Sharpey lectures on the degeneration and regeneration of nerves, puts forward strong evidence in support of the Wallerian doctrine that new nerve fibres are not autogenetic, but are growths from the central ends of divided nerve trunks. If connection of the peripheral segments with the central nervous system is effectually prevented, real regeneration of structure and restoration of function never occur. The regenerated fibres always degenerate in a peripheral direction, and in a peripheral direction only, when the link which binds them to the central nervous system is again severed. The medullary sheath appears earliest at situations near the point where the ends of a nerve have been joined together, and reaches the distal portions later. What takes place in the per-

ipheral segment of a divided nerve is a multiplication, elongation, and union into long chains of the neurilemmal cells. The same change is even more vigorous at the central termination of the cut nerve. The medullary sheath has nutritive and phagocytic functions. At the central end the nutritive function is effective and provides for the nourishment of the actively lengthening axis cylinders. At the peripheral end, unless the axons reach it, it is ineffective in so far as any real new formation of nerve fibres is concerned. If, however, the axons reach the peripheral segment the work of the neurilemmal cells has not been useless, for they provide the supporting and nutritive elements necessary for continued and successful growth. The neurilemmal activity appears to be essential, for without it, as in the central nervous system, regeneration does not take place.

4. **Opsonic Index in the Insane.**—Shaw has studied the opsonic index to various organisms in the sane and insane, together with the results produced by injecting tuberculin, and arrives at the following important general conclusions: 1. As the insane are particularly liable to tuberculous infection a comparison of the average indices recorded in the sane and insane and also in the various classes of insane patients would indicate that the opsonic power of the blood serum can be used as a measure of liability to infection, and that a low opsonic index precedes infection. 2. The injection of a small dose of tuberculin, T. R. in healthy persons produces no negative phase to the tubercle bacillus and therefore may be used as a method of diagnosis. A smaller dose of tuberculin will, however, produce a negative phase in a predisposed person than in one less liable to tuberculous infection. 3. To determine the value of a negative phase after injection the daily variation in opsonic power as well as its level at the time of injection must be estimated. For this reason a number of consecutive observations are necessary; a single, or a number of isolated observations is not sufficient. 4. The average opsonic indices of healthy individuals varies little to different organisms. 5. The injection of a large dose of tuberculin, even in healthy individuals, causes a fall in opsonic power to other organisms than the tubercle bacillus. This explains the liability of tuberculous cases to secondary infection. For purposes of differential diagnosis by the production of a negative phase a very small dose must be administered. 6. Large doses of tuberculin can be injected into healthy persons without producing constitutional symptoms. Amount of dose may therefore be a matter of diagnostic significance, as a small dose causes a reaction in infected cases.

7. **Perforation in Typhoid Fever.**—Sheppard reports five cases of perforation in typhoid fever, paying special attention to the various signs and symptoms supposed to be pathognomonic. The pulse rate rose in four cases, and in one was the only marked feature. Peritoneal symptoms were diagnostic in one case, while some pain was present in all. The temperature rose in three cases, but fell later. Leucocytosis was marked in one case, but other signs were also unmistakable. A rise in blood pressure immediately following the catastrophe has been recently stated to be indicative of perforation. Crile has reported five cases, in every one of which the pressure rose immediately after perforation. The average blood pressure in 115 cases of typhoid fever was found to be 104, varying between 138 and 74. In the writer's cases, however, the rise of blood pressure did not appear to be as certain, and consequently as valuable a sign as Crile's figures would indicate. The signs of perforation are, however, notoriously uncertain; and in no case of typhoid fever with fairly sudden abdominal pain, combined with any one well recognized sign (providing there is no other ascertainable cause) should we hesitate to diagnosticate

a perforation. Amongst these signs should certainly be placed a rise in blood pressure. It seems quite as constant as leucocytosis, and is certainly more easy to observe and chart throughout the course of the disease. In the diagnosis of perforation we must remember that the signs are nearly always most marked about two hours after the accident has occurred, after which they are usually found to return to their previous conditions. The change in blood pressure is no exception to this rule, as the tendency seems for it to fall again to its original level as rapidly as it has risen. But a stationary pressure is no indication that perforation has not occurred.

8. Status Lymphaticus.—Vintras states that the status lymphaticus, as its name implies, is more a constitutional condition than a disease *per se*. It occurs mostly among tall, rather sparely built subjects, with fair, clear skins, rather pale, but not with the dead white pallor of anæmia. They are of a slow, sedentary habit of life; are mostly highly intelligent, but in a deep, earnest way; they are self concentrated, shy with strangers, and of a retiring disposition, but genial and brilliant when at ease. They are very sensitive to climatic influences and feel cold keenly. The pulse is usually slow, but under the stress of worry may mount to above 100, and remain there for days. Sudden death is common, and is probably due to some interference with the nerve centres which causes the dilated walls of the heart to cease contracting. Subjects of the status lymphaticus recover slowly from acute illnesses, which are apt to become chronic. On the other hand, they are less liable than others to neurotic and tuberculous affections. The condition has also a distinct tendency to improve with advancing years.

AMERICAN JOURNAL OF OBSTETRICS.

May, 1907.

1. The Prophylaxis and Treatment of Postoperative Phlebitis, By A. BROTHERS.
2. Postoperative Thrombophlebitis, By H. C. COE.
3. Mesosigmoiditis and Its Relation to Gynecological Affections, By F. RIES.
4. A Discussion of the Indications for Connecting Uterine Retrodisplacement, By R. S. HILL.
5. Ventral Fixation of the Uterus as a Cause of Dystocia, By R. H. INGALLS.
6. Some Observations on Backward Displacement of the Uterus, By E. W. PINKHAM.
7. Report of a Case of Complete Rupture of the Uterus During Labor, By A. R. SMALL.
8. Pregnancy and Normal Labor at Full Term After Abdominal Hysterectomy for a Large Submucous Fibroid, By H. N. VINEBERG.
9. Two Cases of Dystocia Due to Ovarian Cysts, By M. W. MYER.
10. Some Causes of Sudden Death and Syncope During and After Parturition, By A. C. GODFREY.

1. Prophylaxis and Treatment of Postoperative Phlebitis.—Brothers associates phlebitis and venous thrombosis to form postoperative phlebitis, the thrombi being usually the result of changes in the endothelium of the affected vein or veins. Microorganisms, clots, gangrene, and inflammation in or around the vessels are contributing causes. There are certain cases in which retardation of the blood current leads to coagulation, thrombosis, and phlebitis, but in many others the phlebitis, clot, and thrombosis are due to an injury to the intima of a vein, or the accumulation of microorganisms on its wall. Prophylactic treatment consists in the following: 1. Careful attention to the detail of each operation, adequate drainage by vagina or abdomen in purulent or infective conditions, the Fowler position being used when necessary. 2. In aseptic, intra-abdominal conditions which are subjected to anything except fixation operations, postoperative phlebitis will be less likely to occur if the patient is kept in bed less than a week. As to treatment when the disease is ac-

tually present, the author suggests rest in bed, elevation of the limb, wrapping it in cotton and bandaging it loosely. An ice bag may be applied to the painful area. Rubbing of the vein is highly recommended.

4. Indications for Correcting Uterine Retrodisplacement.—Hill gives the following reasons for denying the proposition that retrodisplacement causes no trouble, and therefore requires no treatment: 1. In some cases, it is true, there are no symptoms. In the cases with symptoms we should consider the condition of the nervous system of the patient. We should also remember that with some tissues, after displacement, there is greater resisting power to abnormal influence than with others. Some women may be the subjects of uterine displacement to the end of life, and be unconscious of anything abnormal, but with the majority of such women abnormal manifestations are sure to come, sooner or later. 2. Correction of the displacement fails to cure in some cases on account of the structural changes that have occurred in the pelvic tissues. Varicose veins, increase of connective tissue in the uterus and ovaries, are the result of long standing displacement, and emphasize the importance of early treatment. 3. Cure of the complications often brings relief, even when the uterus still remains displaced, but it is probable that such relief will be only temporary unless the displacement is corrected. The author thinks it cannot be shown that the function of a displaced uterus is not disturbed, and that there are no abnormal manifestations attributable to such displacement.

5. Ventral Fixation of the Uterus as a Cause of Dystocia.—Ingalls believes that ventral fixation is an undesirable operation, except in cases in which the ovaries have been removed or the woman has passed the period of child bearing. He objects to all forms of ventral suspension with these exceptions. Three cases are narrated, in the first of which the parturient uterus ruptured posteriorly. The foetus was dead. A supravaginal hysterectomy was performed, the patient recovering. In the second case there was a partial rupture of the posterior uterine wall. A Cæsarean section was performed, this patient also recovering. In the third case a dead child was extracted after a very difficult labor by podalic version. In all these cases the attachment of the uterus to the abdominal wall had remained firm, and was separated at the time of operation with great difficulty. The uterus had developed during pregnancy entirely along its posterior aspect, and was thin to the point of rupture, while the anterior wall remained very thick. The contractions of the uterus during labor were reversed in direction and absolutely precluded delivery, except by artificial means. These facts were deemed sufficient to condemn the operation as long as any possibility of child bearing remains.

THE PRACTITIONER

May, 1907.

1. Further Observations on Heart Block, By G. A. GIBSON and W. T. RITCHIE.
2. Some Fractures About the Elbow Joint, By A. CARLISS.
3. On the Use of Opium in Acute and Chronic Diseases, By I. BURNEY YEO.
4. The Indications for the Use of Opium in Acute Disease, By R. STOCKMAN.
5. Chronic Morphinism, with Special Reference to Treatment, By W. E. DIXON.
6. Hypertrophy of the Pylorus in Adults and Its Treatment, By N. NEUBER.
7. On the Indications for the Use of Opium in Acute Disease, By H. S. SANDIFER.
8. Opium in Acute Diseases, By A. BOUSFIELD.
9. A Review of Recent Neurological Surgery, By D. ARMOUR.
10. Review of the Diseases of the Respiratory Tract, By J. J. PERKINS.
11. The Treatment of Phlegmasia Alba, By C. I. MERRILL.

12. Uterine Curettage, By H. T. HICKS.
13. On Some Affections of the Gastrointestinal Tract in
Older Subjects, By A. W. SIKES.

1. Further Observations on Heart Block.—Gibson and Ritchie remark that it has now been conclusively proved by clinical observation and experimental investigation that disturbances of both the rate and the rhythm of the heart may be the manifestation of impairment of its conductivity. The communication between auricle and ventricle constituting the functional bond of union between them as the auriculoventricular bundle of His, and both partial and complete block may take place at this location. Though a lesion of this bundle has been experimentally shown to produce heart block, and although morbid changes in it have been described by various writers, partial or even complete block at this point may be induced by vagus stimulation, as has been shown by experimenters with helleborein, digitalin, and calycanthin. A case is narrated in very careful detail in which there was a block at this bundle and also a marked depression of conductivity at the junction of the superior vena cava with the right auricle. The blood pressure was also carefully studied in this case, the highest systolic pressure being 190 millimetres of mercury, and the highest diastolic pressure 80 millimetres.

3. Opium in Acute and Chronic Diseases.—Burney Yeo thinks the best test of the judgment and clinical capacity of a medical practitioner consists in the way he uses opium. Caution in its use and dosage, especially the hypodermic use of morphine, is always to be kept in mind. Its greatest use is to relieve pain, especially when accompanied by spasm. It is now seldom used as a hypnotic. The author approves of the various combinations of opium, apart from the alkaloids as still having great utility, and applies them as near the seat of the diseased condition which they are designed to relieve, as possible. He admonishes that all secretions, except those of the skin, are checked by opium, hence the propriety of combining an hepatic stimulant with it. Among the conditions for which opium is a valued remedy, he mentions acute gastritis, chronic gastric catarrh, chronic gastric ulcer, with or without perforation, cancer of the stomach, painful affections of the intestine, including chronic diarrhoea, and acute dysentery. It is often helpful at the beginning of acute peritonitis. It is seldom indicated when disease of the circulatory system is present, and it must be given cautiously in connection with respiratory disease. Heroin and codeine are considered the best derivatives of opium in the treatment of pulmonary phthisis.

5. Chronic Morphinism.—Dixon divides the victims of this habit into the opium eater, the opium smoker, and the one who uses it hypodermically. The first is the least common, and in the East, at least, it is taken as much as tobacco or caffeine is taken here. Opium smoking is the least harmful, much of the morphine which is in the opium being destroyed by heat. Morphine injection is the worst form of the habit. Neurotics are most susceptible to this habit. Large doses of the drug are tolerated by those who are victims of this habit because the greater portion of the alkaloid is destroyed within the body, like starch or alcohol. A morphine habitué loses flesh and becomes sallow, his mouth is parched, and he has gastric catarrh and chronic constipation. When out of the influence of the drug the psychical centres become hypersensitive, and sudden withdrawal of the drug may threaten the patient with collapse. It is therefore wise in treating this condition to gradually diminish the drug, and administer cerebral depressants if they are indicated. A generous diet is very important, alcohol should be used sparingly, if at all, and open air exercise, tonic douches, and massage, should be administered. Relapses after apparent cure are very common.

6. Opium in Hypertrophy of the Pylorus.—Neild finds excess in the muscular tissue of the pylorus, (1) as a complication with gastric ulcer, cancer, etc., (2) as a complication of movable kidney, (3) as the result of a gastric motor neurosis, (4) in infants in the form of congenital stenosis. Spasm of the pylorus if frequently repeated will also cause it. Dietetic and medicinal treatment of this condition have usually given poor results, and the same is true of lavage. As a substitute for gastroenterostomy the author has found the opium treatment very satisfactory. He administers it in the form of the tincture, three to ten minims being given in two teaspoonfuls of water twenty minutes before taking food. The dose should vary with the number of meals and the degree of dilatation. The action of opium in this instance is that which it has on unstriated muscle everywhere, namely, antispasmodic. In the pyloric hypertrophy which is associated with gastric ulcer the opium should be given half an hour before the usual time when pain shows over action. Even in those cases of pyloric spasm in which hypertrophy is not apparent the use of opium will be found beneficial.

9. Neurological Surgery.—Armour quotes Cushing, in referring to the influence of hæmorrhage, either prenatal or postnatal, or during parturition, in producing the birth palsies. The intracranial hæmorrhage is usually venous and is caused by their overlapping and the unusual tension which occurs as the fetal head is being moulded for extension. In studying a case of cerebral lesion the history of the labor is important, also the degree of post partum asphyxiation. Cushing thinks that carefully conducted craniotomies upon newborn children are comparatively free from danger, and will often prevent death from cerebral hæmorrhage, as well as the bad ulterior consequences of hæmorrhage in children who survive. Bullard thinks that in simple or compound fracture of the outer surface of the cranium operation in adults is advisable, even if there is no displacement or depression. In children all depressed fractures should be operated on, and, in general, in any case in which unconsciousness follows consciousness after head injuries. Unilateral convulsions subsequent to head injuries, or cerebral or meningeal paralysis indicate operation.

11. Causes of Pruritus Ani.—Mummery agrees with those who think the treatment of this annoying condition is difficult and often unsatisfactory. It should be remembered that this is a symptom rather than a condition. Its cause is always a local one, constitutional conditions having only a predisposing influence. The itching may begin at any point in the anal canal or the skin surrounding the orifice, but the most intense sensation is usually at the mucocutaneous junction where an immense number of nerve endings are to be found. Examination of this tract should be very careful and thorough with finger, anal speculum, and bent probe. Not only the anal canal should be investigated, but also the rectum as high as the rectosigmoidal junction. Moisture of the anal surroundings, from rectal mucus, piles, polypi, fissures, fistulæ, prolapse of the rectum, or worms may be the cause of the itching. Catarrhal proctitis is also a common cause. The true cause having been ascertained, in a given case, it should be treated by scientific and common sense methods.

12. Uterine Curettage.—Hicks thinks this operation is too often performed without sufficient regard for the pathological condition which has caused the symptoms. Leucorrhœa is usually not an indication for this operation, for it is curable by other means. Suppurative endometritis also is not an indication for curettage, but for uterine dilatation and drainage, with antiseptic applications. Curettage for uterine fibroid, it must be remembered, is always only palliative. With

chronic myometritis, associated with chronic vaginitis and with arteriosclerosis, occasional curettage is often helpful, but hysterectomy may be the ultimate requirement. In early abortions there may be persistent and annoying bleeding until the uterus is quite free from decidua. The use of the finger will sometimes be enough to clean out the uterus; in other cases, a blunt curette or ovum forceps, but in the majority of cases the very cautious use of the sharp curette will be best. Curettage is often a very useful assistant to diagnosis. The blunt flushing curette is believed to be especially useful.

Proceedings of Societies.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Seventh Triennial Session, held in Washington, on Tuesday, Wednesday, and Thursday, May 7, 8, and 9, 1907.

The President, Dr. REGINALD H. FITZ, of Boston, in the Chair.

(Continued from page 957.)

The Borderland of Medicine and Surgery.—This was the title of the president's address. He stated that his object would be to call attention to the progress made in the art of medicine from the time of its inception, and to pay a deserved tribute to the men who had been conspicuous in its development. He then traced step by step the evolution of medicine from its period of obscurity and degradation before the time of Christ to its present exalted and enlightened state. Before Christ the practice of medicine was relegated to the lowest classes, the higher classes considered it to be beneath their dignity. As Rome decayed the progress made by Celsus declined, but later many manuscripts were written and preserved within the inaccessible libraries of the monasteries at this time. The monks, the possessors and authors of many of these manuscripts, practised medicine as it was then understood somewhat extensively. Though at first their ministrations were limited to members of their own sex, they were eventually allowed to practise medicine unrestrictedly, but not to infringe upon the domain of surgery. Later, as a result of the many wars and their consequent devastation, the demand for medical men increased. In response to this increased demand medical schools were established, notably that at Salernum, where the first effort was made to distinguish between the educational training of physicians and that of surgeons. Gradually these schools gave way to the establishment of universities in which the faculty consisted of all graduates, each of whom was privileged to teach. As yet the distinction between physician and surgeon was somewhat obscure, but gradually the preliminary preparation of the surgeon came to be much more comprehensive and extensive than that required of the physician. The embryo surgeon was compelled to receive a university education supplemented by years of practical dissection and work along surgical lines. The physician's knowledge, on the contrary, was at that time much more superficial and of a theoretical character. Previous to the fourteenth century the practice of leeching, venesection, cauterization, and to some extent minor surgery was limited to the class known as barbers, but in the early part of the fourteenth century the educated surgeons in Paris established an association of which the object was to regulate the practice of medicine in Paris. Thus barbers were compelled to submit to an examination before this association, the forerunner of our modern State board, before being licensed to practise medicine.

After 1350 this harmonious arrangement between the two branches of the medical profession, the physicians and the surgeons, was disarranged by an internal strife, the physicians refusing to submit to the government by the surgeons. This warfare among the surgeons, physicians, and barbers, continued for many years, during which little progress was made in medicine. It was finally adjusted amicably by the jurisdiction being placed in the hands of an examining board composed of physicians only. In England and Scotland a similar state of affairs existed, introduced by Sydenham, the English Hippocrates, who by his incomparable reasoning overthrew the previous empirical classification of disease held by Galen.

His theories were constructed on a new basis, namely, that the interpretation of disease depended upon the observation of symptoms and their relation to pathological anatomy. About this time Morgagni, appreciating the truth of Sydenham's teachings, did much toward advancing medicine along these lines. Thus his teachings, associated with those of Sydenham, were really the beginning of our modern conception of medicine and surgery. In 1578, in Padua, the first efforts at clinical teaching were made. In Leyden, a little later, the first attempt at bedside teaching was inaugurated, and there, with a clinic of twelve beds, the new method was introduced. Soon John Hunter, said to be the father of pathology and surgery, showed that the same methods or research and reasoning employed in surgery could be used with equal benefit in medicine. Under him medicine and surgery became more closely allied than ever before, and as the fruits of Bichat's work medicine was placed on the same firm basis.

During the first half of the nineteenth century much progress was made in pathology, anatomy, and physiology. In Germany Virchow, following the tendency of Hunter's and Bichat's work, gathered about him a corps of assistants through whom he was enabled to disseminate his teachings very widely. It remained, however, for the latter half of the nineteenth century to exceed all previous epochs in its relation to the progress of medical science. This new and distinct era was characterized by two great discoveries, that of anæsthesia and that of antiseptics.

The first of these, with which the name of Morton was intimately associated, was the result of an inspiration. The second was the culmination of prolonged labors. As a result of these two great discoveries or innovations decided changes took place in medicine and surgery. Operations before regarded as serious because of their duration were no longer considered so, because time had ceased to be a factor with the advent of anæsthesia. The former distinction between the surgeon and physician was made more vivid. There was a remarkable increase in the number of surgeons. There was an increased average length of life.

It was at this time that Dr. McDowell first performed the operation of ovariectomy, the indication for which had previously been treated by medical men solely. Later the removal of the uterus was attempted and successfully done. Thus by 1846 the borderland between medicine and surgery was firmly defined.

The introduction of antiseptics, begun forty years previously by Lister, and later perfected by Keith, of Edinburgh, further reduced the mortality of some major operations. Progress did not rest here, however, for, arising from the investigations made upon and conclusions derived from the corrosive action of the antiseptic solutions upon the tissues, asepsis, the foundation of modern surgery, was introduced and accepted. By reason of the utilization of the theory and practice of asepsis surgery became revolutionized, the number of operations increasing, with an accompanying decrease in mortality. Coincident with these results of asepsis and attributable to them, previously impossible

and undreamed of operations were now being performed, such as removal of one kidney, thyroidectomy, etc. And thus to-day our conception of surgery and medicine was somewhat different from that of the ancients.

The successful modern surgeon should put in years in his making and preparation. Though unusual dexterity was very essential, the skilled surgeon was one who knew when and how to operate and, what was of more importance, how to avoid operating. He should, as Billroth suggested, ask himself before operating if he would permit such an operation to be performed on himself. To-day, though the fields of medicine and surgery were somewhat sharply defined, the physician and surgeon were both subject to the same laws derived from an observation of pathological and physiological anatomy. The modern surgeon treated cases which the physician had been unable to relieve by purely medical means.

THE COMPARATIVE VALUE OF THE MEDICAL AND SURGICAL TREATMENT OF THE IMMEDIATE AND REMOTE RESULTS OF ULCER OF THE STOMACH.

The Indications for, the Methods of, and the Results to Be Expected in the Medicinal Treatment.—In this paper Dr. JOHN H. MUSSER, of Philadelphia, said that he had had a limited opportunity to study gastric ulcer, not having had more than 150 cases of his own. The paper was based upon over 1,800 cases of ulcer of the stomach and over 300 cases of ulcer of the duodenum published in full. The data had been carefully classified. They included a study of 586 cases related in private communications. No paper could be written without reference to the old writers.

Most observers considered a case as cured when after three or four weeks of treatment the symptoms disappeared. It was well known that perforation had occurred after a so called cure. Six months should elapse without symptoms before the case was considered as cured.

Dr. CHARLES G. STOCKTON, of Buffalo, said that there was no particular method of treatment suitable for all cases. It was not the object of his paper to distinguish between the medical and surgical treatment of these cases. We should attempt to exclude those cases which simulated peptic ulcer. He divided them into: 1. The acute peptic ulcer. 2. The chronic ulcer. The ætiology in many respects seemed to be dissimilar. The stomach did not readily succumb to injury or poison. He had had opportunities to examine the stomachs of several persons who had swallowed foreign bodies, with no evidence of trauma. It had been demonstrated that injuries of the stomach healed readily.

The preventive treatment, the immediate treatment, and the after treatment must be understood. The knife had not proved the panacea, as it had in appendicitis. The ulcer usually occurred at the posterior surface and in the lesser curvature, near the pylorus. The ulcers were supposed to depend upon a neurotrophic influence.

A jejunal fistula had been suggested to rest the stomach. The prevention was to maintain a calm nervous system and avoid anæmia, excluding foods requiring great motility of the stomach. A certain percentage of the cases would become chronic and a few perforative. An operation for hæmorrhage without reaching the ulcer was dangerous.

In the medical treatment, if there was bleeding by the mouth, we should give ice, gelatin water by a tube, morphine, and bismuth, and inject a saline solution per rectum. Then we should enjoin rest without food for a week, giving in the mean time salt injections. Nutrient enemata need not be given at first. It was better to enforce absolute rest—no food for from three to six days—then give arrowroot, gruel, milk, or albumin water.

He was convinced that many might be allowed a full amount of animal food. With marked motor excitability all food by the mouth must be withheld, and warm poultices applied over the stomach. Surgery was called upon to overcome spasm and to relieve very severe pain, stenosis, and perforation. It did not cure the ulcer, but gave it an opportunity to heal. Continued treatment long after apparent cure, also study of the stools for occult blood, was necessary.

Contributions of Surgery to a Better Understanding of Gastric and Duodenal Ulcer.—Dr. WILLIAM J. MAYO, of Rochester, Minn., said that ulcers of the stomach or duodenum might be indurated or nonindurated. The indurated ulcer involved all the coats of the stomach or intestine, and its existence might be demonstrated from the exterior of the organ. All the notable contributions of surgery to our knowledge of ulcer concerned this group.

Surgical investigation had shown: First, that ulcer of the duodenum in the upper inch and a half was as common as ulcer in the whole of the stomach; second, that the majority of ulcers called pyloric had their origin in the duodenum; third, that the male sex was more frequently afflicted with ulcer of the stomach and duodenum (sixty-two males to thirty-eight females) by reason of the fact that seventy-seven per cent. of duodenal ulcers were in the male, true gastric ulcer being about even in the two sexes, fifty-two males to forty-eight females; fourth, that cancer frequently had its origin in ulcer. In fifty-four per cent. of sixty-nine cases of cancer of the stomach submitted to resection by Dr. Charles H. Mayo and the writer in 1905-'6, cancer could be demonstrated to have had its origin in ulcer.

Nonindurated mucous ulcer, also described as clinical or medical ulcer, gave no evidence from the exterior of the stomach or duodenum of its existence, and unless the interior was successfully explored, the diagnosis remained in doubt. Nearly all the failures in the surgery of ulcer concerned this group.

The existence of acute nonindurated mucous ulcer was shown by operations for acute perforation, hæmorrhage, and post mortem investigations of deaths from these causes.

Chronic nonindurated mucous ulcer was certainly very rare. The large majority of cases so diagnosticated were in reality nonsurgical conditions, such as pyloric spasm, atonic dilatation, gastroparesis, and the gastric neuroses.

If a diagnosticated chronic nonindurated mucous ulcer (clinical ulcer) could not be demonstrated on the operating table, it probably did not exist, and an operation should not be done on an unproved hypothesis unless complications, such as hæmorrhage, perforation, or obstruction coexisted.

Chronic Ulcers and the Indications for Surgical Treatment.—Dr. JOHN C. MUNRO, of Boston, read this paper. His conclusions were based on 159 cases followed from the operating room in the last four years. Many of these cases exhibited no sign of ulcer when the stomach was exposed. The wisdom of surgical intervention was not questioned in perforating ulcer, and a gastroenterostomy should be done if time allowed. Other indications, such as stenosis and spasm, dilated stomach, hour glass constriction, stricture of the pylorus or cardiac adhesions, called for an operation. In many patients a neurotic strain was present, and, while many patients did not get absolute relief, the sequelæ were unimportant. In two failures, both patients died of late fatal hæmorrhage. Four deaths were due to technical errors. In his early work other deaths had followed, but they were not due to the operation. There were relapses in three cases with unknown cause. In two cases there were found calcareous mesenteric glands instead of ulcer of the stomach. When no gross ulcer

or pyloric stenosis was found, the stomach is closed at once. It was not always possible to locate the small ulcer and in many cases the ulcer was in the middle line and mostly present during meals, not after, and there was excess of acid. The mortality varied widely and recoveries had been reported in four or five per cent. of the cases. What did recovery in four or five weeks mean? Relapses were common. The mortality was quoted as from two to fifty per cent. The variation in the mortality was due to the fact that cases reported by the specialist and the surgeon and the hospital had to deal with the rich, while the physician's report included the cases of the poor. The surgeon did not see chronic ulcer of the stomach. The most trustworthy statistics could be established by from one hundred to five hundred family physicians who treated the factory girl, the workingman, and who saw the acute and fatal cases.

Absolute rest in bed for from two to three weeks and constant alkalinization of the stomach were important features in the treatment of this condition. Give the alkaline medicine before each meal and every two hours between the meals for months. Lime water was useless for this purpose. Carbonic acid should not be used. Magnesium oxide, three to four grammes, three or four times a day, was the best. Prepared chalk and bismuth subcarbonate might be used.

The indications for an operation are usually clear. A doubtful remedy was better than none. The case belonged to the medical man after the operation. The tedious treatment looked like a humdrum, but it saves the patient from relapses and perhaps from the other thing.

Dr. E. G. JANEWAY, of New York, agreed with Dr. Mayo that many so called gastric ulcers were in reality cases of gallstones or a neurosis. The comprehension of gastric ulcer was wide, but we must distinguish and find the surgeon guiltless of wishing to operate in all cases. He cited a case of peptic ulcer extending into the oesophagus. When perforation occurred, an operation was demanded at once, and the medical treatment did not apply to those cases. Stenosis, stricture of the pylorus or duodenum, needed an operation.

A Presentation.—Dr. FRANK BILLINGS, of Chicago, presented to Dr. Carmalt a loving cup, as a token of appreciation, from the constituent bodies of the congress.

NEW YORK OBSTETRICAL SOCIETY.

Meeting of January 8, 1907.

The President, Dr. BROOKS H. WELLS, in the Chair.

Pseudohermaphroditism.—Dr. ABRAHAM BROTHERS presented an hypertrophied clitoris and a suppurating Falloppian tube that he had removed from a woman, a pseudohermaphrodite, twenty-three years of age. A thick growth of hair extended from the pubes upward to the umbilicus and down both thighs and legs. The pseudopenis was imperforate, and measured in the placid state one inch and five eighths, and was bound to the parts below by a double frenum. The labia majora were well developed, the hymen was absent, the urethral orifice was large. The vagina admitted a finger to the depth of four inches. The cervix was undeveloped, and could barely be felt. The perinaeum extended two inches in front of the anal orifice. The contour of the body and the flattened breasts suggested the masculine type. At the operation for the removal of the diseased tube a careful search for testes was made, but none were found. In addition to the removal of the tube and the pseudopenis, two lateral perineal incisions were made to increase the size of the vaginal orifice.

Dr. Brothers also presented a photograph and drawing of a person seen some years previously who had a thick growth of hair on the upper lip, a girlish contour of the body, and an imperforate pseudopenis instead of a clitoris, with the other female external genitals. The case passed from observation without treatment for the removal of the growth of hair on the lip, for which the girl had applied.

Dr. HERMAN J. BOLDT said that he had examined the woman first mentioned by Dr. Brothers, and had noted that the perinaeum was unusually extensive, and also that the vagina was abnormally long. It was an interesting fact that, while he had made a careful bimanual examination and had been unable to find any abnormal pelvic condition, Dr. Brothers found a diseased condition of the annexa when he opened the abdomen. The conclusion to be drawn was that, despite a careful examination, one could not always tell the condition of the pelvic organs until the abdomen was opened.

Dr. J. RIDDLE GOFFE recalled a case of pseudohermaphroditism in which the vagina was so small that he could only with difficulty introduce his index finger with the patient under an anæsthetic. He adopted a novel means to secure a good sized vagina by making use of the covering of the enlarged clitoris for flaps in the vagina. Before removing the clitoris he made an incision through the skin on the upper and lower surfaces, and these two lateral flaps were dissected off the clitoris, but left attached at its base. The vagina was incised on either side, and the flaps from the clitoris were turned in and stitched in the vagina, filling in the spaces occasioned by the incisions. It was a novel procedure, but it worked well. The girl had since married with his approval, but he had not seen her since.

The PRESIDENT said that it would be interesting to learn if she conceived and bore children.

Dr. J. MILTON MABBOTT said that he had seen a patient in private practice, a man of an æsthetic type, who was married, but had no children. He had a hernia and on the same side an undescended testicle or none at all. The hernia became strangulated, at least irreducible and painful, and the man was sent to a hospital for operation. Though Dr. Mabbott was not present at the operation, he was informed on good authority that the hernial sac contained a miniature uterus and two ovaries, all easily recognizable. This man had one testicle and a well developed penis. Mentally, he was highly hysterical and inclined to the feminine type. Physically, he was largely masculine.

Fæcal Fistula.—Dr. BOLDT presented a piece of tuberculous intestine which he had removed for the repair of a fæcal fistula. The patient had had an operation by Dr. von Ramdohr for a condition that proved to be tuberculous pyosalpinx with tuberculous peritonitis. The intestines were so matted together that he considered that it would be unwise to attempt the removal of the pyosalpinx, so a gauze drain was inserted and the abdomen closed. Four weeks later a fæcal fistula, which was so large that all intestinal contents passed through it, developed. At the time of the second operation the patient was extremely emaciated, her pulse was rapid and of poor quality, and, though only twenty-four years of age, she looked over forty. The pelvis was filled with a tuberculous exudate, and the walls were undermined by a large irregular cavity, which was constantly infected with pus and fæces. The miserable condition of the patient was such that it was decided that an attempt should be made to close the fistula. After the affected bowel was loosened, it was found that the only rational procedure was to resect the injured part of the intestine, as the inflammatory exudate about the bowel was so great that the ends

could not otherwise be approximated. The extreme emaciation of the patient might to a large extent be accounted for by the affected bowel being the upper part of the ileum. As was expected to some degree, the patient did not rally from the shock of the long operation, but died eighteen hours later. The only plausible explanation of the intestinal injury so long after the operation seemed to be that one of the house physicians who had charge of the dressings caught the coil of intestines in a dressing forceps, and, being more or less brittle from its tuberculous condition, it was easily torn.

Dr. L. A. EWALD said that he would like to ask Dr. Boldt if there had been any adhesions about the gut. If there had been adhesions, fistula would be more likely to occur. Also he would ask if gauze was used after the operation, as in contact with gauze a fistula was easily formed.

Dr. BOLDT replied that Dr. von Ramdohr did the first operation, and that gauze was used for the purpose of drainage, but the fistula did not show itself till four weeks after the operation. It could not be caused by the gauze, because a good look at the specimen would show that a clean cut incision had been made and there was no injury that was likely to occur from gauze pressure or from ulceration. Therefore, the injury was probably caused by the dressing forceps.

Ectopic Gestation.—Dr. HERMAN GRAD presented a specimen of ectopic gestation showing the fetus in the membranes as found free in the peritoneal cavity. The patient was thirty-six years old, and had had five children, the last seven years previously, and two miscarriages. Her last regular menstruation was on October 28th, and lasted four days. On December 9th she was taken with cramps and, as something came away from her, she was supposed to have had a miscarriage. She remained in bed for six days, during which time the flow ceased, though the pain and abdominal discomfort continued. On December 23rd the uterus was found retroverted and the diagnosis of miscarriage and retroverted uterus was made, and the patient sent to the hospital for curetting. Under ether, a soft, boggy mass was found in the pelvis, which had not been felt previously on account of the thick abdominal walls. Later, on the same day, the abdomen was opened and a quantity of free blood, numerous clots, and the ovum free in the pelvis were found and removed. The rupture of the tube had probably occurred at the time of the bimanual examination, as when the patient was recovering from the first anæsthetic she complained of severe pain, and signs of internal hæmorrhage were developing. The patient made an uneventful recovery.

Dr. BROTHERS said that he had recently operated in a case of ectopic gestation that had been under observation for three weeks. The patient, before entering the hospital, had had symptoms of ectopic gestation, but an examination at the time of her admission failed to reveal anything except an enlarged uterus. The uterus was curetted, but the scrapings were not examined. The abdominal pain continued, and after a time signs of local inflammation and a moderate rise of temperature developed. Ultimately a mass which was increasing in size was found. At the operation this mass was removed, and on close examination was found to be a broken down ectopic ovum. The case emphasized the facts that we must be on the alert for cases of ectopic gestation, and that a pelvic hæmatocele might not be present in all cases.

Endometritis.—Dr. L. A. EWALD read a paper on *The Classification of Endometritis*. He divided all cases of endometritis into two groups: 1. *Endometritis of nonbacterial origin*. 2. *Endometritis of bacterial*

origin. Under the former would be found cases of endometritis secondary to diseased appendages, myoma and carcinoma of the uterus, disturbances of the circulatory system, chronic diseases. The causes of endometritis of this class would be anything that produced a disturbance of the circulation and nutrition of the pelvic organs.

Under endometritis of bacterial origin he included: 1. Gonorrhœal endometritis. 2. Tuberculous endometritis. 3. Putrid endometritis. 4. Septic endometritis.

By microscopical examination three forms of endometritis were recognized: 1. Glandular. 2. Interstitial. 3. Diffuse (an association of the first two forms).

He classified erosions of the cervix into the following varieties: 1. Simple erosions. 2. Papillary erosions. 3. Follicular erosions. 4. Congenital erosions.

The Symptoms and Clinical Course of Endometritis was the title of a paper by Dr. JOHN O. POLAK. He said that gonorrhœal endometritis gave moderate general symptoms, but marked local symptoms. The discharge was at first serous, but soon became creamy and purulent. On physical examination there was tenderness over the hypogastrium, the uterus was increased in size and was tender to pressure, and its mobility was limited by the surrounding muscular spasm. The cervix was swollen and puffy, the external os open, and the mucous membrane eroded and pouting. The acute inflammatory symptoms subsided, but the leucorrhœa continued purulent for several months, the cocci remaining in the cervical glands. By irritation the endometrium might be reinfected, with a return of the acute symptoms. It was generally admitted that chronic gonorrhœal endometritis without annexal lesions did not occur, as the corporeal endometrium was either acutely inflamed or free from cocci.

Septic endometritis was caused by the streptococcus and by *Staphylococcus pyogenes*, though other germs might enter into the infection. The cocci penetrated deep into the endometrium and into the lymph spaces of the myometrium and to the peritonæum. The general symptoms were more marked than in gonorrhœal endometritis. The discharge was usually bloody and might not be profuse. The uterus was enlarged and fixed, at first by the spasm of the muscles and later by the thickening of the broad ligaments. The usual complications were peritonitis and metritis. Salpingitis, ovarian abscess, and abscess of the uterine walls were less frequent complications.

Putrid endometritis resulted from the infection of dead material in the uterus by the saprophytic bacteria of the vagina. This form of endometritis always followed labor, abortion, or a sloughing intrauterine tumor. The mortality was small if the infection remained saprophytic.

Chronic endometritis might be either cervical or corporeal. The chief symptom of cervical endometritis was the thick discharge, and it usually followed gonorrhœa or some injury. Chronic corporeal endometritis rarely resulted from the acute form, but arose independently and was due to some disturbance of the circulatory equilibrium of the uterus.

The Treatment of Endometritis was the subject of a paper by Dr. RALPH WALDO. In all varieties of acute endometritis, he said, the patient must remain in bed, be given a mild diet, have the bowels moved at least once a day, and be given the general treatment for any disease from which she might be suffering. In the severe forms an ice cap to the abdomen and opium in some form would be necessary. Hot vaginal douches of sterile saline or of a mild saline solution might be indicated. In septic endometritis the interior of the uterus should be thoroughly examined, and any foreign material that it contained should be removed by the simplest method possible. One thorough intrauterine

douche of sterile saline solution or some very mild antiseptic should be given. Under no circumstances should a sharp curette be used.

The treatment of putrid endometritis could be divided into prophylactic and curative. The prophylactic treatment was to thoroughly empty the uterus after labor and abortion. The curative treatment consisted in removing the decomposing material from the uterus by means of the finger, a forceps, or the large dull curette and the use of one thorough intrauterine douche of sterile saline or a mild antiseptic solution. The repetition of intrauterine douches when there was no decomposing material to be washed away was of no benefit, and did harm by mechanical violence. The uterus should not be packed with gauze, for, no matter how it was packed, the packing would retard and not assist drainage.

Chronic cervical endometritis, when due to a laceration of the cervix, was easily cured by repairing or amputating the cervix as the occasion might demand. When there was no laceration, it was apt to be the result of gonorrhœal infection, and prolonged treatment might be required to effect a cure. The only treatment that had stood the test of time was the application of Churchill's tincture of iodine to the upper portion of the vagina, the vaginal portion of the cervix, and, in many instances, the cervical endometrium; the introduction of a tampon of nonabsorbent cotton wet with glycerin in which there was a mild antiseptic; and copious hot vaginal douches when there was no tampon in the vagina. All cysts of the cervix should be opened. Other applications had been used and in certain conditions were indicated.

When chronic inflammatory disease involved the entire endometrium, the first indication was thorough drainage of the uterine cavity. Curetting was indicated only when there was menorrhagia or metrorrhagia. The uterus should not be packed with gauze, except where there was hæmorrhage to be arrested. All forms of stems and repeated intrauterine applications should be considered as relics of the past.

Dr. MALCOLM McLEAN said that he agreed to practically all that Dr. Waldo had said. He had reduced his work in the treatment of these cases to thorough, careful drainage, one cleansing of the uterus followed by one thorough application of iodine. He relied on iodine as the only chemical agent to be used in the interior of the uterus, owing to its unique power of penetrating the tissues.

Dr. GOFFE said that he differed radically with Dr. Waldo as to the treatment of advanced chronic endometritis. He did not believe in the efficacy here of applications of tincture of iodine and tampons of boro-glycerin. In his experience these cases presented a serious condition of deep glandular disease, and nothing short of amputation of the cervix accomplished anything. Many simple cases, without deep glandular involvement, could be cured by office treatment. This treatment consisted in thorough dilatation, evacuating the glands and ducts. He also disagreed with Dr. Waldo in regard to the use of gauze in the uterine cavity. He used intrauterine gauze packing invariably where he found occasion to use the curette. The uterus was packed, first one cornu then the other, as far down as the internal os. The packing then came straight through the cervix and drained efficiently.

Dr. BOLDT said that in his experience, when there was metritis there was also always endometritis. He had had many cases in which the scrapings had been examined, and invariably this had been corroborated by the microscopical findings. He personally differed with some in the treatment of gonorrhœal endometritis. He now believed that, when we were satisfied that we had to deal with a gonorrhœal infection of the endometrium, before giving the gonococci a chance to invade the

tubes, heroic treatment was preferable in competent hands, and nothing was better in his opinion than to curette the endometrium as soon as possible, and then to use one of the antigonococcic solutions. He used a silver solution and packed the uterus with gauze impregnated with it.

Dr. R. A. MURRAY said that one point which had not been brought out was that when there was endometritis with metritis there was invariably salpingitis. If this was not recognized, the uterus might be pulled down during a curetting and injury be done to the adhesions that had been guarding the Fallopian tubes, and septic infection of the peritonæum might result. In regard to uterine applications, he considers tincture of iodine the best of all. He called attention to the danger of packing the uterus when there was any disease of the appendages present. He considered that packing the uterus was of special value in infantile uteri and in cases in which the uterus was flexed. Before dilating the cervix or applying iodine to it, he emptied the cervical glands by spearing them through the mucous membrane.

Dr. BROTHERS spoke against the indiscriminate use of the curette. In the majority of cases of puerperal infection he advised against the use of the curette after satisfying himself that there was no placental tissue to be removed. He did not believe in packing the uterus with gauze, except for hæmorrhage. He did, however, use a thin strip of gauze for a drain. He spoke of the danger of agglutination of the raw uterine surfaces after curetting, with obliteration of the uterine cavity if no gauze was used.

Dr. R. L. DICKINSON emphasized the importance of studying the patient's general condition, as there were a number of catarrhal conditions of the uterus that depended upon some general condition, such as rheumatism. He also referred to a condition that accompanied eczema, in which there was a most persistent irritation at the external os in patients with a sensitive skin. To clear the cervix of catarrhal products, there was nothing better than small pieces of gauze in the blades of the forceps. He believed that packing was of value if there was hyperplasia of the cervix, particularly in ante flexion cases. After treatment is needed to prevent relapse. The patient should be seen before each subsequent menstruation for at least three months, for dilatation.

Dr. J. MILTON MABBOTT said that in cases of subinvolution with a fairly straight canal and profuse discharge he used compound tincture of iodine on an applicator to the entire length of the uterine canal. If such applications were made two or three times, it sometimes would prevent the necessity of curetting later. For cleaning the cervical canal, he used a suction syringe with a long nozzle to draw out the mucopurulent discharge.

Dr. WILLIAM S. STONE spoke of the importance of not considering endometritis as a pathological and clinical entity. A great many of these cases were nutritional disturbances, the result of active or passive congestion from the presence of tumors, displacements, or inflammatory conditions in the annexa. He did not agree with Dr. Boldt in regard to the treatment of recent gonorrhœal endometritis, and thought that these cases did not demand any local interference as far as the interior of the uterus was concerned, and the patients were better without it. He advised rest in bed during the next one or two menstrual periods. Inter-course should be avoided, not only on account of danger of infection, but on account of the additional congestion that was caused thereby. In regard to chronic gonorrhœal endometritis in nulliparous women, it was often difficult to reach the mucous membrane, and in a few of these cases, without penetrating the uterus and without previous dilatation, he had incised the

cervix, as in a Dudley operation, so that applications could be satisfactorily made to the mucosa.

Dr. EWALD said that Dr. Boldt's method was heroic, but one did not have an opportunity of seeing these cases within the first twenty-four or thirty-six hours, and in the older cases there was no doubt that the gonococci were so deeply seated that no curetting would remove them. He considered it important to separate inflammations of the body and those of the cervix of the uterus. Corporeal endometritis was due to local causes, displacements of the uterus, constipation, anæmia, and sometimes constitutional diseases. Inflammation of the cervical canal was mostly due to gonorrhœal infection. Cleansing the cervix of mucus was an important step in the treatment.

Dr. POLAK said that one could sterilize the interior of the uterus after the gonococcus had gained entrance there. It was generally admitted that the corporeal endometrium was either acutely inflamed or was free from cocci unless there were annexal lesions with gonococci in the tubes. In regard to packing, he did not see the advantage of any particular gauze. If the uterus was packed firmly or loosely, it did not require a drain after a few hours.

Dr. WALDO said that he had tried different operations for bad cases of cervical endometritis, and had seen the thick mucous discharge continue for months afterward. With regard to packing the uterus, he was positively opposed to it except to control hæmorrhage. In the treatment of acute gonorrhœal endometritis he was opposed to curetting, as the germs were too deeply situated to be reached by it. As to the obliteration of the uterine cavity, packing of the uterus would not prevent it if the curette had been used too vigorously. The general treatment was of importance, especially in the acute cases.

Uterine Hæmorrhage.—Dr. C. A. VON RAMDOHR reported four cases of fibroma uteri and one of subinvolution, all cases in which the patients had declined an operation, in which he had used cotarnine phthallate to control excessive uterine bleeding. The bleeding in all cases except one was controlled by cotarnine phthallate, though the previous administration of ergot and hydrastis had failed. In no case had there been any interference with digestion or any other function of the body. He was so well satisfied with the results of its use that he should use the drug more frequently in the future in selected cases where an operation was declined.

Book Notices.

Auscultation and Percussion. Together with the Other Methods of Physical Examination of the Chest. By SAMUEL GEE, M. D., Fellow of the Royal College of Physicians, Honorary Physician to H. R. H. the Prince of Wales, and Consulting Physician to Saint Bartholomew's Hospital. Fifth Edition. London: Smith, Elder, & Co., 1906.

This new edition of Dr. Gee's interesting little book contains all the essentials of the physical exploration of the chest. There are numerous allusions to the ancient and modern medical classics, with which the scholarly author shows a wide familiarity. The foot notes and historical references, which illuminate the text will please and stimulate to further research the medical student who has also some interest in his profession as to its literature and history.

The Chemical Investigation of Gastric and Intestinal Diseases by the Aid of Test Meals. By VAUGHAN HARLEY, M. D., Edin., M. R. C. P., F. C. S., Professor

of Pathological Chemistry, University College, London, and FRANCIS W. GOODEBODY, M. D., Dublin, M. R. C. P., Assistant Professor of Pathological Chemistry, University College, London. London: Edward Arnold, 1906. (Agents for the United States: Longmans, Green, & Co., New York.)

In recent years the application of exact chemical methods has made possible the accurate diagnosis of many essentially different functional disorders of the stomach which were formerly grouped together and loosely described as dyspepsia. The signs and symptoms of organic disease are less equivocal, and in such conditions as gastric carcinoma and ulcer the chemical examination of the stomach contents is perhaps often less important, although here also laboratory methods will usually materially aid in the early diagnosis and proper treatment. In this clearly written and excellent work are fully described the most recent and approved practical methods for the qualitative and quantitative determination of free and combined hydrochloric, lactic, butyric, and acetic acids, pepsin, rennin, lipase, and the gases of fermentation. The medical training of the authors has made their book as satisfying in its medical aspects as in its chemical features. The writers believe that the examination of the fæces may be so developed as perhaps to equal in importance the analysis of the gastric contents, but for æsthetic reasons this field has hitherto been largely neglected. A complete résumé of the present state of our knowledge of this subject is given in the chapters on intestinal diseases. The work is, we believe, indispensable to the specialists in digestive diseases, and will be read with much interest by the progressive general practitioner.

Die Behandlung der tuberkulösen Wirbelsäulenerkrankung. Von Dr. F. CALOT, Chirurg am Hospital Rothschild, am Hospital Cazin-Perrochaud, etc. Uebersetzt von Dr. P. EWALD, I. Assistent an der chirurgisch-orthopädischen Klinik von Professor Dr. Vulpius in Heidelberg. Mit 120 Abbildungen. Mit einem Vorwort von Professor Dr. OSCAR VULPIUS. Stuttgart: Ferdinand Enke, 1907. Pp. 90.

In 1897 there appeared in Paris *Notes sur la correction opérative des scolioses graves* and *Notes sur quelques modifications apportées à la technique en redressement des maux de Pott*. These books were by François Calot, whose ideas revolutionized the therapeutical views of the orthopædists. Up to that time the spondylitic gibbus was considered as a necessary sequela, a sign of cure; and now Calot alleged that this gibbus formation should be prevented and that the gibbus itself could be cured with a proper plaster of Paris bandage. The enthusiasm was great, but a deep disappointment followed, and with it a condemnation of the new theory. Since then the treatment has been improved and modified, and Calot has again published a book containing his latest ideas, ideas which he has always defended.

The book before us is a German translation, and the fact shows us that Calot's idea is not *a priori* to be condemned; otherwise a translation would not have been necessary; on the contrary, it demonstrates a final victory for the sponsor of the idea.

Calot undertakes to teach the general practitioner how to overcome the deformity. He demonstrates that it is possible without an apparatus and instrument, both of which could only be used by the specialist. The general idea can be expressed as follows: The physician must know how to make a plaster of Paris corset with a fenestra. The corset is to be applied as soon as the diagnosis has been made. The corset must not be discarded too soon (it is to be worn for years). This plaster of Paris corset has to reach from the occiput to the trochanter major, with an additional collar for the

The German translation seems to have been well done. The illustrations are clear and instructive. We hope for an English translation.

Public Health and Marine Hospital Service
Health Reports:Sagittary. 1000

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1899-1900

Hawaii Honolulu	May 15 21	5	5
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Public Health and Marine Hospital Service:

Official List of Changes of Stations and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending Dec. 1, 1907

ALLEN, G. C., Pharmacist. Granted leave of absence for twenty-nine days, from May 27, 1907.

BAHRENBURG, L. P. H., Passed Assistant Surgeon. Relieved from duty at the Delaware Breakwater Quarantine Station and directed to proceed to Ellis Island, N. Y., reporting to the Chief Medical Officer for duty.

BANKS, C. E., Surgeon. Granted extension leave of absence for one month, from May 20, 1907.

BOYD, FRANK, Acting Assistant Surgeon. Granted leave of absence for nine days, from June 2, 1907.

CORPUT, G. M., Passed Assistant Surgeon. Granted leave of absence for seven days, from May 25, 1907.

CREEL, R. H., Assistant Surgeon. Directed to report to Passed Assistant Surgeon V. G. Heiser, Chairman of a Board of Examiners, at Manila, P. I., July 15, 1907, for examination.

EBERSOLE, R. E., Assistant Surgeon. Directed to report to Passed Assistant Surgeon V. G. Heiser, Chairman of a Board of Examiners, at Manila, P. I., July 15th, 1907, for examination.

GENDINGS, H. D., Assistant Surgeon General. Directed to proceed to Ellis Island, N. Y., for special temporary duty, upon completion of which to rejoin his station in Washington, D. C.

HUNTER, W. R., Acting Assistant Surgeon. Granted leave of absence for one day.

KEATLEY, H. W., Acting Assistant Surgeon. Granted leave of absence for one day, May 16, 1907, under paragraph 210 of the Service Regulations.

KENNARD, K. S., Acting Assistant Surgeon. Granted leave of absence, May 7, 1907, on account of sickness.

KERR, J. W., Assistant Surgeon General. Designated to represent the Service at the meeting of the American Medical Association, and to attend the meetings of the Section in Hygiene and Sanitary Science, at Atlantic City, N. J., June 4 to 8, 1907.

LLOYD, B. J., Passed Assistant Surgeon. Granted leave of absence for four days, from April 15, 1907, on account of sickness.

RAMUS, C., Passed Assistant Surgeon. Granted leave of absence for five days, from May 6, 1907, under paragraph 191 of the Service Regulations.

ROSENAU, M. J., Passed Assistant Surgeon. Directed to proceed to New York, N. Y., for special temporary duty, upon completion of which to rejoin his station at Washington, D. C. Reassigned to duty as Director of the Hygienic Laboratory, Washington, D. C., effective April 27, 1907.

SAFFORD, M. V., Acting Assistant Surgeon. Directed to proceed to Westboro, Mass., for special temporary duty, upon completion of which to rejoin station at Boston.

SALMON, T. W., Assistant Surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to Boston, Mass., reporting to the Medical Officer in command for duty and assignment to quarters.

TRASK, J. W., Assistant Surgeon. Granted leave of absence for one month, from May 30, 1907.

- TROTTER, F. E., Passed Assistant Surgeon. Granted extension of leave of absence for ten days, from May 17, 1907, on account of sickness.
- WHITE, M. J., Passed Assistant Surgeon. Relieved from duty in Hong Kong, China, and directed to proceed to Seattle, Wash., assuming charge of the Service at that port.
- WILSON, J. G., Acting Assistant Surgeon. Granted leave of absence for one day, May 9, 1907, on account of sickness.
- WOODWARD, R. M., Surgeon. Detailed to represent the Service at the meeting of the American Medical Association and the meeting of the House of Delegates of that association, at Atlantic City, N. J., June 3 to 8,

Appointment.

Dr. Charles W. Allen appointed an acting assistant surgeon, May 13, 1907.

Resignation.

Pharmacist G. C. Allen resigned, to take effect June 25, 1907.

Boards Convened.

A board of medical officers convened to meet at Stapleton, N. Y., for the medical examination of an officer of the Revenue Cutter Service. Detail for the board: Surgeon P. H. Bailhache, Chairman; Passed Assistant Surgeon K. W. Wickes, Recorder.

A board of medical officers convened to meet in San Francisco, Cal., for the medical examination of an officer of the Revenue Cutter Service. Detailed for the board: Surgeon H. W. Austin, Chairman; Passed Assistant Surgeon J. D. Long, Recorder.

A board of medical officers convened to meet at Manila, P. I., July 15, 1907, for the purpose of examining Assistant Surgeons Creel and Ebersole, to determine their fitness for promotion to the grade of Passed Assistant Surgeon. Detailed for the board: Passed Assistant Surgeon V. G. Heiser, Chairman; Passed Assistant Surgeon F. B. McClintock, and Passed Assistant Surgeon C. W. Vogel, Recorders.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending May 25, 1907:

- DAVIS, WILLIAM B., First Lieutenant and Assistant Surgeon. Ordered to report in person on July 22, 1907, to Major Thomas U. Raymond, surgeon, president of the examining board, Manila, P. I., for examination to determine his fitness for advancement.
- FIFE, JAMES D., First Lieutenant and Assistant Surgeon. Granted thirty days' leave of absence.
- HANSELL, H. S., First Lieutenant and Assistant Surgeon. Relieved from further duty in Cuba, and ordered to Fort Snelling, Minn., for duty.
- PURNIANCE, WILLIAM E., Major and Surgeon. Will proceed to Fort Douglas, Utah, for station, instead of Fort Logan, Colo.
- RICHARD, CHARLES, Major and Surgeon. Detailed to represent the Medical Department of the United States Army at the Fifty-eighth annual meeting of the American Medical Association, to be held in Atlantic City, N. J., June 4 to 7, 1907.
- RUSSELL, FREDERICK F., Captain and Assistant Surgeon. Detailed as a member of the board of medical officers appointed by paragraph 22, S. O. 38, War Department, to determine the results of preliminary examinations of applicants and for final examination of candidates for admission to the Medical Corps of the Army.
- STRAUB, PAUL F., Major and Surgeon. Detailed to represent the Medical Department of the Army at the fifty-eighth annual meeting of the American Medical Association, to be held in Atlantic City, N. J., June 4 to 7,
- TAYLOR, BLAIR D., Lieutenant Colonel and Deputy Surgeon General. Left Cuba en route to the United States on thirty days' leave of absence.
- WEBB, WALTER D., Captain and Assistant Surgeon. Relieved from duty at Fort Snelling, Minn., and ordered to the Army General Hospital, Washington Barracks, D. C., for duty.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending May 25, 1907:

- CHAPMAN, R. B., Assistant Surgeon. Resignation accepted, to take effect July 1, 1907.
- SHORT, W. H., Assistant Surgeon. Ordered to the Naval Hospital, New York, N. Y.
- TAYLOR, J. S., Passed Assistant Surgeon. Ordered to the Naval Hospital, New York, N. Y.

Births, Marriages, and Deaths.

Born.

SMART.—In Fort Caswell, North Carolina, on Saturday, May 18th, to Dr. William M. Smart, United States Army, and Mrs. Smart, a son.

Married.

DARRACH—BURDEN.—In Fall River, Massachusetts, on Thursday, May 23rd, Dr. William Darrach, of New York, and Miss Florence Burden.

FARRINGTON—STECKEL.—In Philadelphia, on Tuesday, April 30th, Mr. Charles Edward Farrington, of Boston, and Dr. Charlotte Steckel.

KERFOOT—CULLEN.—In Washington, D. C., on Wednesday, May 15th, Dr. William T. Kerfoot, Jr., and Miss Anna Rosalie Cullen.

SMITH—CRAWFORD.—In Memphis, Tennessee, on Wednesday, May 15th, Dr. Fred. Smith and Miss Anna A. Crawford.

Died.

BOTTS.—In Shelbyville, Kentucky, on Wednesday, May 15th, Dr. W. H. Botts, aged seventy-seven years.

BREWSTER.—In Brooklyn, N. Y., on Saturday, May 18th, Dr. Richard Caldwell Brewster, aged sixty-three years.

CARPENTER.—In Oneida, N. Y., on Sunday, May 19th, Dr. Henry H. W. Carpenter, aged seventy-five years.

CASEY.—In Mohawk, Herkimer County, N. Y., on Sunday, May 19th, Dr. James E. Casey, aged eighty years.

CRAFT.—In Denver, Colorado, on Sunday, May 12th, Dr. Shuler Craft, aged twenty-eight years.

DECKER.—In Elmira, N. Y., on Tuesday, May 7th, Dr. Casper S. Decker, aged eighty-seven years.

DUGGINS.—In Pueblo, Colorado, on Friday, May 17th, Dr. George D. Duggins, aged sixty-seven years.

FOSTER.—In New York, on Sunday, May 19th, Dr. Charles A. Foster, aged fifty-eight years.

GARDNER.—In Seaconnet, Rhode Island, on Thursday, May 23rd, Dr. Clarence Tripp Gardner, aged sixty-three years.

HICKS.—In Baltimore, Maryland, on Wednesday, May 15th, Dr. Frederick W. Hicks, aged thirty years.

JAMES.—In St. Louis, Missouri, on Monday, May 20th, Dr. Frank Lowber James, aged sixty-five years.

LEACHMAN.—In Louisville, Kentucky, on Saturday, May 18th, Dr. W. T. Leachman, aged seventy-four years.

LOMBARD.—In New York, on Wednesday, May 22nd, Dr. Guy Davenport Lombard, aged thirty-five years.

MANSFIELD.—In Wakefield, Massachusetts, on Wednesday, May 22nd, Dr. Joseph Mansfield, aged ninety years.

MC SWEENEY.—In New York, on Monday, May 20th, Dr. Daniel E. McSweeney, aged sixty-five years.

PACKARD.—In Atlantic City, N. J., on Tuesday, May 21st, Dr. John Hooker Packard, of Philadelphia, aged seventy-five years.

PLANCK.—In Schenectady, N. Y., on Sunday, May 12th, Dr. Milton Goodgrey Planck.

PRESTON.—In Dansville, N. Y., on Friday, May 17th, Dr. George Rufus Preston, aged thirty-one years.

SIMPSON.—In Minneapolis, Minnesota, on Friday, May 17th, Dr. Charles Simpson, aged sixty-four years.

TURRILL.—In New York, on Saturday, May 25th, Dr. Henry S. Turrill, Brigadier General in the United States Army (retired), aged sixty-four years.

ZAPP.—In Denver, Colorado, on Monday, May 13th, Dr. Philip G. Zapp, aged forty-four years.

New York Medical Journal

INCORPORATING THE

Philadelphia Medical Journal and The Medical News

A Weekly Review of Medicine, Established 1843.

VOL. LXXXV, No. 25

NEW YORK, JUNE 8, 1907.

Week 25 of 1907

Original Communications.

DEFORMITIES OF THE PENIS DUE TO SYPHILIS, GONORRHOEA, AND OTHER CAUSES.*

By ROBERT W. TAYLOR, M. D.,
New York.

Consulting Genitourinary Surgeon to the Bellevue and Charity
Chest Hospitals; Lecturer, Clinical Professor of Vene-
real and Genitourinary Diseases at the College
of Physicians and Surgeons (Colum-
bia University).

Permanent deformities of the penis constitute an interesting and important class of cases concerning

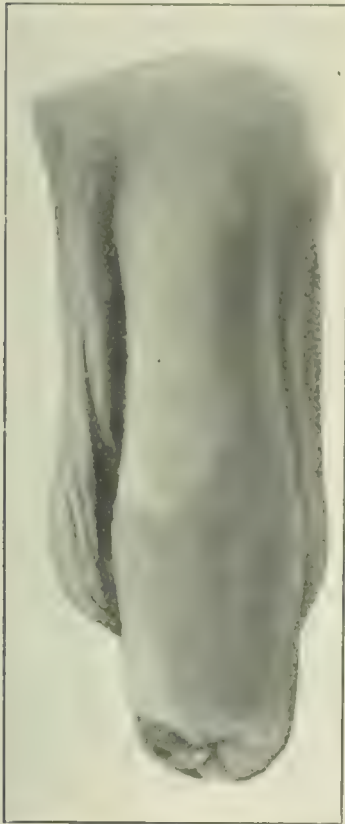


FIG. 1. CASE 1. Indurating edema and hard chancre of penis.

which there have been want of knowledge and much doubt and uncertainty. In some of these cases syphilis in its various phases plays a leading part; in others there seems to be an occult symbiosis of lues and gonorrhoea. The latter infection is sometimes concerned in the development of elephantiasis of the penis, but it is probable that the gonococcus is only the starting point of the hyperplastic process, which is actively contributed to by a more persistent and potential microorganism.

A number of cases of penile enlargement have been observed in which traumatic lesions of the

diagnosed as sporadic elephantiasis, which is simply due to want of knowledge. I propose, in a terse manner, to consider all the foregoing morbid conditions, and to discuss and portray the up to date appearances of the various pathological changes developed in this essay—a subject which has secured little if any scientific attention.

In the primary and secondary stages of syphilis indurating oedema is sometimes seen to cause distortion of the organ and derangement of its function; in the tertiary stage ulceration and infiltrative lesions may also produce similar results.

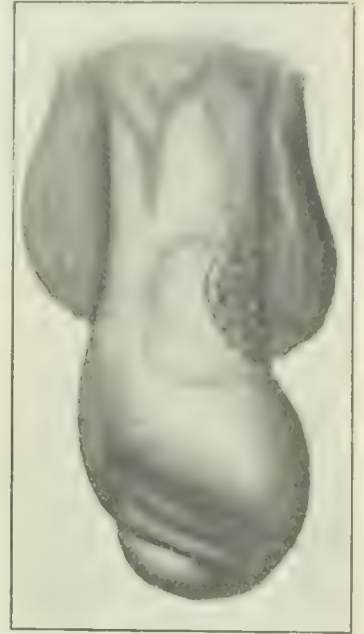


FIG. 2. CASE 11. Indurating edema and hard chancre of penis.

1. Indurating Oedema: Clinical History.

Indurating oedema is observed in no other disease than syphilis. There are many facts concerning its varied conditions which are very interesting and worthy of study and exposition, by reason of their obscurity and of the fact that in many observed instances there was a want of knowledge on the part of medical men concerning them. Indurating oedema (oedema indurativum, Sigmund; *oedema scleroticum*, Pick), is mostly seen as a complication of hard chancre. When the initial lesion is fully formed and its induration well marked and circumscribed, a wall or circumvallation may develop around it. This hyperplastic process occurs slowly or moderately quickly, without any marked symptoms of pain, uneasiness, or discomfort. In one or two weeks the tumefaction around the chancre becomes well marked, and examination shows swelling and hardness, without pain, in the parts. In this aphlegmasiac manner the induration extends and may involve the whole integument of the penis. If the chancre is seated at the end of the prepuce,

* Read before the American Association of Genitourinary Surgeons, at Washington, May 7, 1907.

...ing gradually extends to the base of the organ; if on the balanopreputial sulcus it involves the prepuce, and then creeps up to the root; if in the middle of the integument, it spreads up and down. In most cases the hard œdema is limited to

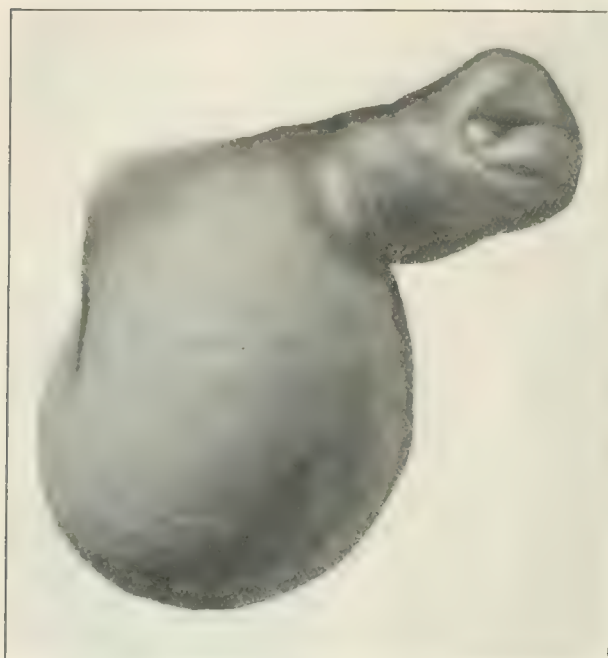


FIG. 3. CASE III. Indurating œdema of penis and scrotum.

the penis, but it may extend up the abdominal walls and towards the groin, or it may more or less slowly creep down and involve the scrotum. In one of my cases of chancre of the scrotum the œdema quite promptly involved the whole organ, but was then checked by energetic treatment.

When the lesion is fully developed it presents an appearance which is very characteristic; it is *sui generis*. It has not the appearance of inflammatory engorgement, nor of ordinary acute or chronic œdema. The invaded tissues are smooth, tense, hard and dense, like one's ear or unyielding like bone. There is no pitting on pressure, no pain, nor sensitiveness, simply an aphlegmasiac condition. The color of the parts is of a dull brick red or of a purplish hue. When fully developed it may remain for months in its indolent course, or it may at times undergo peripheral extension.

will clearly portray the objective appearances of this affection.

CASE I.—In Fig. 1 is shown a case of indurating œdema of the whole penis in a young man, twenty-two years old. The lesion began in a chancreous erosion seated on the end of the prepuce. It attained its development in about ten days and became typical in character. It was followed by general syphilis.

CASE II.—A young man, twenty-eight years old (Fig. 2), had a large chancre of raw beef appearance (chancreous erosion) on the middle of the cutaneous sheath of the penis, which became the focus of indurating œdema travelling downwards and upwards and involving the whole organ. The result was a penis which looked like the clapper of a bell. It is not at all unusual to see strange shapes produced by indurating œdema of the penis, like Indian clubs or gong handles.

CASE III.—The third case was one of especial interest (see Fig. 3). It was that of a man, forty-nine years old, who had a hard nodule on the penis. In eight weeks the penis and scrotum began to swell, and at the end of two weeks they had become so enormously swollen that he entered a hospital, where an attempt was made to relieve the phimosis by a dorsal incision of the prepuce. Subsequently the swelling was reduced slightly by the application of leeches to the penis. The true condition of the patient had not been recognized when he first came under my care at the Charity Hospital. At this time the swelling had existed for several weeks, and the patient was very anæmic. He was put to bed and given mercurials and tonics. The swollen scrotum was about as large as a cocoanut, and the penis correspondingly large. There was no succulence of the tissues; the prepuce was of a purplish color, and as hard as cartilage, and the phimotic condition was still present. Although the penis was involved in the swelling, the excessively hard œdema was in the prepuce. Circumcision was performed and the hardness became markedly less. There had been no evidence of inflammatory engorgement or of œdematous infiltration, and the patient had improved rapidly since the removal of the mass. The scrotal walls were fully an inch in thickness.

In this case it is probable that as a complication of indurating œdema, infection with streptococcus erysipclatis set in and caused the acute exacerbation. When this subsided the case pursued its usual course. Streptococcus infection, it may be mentioned, is not at all uncommon during the course of early or late syphilitic lesions in both males and females.

This case also illustrated a condition not uncommon in indurating œdema, namely, a greater density of hardness in one part, in this case in the pre-



FIG. 4. CASE IV. Indurating œdema and chancre redux.

puce. In some cases, particularly in women, there may seem to be a central kernel of greater density surrounded by an atmosphere of elastic firmness.

While, as a rule, indurating œdema is the accompaniment of hard chancres, it may be observed during the first few years, particularly when the poison is active. In men, as in women, indurating œdema has been found to complicate mucous patches and

condylomata lata, and to develop from traumatism and around such non-specific lesions as chancres, chancrets, herpetic ulcers, and various lesions of continuity. As a rule, however, the severe and extensive cases occur as complicating hard chancres. In any case the course is persistent and chronic.



FIG. 5.—Elephantiasis of penis and scrotum. From the tropics, syphilitic type. Not infrequent among the natives of the South.

The duration of indurating œdema depends almost wholly on the activity and persistence of treatment and on its early inception. Left untreated it may last for months and years, since spontaneous involution is very rare except in small infiltrations. Treatment, however, may produce prompt and satisfactory results.

In many cases this lesion, even if extensive, disappears and seems to leave no untoward result. In some instances, however, greater or less disfigurement or deformity of the parts is produced. An interesting and unusual case of indurated œdema came under my notice some time ago.

CASE IV.—The patient was a man, fifty years old, syphilitic ten years, a victim of chronic alcoholism, who had received very little and erratic treatment. He presented on the outer aspect of the prepuce an indurated nodule, which soon became eroded and looked like a classical chancreous erosion. The original initial lesion had appeared on this site. This recurrent lesion ran an indolent course, was refractory to treatment, and soon became the focus of indurating œdema, which involved the integument of the whole organ. Coincidentally gummatous nodules appeared on the right arm and leg (see Fig. 4). The penis became much swollen and unwieldy; the prepuce could not be retracted, and the parts presented a brick red color. The organ looked like a huge sausage. The classical history of indurating œdema prevailed in this case. A tardy cure was produced.

The interest in this case centres in the delayed appearance of the œdema and its exceptional development following a chancreous process. The syphilitic character and nature of the lesion is a most unusual and similar extensive case in the male.

2. Sequelæ of Indurating Œdema.

The sequelæ of indurating œdema of the penis are interesting. In some cases a phimotic condition is induced, and in others a tendency to balanoposthitis and paraphimosis. Herpes and dermatitis of the distal end of the organ are not uncommon. In some cases the œdema is followed by advanced atrophy of the integument, in which the tissues are transformed into a thin parchment like tube, very finely wrinkled, resembling in appearance dried bladders and tobacco pouches. The atrophic tissues may be rather tightly stretched over the cavernous bodies, or they may be loose, flaccid, and baggy. These conditions are permanent. In nearly all stages indurating œdema is a bar to coitus.

3. Dermatitis and Tertiary Lesions.

Besides indurating œdema, tertiary ulcers and gummatous infiltrations into the skin of the penis

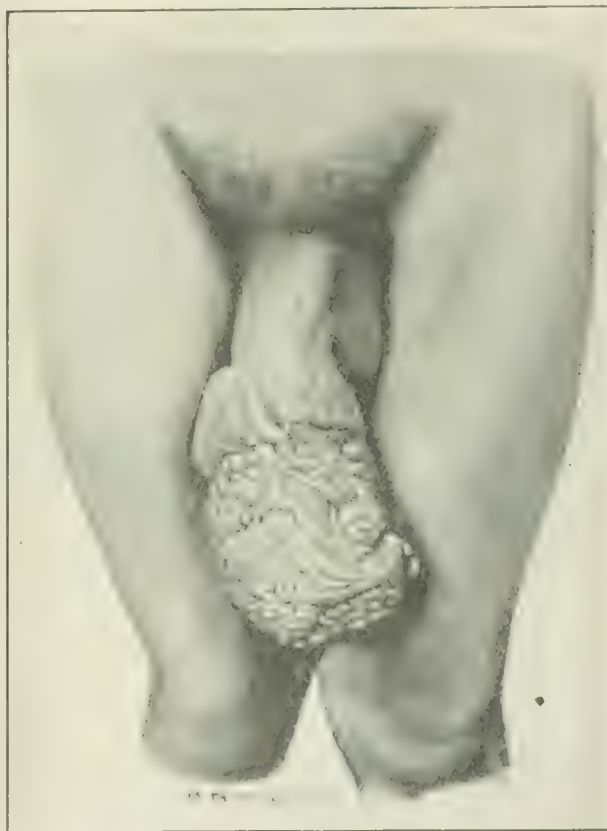


FIG. 6, CASE V.—Elephantiasis nostras of penis.

may disfigure that organ. In such cases the infection lasts for several or many years, appearing in crops and recrudescences, and at first hypertrophy of the parts is produced. Later on atrophy and shrinking may take place. I have seen cases in which gummatous infiltration began in the prepuce or glans, or both, and has travelled backward, involving both urethra and penile integument. In some cases nodes in the corpora cavernosa and in-

filtrations into the corpus spongiosum have coexisted. In these cases such is the enlargement of the penis that pseudoelephantiasis is developed.

I have studied a number of cases in old syphilitics with long prepuce, rather difficult of retraction, in which after long years of subacute balanitis and sometimes chronic gonorrhoea, the distal extremity of the penis has become slowly and gradually swollen. For a long time this hypertrophy was centred in the balanic region, then it gradually crept upward and involved all the integument of the penis. In this way the organ was permanently enlarged and a condition of pseudoelephantiasis was produced. In its advancing course penes thus attacked present an Indian club like appearance. Such cases may or may not be complicated by extra genital specific lesions. These cases are very refractory to treatment. An interesting case of this form of penile hypertrophy has been reported by Thiebierge in

filtration, or specific ulcerations. In the course of several or many years the penis is converted into an unrecognizable monstrosity. The integument is greatly thickened and brawny, of a deep brownish red color, perhaps grossly papillomatous, and large and small scars and fissures are seated on its surface. The organ sometimes presents at its base a

pedicle of huge size, which expands into a bulbous shaped mass like a big onion or beet, resembling the clapper of a bell. In some cases again we see an enormously enlarged penis which is capped by a head of the size of a large orange.

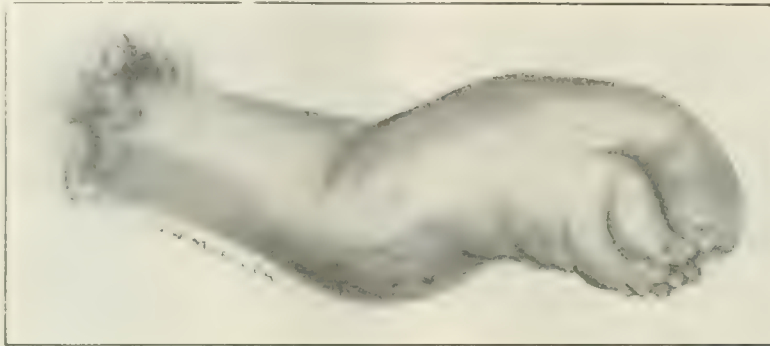


FIG. 7. CAS. VII. Elephantosis. Illustration of penis of traumatic origin.

4. Hybrid Elephantiasic Cases.

The foregoing cases are frankly syphilitic, but there is a group of cases in which there is a more or less vague history of syphilis and of undoubted gonorrhoea, and which are much aggravated by microbic complications. These hybrid borderline



FIG. 8. Histological section of chancre of penis, showing distention and infiltration into the derma, which extends as a zone from x x x to centre of chancre. Infiltration of walls of vessels well shown at b.

1905. It is a good rule in cases of chronic hypertrophy of the penis to suspect a syphilitic origin. There is a class of cases which is rare in occurrence and seen usually in old syphilitics, drunkards, and tramps, and in Southern luetic negroes. The disease begins in indurating oedema, gummatous in-

cases are not uncommon, and to them the term elephantiasis of the penis is usually applied.

This condition is portrayed in the figure (No. 5) in which the hypertrophied scrotum and penis are well shown. Cases like this are not uncommon in tropical countries, and are seen not very infrequent-

ly in America in negroes, particularly in the South. They are mixed cases, in which syphilis, gonorrhœa, and chronic slow streptococci infection are the indiscriminate causal agents. In the mix up the histological appearance of syphilitic processes is obscured or effaced. In tropical climates filariæ may act as concomitant and causal agencies. When seen indigenous to American soil, they are classed as cases of elephantiasis nostras.

Having considered these syphilitic and quasi syphilitic cases, we are in a position to discuss certain other cases in which gonorrhœa, trauma, and lesions of continuity in and about the male genitals seemingly play the causative part.

Our histological studies in many cases of filariæ, notably in Brazil, Mexico, Maracaibo, and Richandiére, have clearly proved that these conclusions are incorrect. I can find no instance in any observer in America or Europe that he has ever found the filariæ in a case of elephantiasis of the penis. Hallopeau and Danlos seemed to think that if they could not discover the filariæ they might at least find their embryos, but their rigid search was in vain. In America numbers of cases of elephantiasis of the penis have been seen, and the spectre of the filariæ always pervades the mind of their observers. The filariæ seem to be pudendal will-o'-the-wisps. From a quite complete study of these

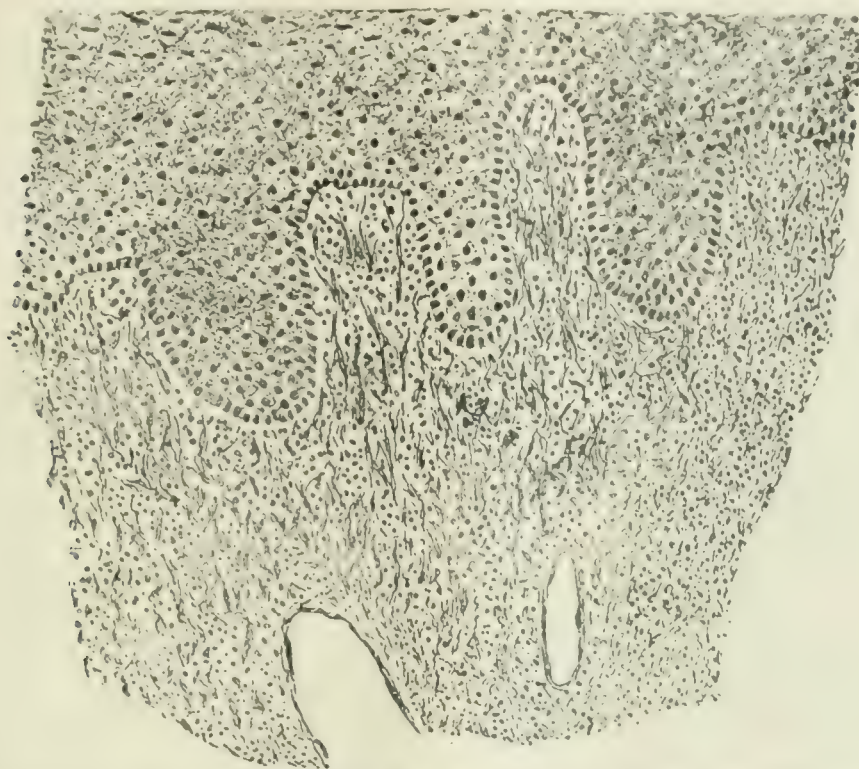


FIG. 9. Microscopical section of chancre of penis. Portion of the surface of the ulcerated area of the upper layers of the derma are infiltrated with blood and small round cells.

For a full understanding of these cases it is absolutely necessary to have a clear conception of the ætiology of elephantiasis in the light of recent investigations.

5. *Ætiology of Genital Elephantiasis.*

The ætiology of elephantiasis of the male and female genitals has long been in a condition of tangled uncertainty. When the discovery of the filariæ was made it was generally thought that the question had been settled, but in the process of time it became evident that some other cause than these nematode parasites was at the root of the trouble. While in tropical countries the filarial origin of all cases of elephantiasis has become the subject of doubt, the evidence of its being the cause of lesions of the male and female external genitals has not been forthcoming except in some rare cases of lymphscrotum. In America we have become accustomed in studying cases of these male and female lesions to incontinently attribute them to filarial

subjects I have reached certain conclusions, which I venture to offer as postulates.

1. That the filariæ are rarely, if ever, the sole pathogenetic cause of elephantiasis of the male genitals in extratropical countries, since their scientific demonstration has never been clearly formulated.

2. That in tropical climates there is inherent evidence in cases of elephantiasis of the penis and scrotum, that a hybrid or mixed condition is the underlying cause, the predisposing factors being uncleanliness and want of hygiene, and the exciting causes old uncured syphilis and gonorrhœa.

3. That it is probable that gonorrhœal infection in the urethra may have acted as an early factor of the inflammation, but that the gravamen of the attack was by the streptococcus (possibly erysipela-tis), which in all countries seems to be the pathogenetic cause.

4. That congenital anomalies of the lymphatics may perhaps be concerned in the processes inviting ectasis.

5. That owing to their attenuation or by reason of involution forms of the microbes, the morbid

process runs the long continued, usually aphlegmatic course commonly observed. In many instances, however, exacerbations are noted, pointing to a recrudescence of the virility of the microbes or to the accession of new colonies.

6. That in America and undoubtedly in Europe elephantiasis of the male genitals is never of filarial origin unless the disease started in tropical regions, and then it is a moot question whether it was the sole *materies morbi*.

These studies rid us of much error and uncertainty. Incidentally they may save observers tiresome and fruitless searches for those *ignes fatui*—the filariæ.

When we approach a case of elephantiasis of the penis or scrotum, or both, we can bear in mind certain accredited facts, namely, that the case may be one of old syphilis and of antecedent gonorrhœa, and that while in an occult way chronic syphilis may be a causative factor, in all cases the infection of the streptococcus plays a leading part. Cases following gonorrhœa are not dependent on the gonococcus as the essential causal agent, since these energetic microbes merely play the part of sappers and miners, and, disappearing, produce a focus and pasture ground for the more tenacious streptococcus.

6.—Elephantiasis (*Nostras*) of Penis.

Two personal cases are illuminating.

CASE V.—The first patient was a young man, twenty-two years old. He had suffered from gonorrhœa, and had used very strong injections, which had given rise to inflammation of the whole penis, the organ being described as much enlarged, red, and painful. This primary hyperæmia slowly subsided, and then the penis began to swell in its preputial portion. This swelling, sometimes accompanied by transient hyperæmia, went on steadily, and in two years produced the deformity seen in Fig. 6. The penis was so elongated that it reached nearly to the knees. Its distal portion was the largest, where its circumference was about ten inches. Near the scrotum the organ was rather more than twice its normal size. The diseased tissue was firm and brawny. Its surface was channelled by numerous furrows running in a longitudinal direction. These furrows were crossed at right angles and more or less obliquely by other furrows, and thus the skin was divided up into lobulations and nodulations which were seated side by side like paving stones. This tumor was removed, and a very serviceable penis was produced. There was no obstruction to urination. No filariæ were found in the tissues in this case.

CASE VI.—Another case seen by me was one of elephantiasis beginning in the prepuce, which was much enlarged, so that the penis looked very much like an Indian club. The patient was a young Hebrew, who stated that his deformity dated from the day when a woman gave his penis a vicious twisting squeeze. The organ swelled, particularly at the line of union formed by circumcision. From this the swelling increased, accompanied at times by transient hyperæmia. I have recently seen this case again, after a lapse of many years, and I observed that the deformity had considerably increased in size. It seems that the man had imperfect coitus with a woman and contracted a severe gonorrhœa. On its subsidence the old elephantiasis assumed a renewed vigor of life and went on to giant proportions.

I have seen many instances in which phimosis, paraphimosis and balanoposthitis, usually complications of gonorrhœa, have been the starting points

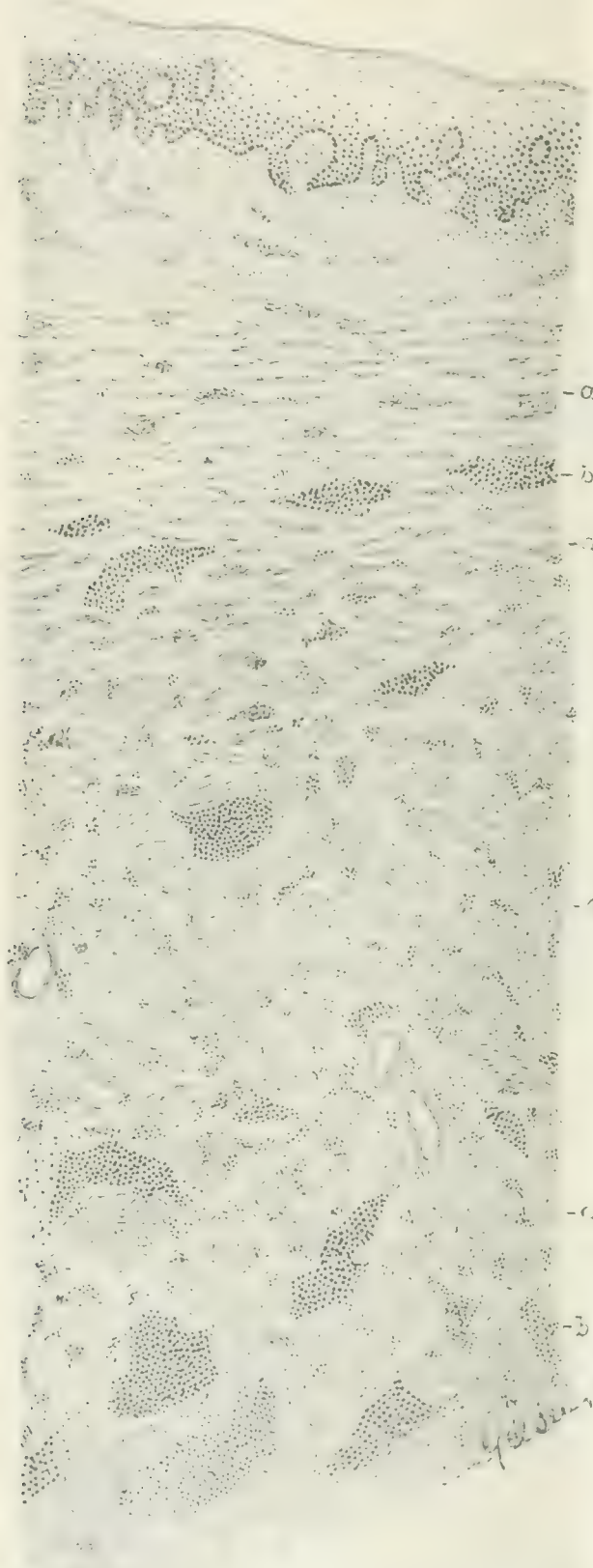


Fig. 6. Elephantiasis of penis, thickened eight times normal size. The surface is covered with small round cells, and the tissue is very firm and brawny.

of moderate enlargement of the penis, to which, however, the term elephantiasis could not strictly be applied. In literature such a causation has several times been noted or alleged in advanced cases of incarcerated subpreputial warts accompanied with much inflammation. Preputial chancreoids may also be factors of gravity. Chancreoidal phimosis

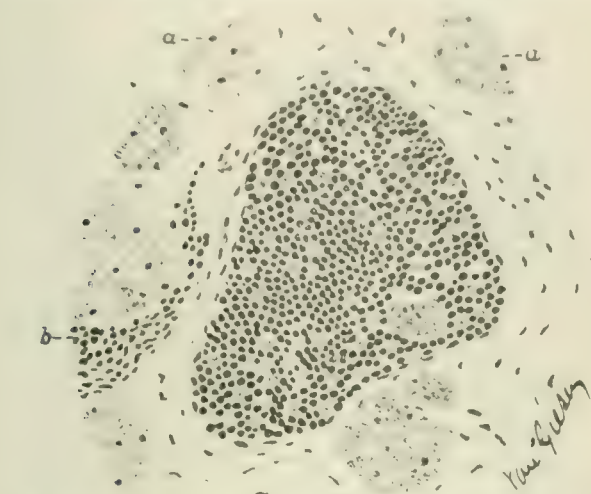


FIG. 11. More highly magnified than in picture of round cell distention of one of the lymph spaces of preceding figure. a a, newly formed smooth muscle bundles cut transversely; b, patch of proliferating connective tissue cells.

may eventuate in elephantiasic enlargement of the penis.

7. Elephantiasis (*Nostras*) from Traumatism.

Cases of traumatic elephantiasis of the penis are certainly not common. The following personal recital is interesting:

CASE VII.—The patient, a man twenty-eight years old, before his injury had a penis of the ordinary size. During the Civil War he was shot at the base of the penis and in the left inguinal region. After the wounds healed it was noticed that the man's penis began to grow, and this hypertrophy continued for years. When he came under my observation his penis was, when flaccid, fully twelve inches long and proportionally longer when erect. This case was not an example of traumatic elephantiasis alone, since besides the increase in the connective and lymphoid tissues there was commensurate enlargement of the glans penis, the corpora cavernosa, and corpus spongiosum. When erect, according to the man's story, the penis was of monstrous size, and he was forever barred from coitus. (See Fig. 7.)

In this case undoubtedly the punctured wound became infected with streptococci germs, which produced the inflammation and the distortion.

Instances in which wounds of the integument of the penis and of the urethra alone or in combination become inflamed and the seat of hypertrophy and distortion are sometimes observed. The following case, seen but not at the time treated by me, illustrates a peculiarly distressing result.

CASE VIII.—The patient was a man, thirty-two years old, who some years before had gonorrhœa which left him with several patches and rings of semi-fibrous hyperplasia of the urethra, reducing its calibre to 15 French. The normal urethra presented a diameter of 32 French. This gentleman was operated upon by an

English physician in order to dilate the urethra with bougies. The operation was performed by the bougie with several days' interval, at which time numerous abscesses had formed, and the man was forced and obliged to the end of the last operation the surgeon informed the patient that he was perfectly cured, and that he had dilated his urethra and had cut him up to 42 French. That night the gentleman had a terrible chill and a burning hemorrhoidal discharge. He had a very unhappy time for nearly three weeks. At that time urination was very painful, with dribbling and bloody oozing, and some increased temperature. Very soon the penis became red and swollen, and the man's sufferings were great. This swelling never went down, but it increased until his penis, in its whole extent, was four times its normal size. It thus remained in an elephantiasic condition, and was the cause of much mental torture to its bearer. He was forever barred from coitus, and he sorrowfully declared that his life had been ruined by these intemperate operations. Delicacy concerning his virile organ prevented him from prosecuting the surgeon. In this case we know now that streptococcus infection started in the surgical traumatism in that man's urethra.

CASE IX.—Weir reports an interesting case in a man fifty-nine years old. The patient had had stricture of the urethra in its penile portion, complicated by abscess formation. This left a fistula from which alone the urine thereafter flowed. Coincidentally with the formation of the abscess the penis began to enlarge, generally painlessly, but sometimes pain was present. The whole organ was much enlarged, and presented the usual appearances of elephantiasis.

CASE X.—Voilemier reported in 1873 an interesting case of elephantiasis in a confirmed masturbator. The case seemed then inexplicable, for the man had always lived in France. The patient was twenty-nine years old, and had not had gonorrhœa or any disease of the penis. When he was twenty-two years old he

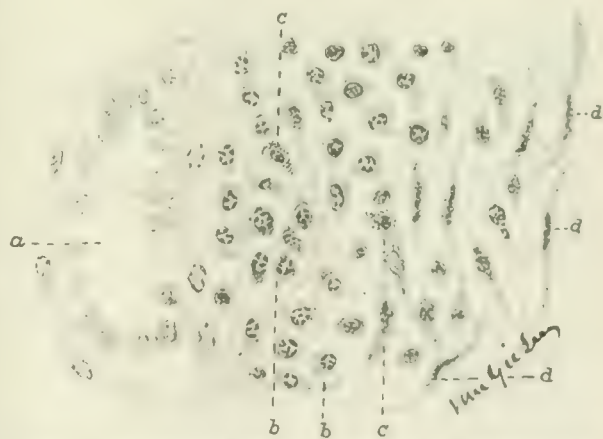


FIG. 12. SWELLING DUE TO DEVELOPMENT OF NEW CONNECTIVE TISSUE FORMATION (ESSENTIAL CAUSE OF HYPERTROPHY). a, small lymph vessel or vein with desquamating swollen endothelium; b, a mass of proliferated cells in the interior of the connective tissue, some of which are probably mast cells, and others the progeny of connective tissue cells; c c, mast cells; d d, fibroblasts.

found that his penis swelled at the point of junction of the organ with the scrotum. Every spring and fall he noticed that these parts became red, and that he suffered from heat and painless itching, and some fever. Such attacks lasted about two weeks, during which the swelling increased. After remaining stationary for a time the hypertrophy of the parts again increased until later on the penis and scrotum had assumed enormous proportions, necessitating ablation by surgical means.

In all probability this man in his vigorous masturbatory exercises caused much hyperæmia and hyperplasia of the penile urethra, and the parts becoming vulnerable, streptococcic infection set in and produced the elephantiasis. It was really a case of mild trauma.

These cases are sufficient to emphasize the fact that local traumatism plays an important part in the development of elephantiasis of the penis and scrotum.

A number of cases are reported in literature in which wounds of the urethra and penis have been followed by elephantiasis.

CASE XI.—Shepherd reported a case of a fifteen year old boy, who, when three years old, fell upon and lacerated his urethra. He has since urinated through the torn end of the canal. After the accident the penis began to swell until it reached large proportions in length and diameter.

CASE XII.—Rothschild reported two similar cases arising from fistula of the urethra. His contention that the disturbances in the circulation in the penis due to scar tissues was the starting point of the elephantiasis is beyond controversy. This observer was able to collect thirty-three cases of elephantiasis of the penis and scrotum, which he terms sporadic. In Stravino's case stricture of the urethra was the cause of the elephantiasis of the penis.

8. Elephantiasis from Operations for Extirpation of Inguinal Ganglia.

Within the past fifteen years seven authors have referred to cases of elephantiasis of the penis and scrotum as a result of the total bilateral extirpation of the inguinal ganglia. This contingency must, therefore, be taken into consideration. It suggests the necessity of careful dissection of the inguinal regions, with the use of as little violence as possible in removing diseased ganglia. In many cases it will be well to remember that iodoform petrolatum injections are simple and efficacious in curing these affections. With their use there is little fear of penile or scrotal hypertrophy. In one of my cases pseudoelephantiasis seemed to be imminent, but in a few months the swelling underwent complete resolution. Ravogli has also noticed that this elephantiasic condition may be temporary.

9. Pathology of Indurating Œdema.

Since indurating œdema is in most cases the outcome of a hard chancre, it is necessary to study the histology of both conditions combined.

In the primary lesion, or chancre, there is a small, round celled infiltration of the connective tissue, proliferation of the connective tissue cells, and an abundance of leucocytes. A chancre also shows more or less necrosis or degeneration of its constituent cells. An uncomplicated chancre in its early stages is identical in its general structure with a small superficial ulcer or patch of granulation, excepting that in the chancre there is distinctly more necrosis and degeneration of its small spheroidal cells.

The bloodvessels surrounding the chancre, as well as those at a considerable distance from the chancre, even in its earliest stages of development, are uniformly changed. The endothelial cells are swollen or proliferating, the walls of the vessels may be infiltrated, and, finally, the perivascular spaces are

crowded with proliferating polyhedral cells, among which are great numbers of plasma cells.

This early and extensive lesion of the lymph spaces about the bloodvessels, especially the smaller veins, enables us to understand more definitely how the virus of syphilis spreads, how it travels along these lymph spaces, accompanying the vessels to the root of the penis, to the first set of lymph nodes, the inguinal ganglia. From these inguinal nodes the cell proliferation, in response to the syphilitic virus, is propagated to the lymph nodes in general throughout the body in greater or less extent, and in this way general adenopathy is established (see Figs. 8 and 9).

In regard to this extension of syphilis through the perivascular spaces from the primary sore to the inguinal glands, it proceeds with great rapidity. As soon as the chancre appears the network of peripheral perivascular lymph spaces is already involved, and, as indicated by the line of proliferating cells along the venous lymph spaces, the virus is already on the path to the inguinal lymph nodes.

The stage of induration or indurating œdema remains to be considered in describing the structure of a chancre. If a chancre at the well pronounced stage of induration be examined microscopically, it will be seen that the seminecrotic mass of small, spheroidal cells composing the bed and main bulk of the ulcer is circumvallated by a zone of œdema and cellular infiltration of the papillary portion of the derma. Indurating œdema, then, as the name implies, is the wall about the chancre wherein the interfibrillary spaces of the pars papillaris are distended with fluid and small round cells.

To recapitulate briefly the series of changes in the chancre: When syphilitic poison penetrates the skin or mucous membrane, it excites local leucocytosis and exudative inflammation, with more or less necrosis; there is also proliferation of the connective tissue cells, a propagation of proliferating cells along the perivascular lymph spaces, and later a wall of infiltration and œdema of the upper corium layers formed about the periphery of the ulcer corresponding to the stage of indurating œdema.

10. Pathology of the Hybrid Form of Elephantiasis of the Penis and Scrotum.

The pathogenesis of elephantiasis centers about the process of proliferation of the connective tissue cells of the skin. No matter how varied the external manifestations, or the peculiarities of regional distribution of the disease may be, the essential and underlying mechanism of its production lies in the course of this proliferation of the connective tissue cells. The fixed connective tissue and apparently the wandering connective tissue cells or plasma cells divide and multiply. The new cells gradually elongate and become spindle shaped. Then these spindle shaped derivatives of the connective tissue cells or fibroblasts finally become converted in the fibres, the basement substance of the dermal connective tissue. Little by little by means of this mechanism the skin becomes thicker and denser. As there is a practically unlimited supply of the dermal connective tissue cells the process has very little tendency to come to a standstill, but is liable to go on for years and become more and more pronounced. Yet, if the agency or agen-

cies which promote this dermal cell growth abate, the process may halt and the hyperplasia cease.

The steps of this process are simple. When, how-

coming responsible for the often enormous thickening of the skin is a disturbance of the lymphatics and their circulation. This is quite generally, in fact almost uniformly, associated with the lesions, and may be regarded as the proximate cause of this connective tissue cell proliferation and consequent thickening of the skin. Whatever circumstances then, bring about lymphstasis, distention of the lymph spaces, damming back or retarding the lymph flow is liable to excite the dermal cell proliferation. Persistent venous congestion and dilatation changes in the periaarterial or venous spaces, thickening of the vascular walls from whatever cause lead up to this disturbance of the lymph channels and lymph circulation.

In amplification it is well to emphasize an anatomical peculiarity of the scrotum, the integument of the penis, and parts of the female pudenda which invites these disturbances in the lymphatic circulation and lymph stasis. From their structure it is to be expected that they would be par excellence the seats of election of lymph stasis and consequent hyperplasia. Now, the integument almost everywhere else on the body is applied firmly over muscles, tendons, bones, joints and firmer tissues beneath. Consequently there is a firm bed underneath the general integument which opposes any distention and stasis of the lymphatics. The occurrence of such a condition can take place only after overcoming certain degrees of opposing pressure. But with the scrotum and penile integument, and other pudendal parts the conditions are quite the reverse. Here the integument is exceedingly loose in texture, and transudation of lymph can occur with the greatest facility, and distend the dermal structures with the greatest ease unhampered by any opposing pressure.

Concerning the hybrid form of pudendal elephantiasis we find an underlying dormant condition of syphilis which by some obscure association of gonorrhœal infection awakens this elephantiasis. The two conditions seem in some way to act reciprocally and complimentary to each other. Finally, it would seem in some cases as though this combined type of infections might remain quiescent were it not for the presence of the streptococcus as a third proximate causal factor. The combination of the first two factors in a certain case seems ineffectual by themselves, but depends upon the incitement of the streptococcus to awaken and continue the hyperplasia, resulting in elephantiasis.

An exposition of the histological process at work in this hybrid type is shown in Fig. 10. Here is shown a section through the scrotum of a negro with tertiary syphilis, and who in addition had had continuous attacks of gonorrhœa, and besides this at one minute ulcerated patch an invasion of *Streptococcus pyogenes*. In this section of the scrotum, increased fully eight or ten fold its normal thickness, are the smooth muscle bundles cut longitudinally and transversely. There has been a new growth of these smooth muscle bundles, and this has contributed very materially fully as much if not more than the connective tissue hyperplasia to the increased thickness of the parts.

We are not concerned with the details of this hypertrophy and hyperplasia of the smooth muscles,

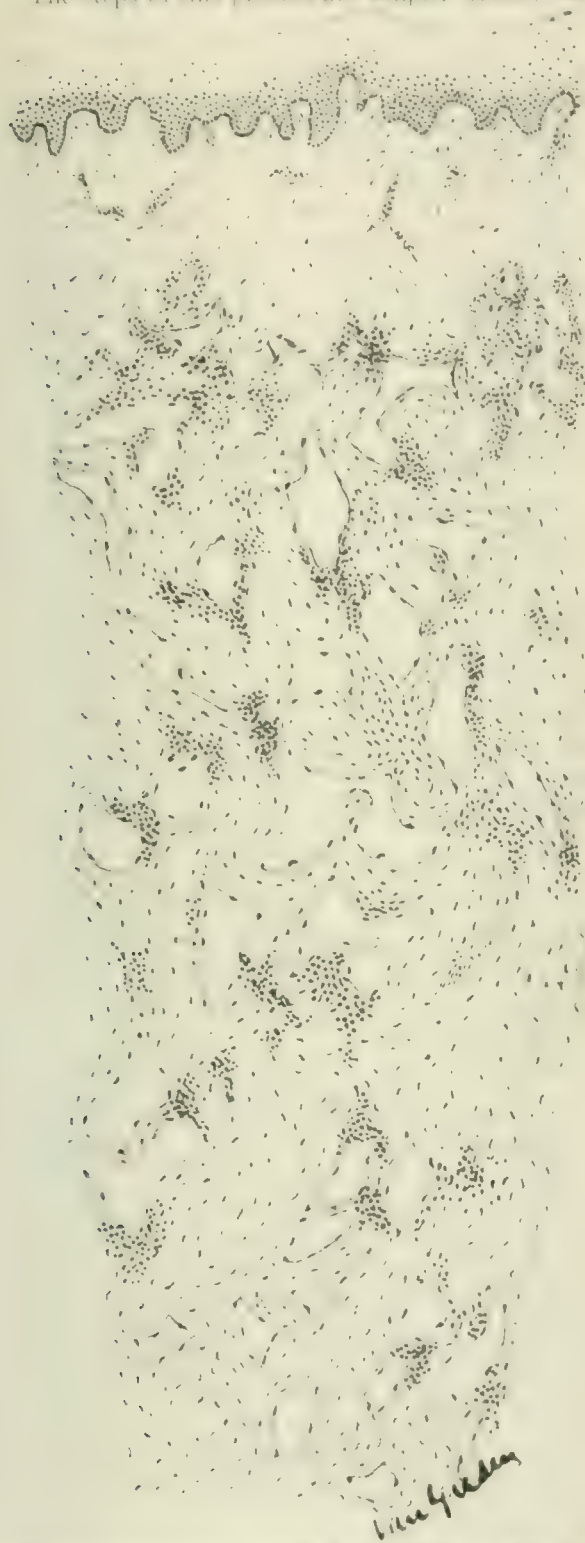


FIG. 10. Tertiary syphilis, scrotum of negro, showing hyperplasia of connective tissue.

ever, we come to consider why these cells should go through this cycle and what it is that starts them, this matter becomes more complicated. One element, if indeed it is not the cardinal factor in inciting these cells to proliferation and thereby be-

since this is incidental to a particular structure of the scrotum and is a side issue in determining the generic process in these various types of deformities and enlargements of the penile tissues. The striking and rather characteristic syphilitic feature of the section is the distention of the larger and smaller lymph spaces with small round cells. These seem to be the progeny of the endothelial cells originally lining such lymph channels. If this is the derivation of these clusters they are likely to meet the fate of phagocytosis, and not furnish new connective tissue. At any rate it can be clearly observed that the lymph channels are completely and thoroughly blocked up with these cells (see Fig. 11, a more highly magnified view of a lymph space thus occluded with a cluster of small round cells). This occlusion of the lymph channels is sufficient to set up proliferation of the connective tissue cells with resultant fibroblasts and increase of the connective tissue matrix. That course of events is shown in Fig. 12, a still more highly magnified view of a cluster of cells in the interstices of the connective tissue as, for instance, as at B in Fig. 11. In the figure is a small lymph space (or the thin walled vein) with swollen desquamated endothelium and surrounded by a group of proliferated connective tissue cells among which are plasma cells and mast cells and also fibroblasts. It is through the development of these fibroblasts that new fibres of the connective tissues are formed. And, hence, the slow increase in the total thickness of the skin.

11. Pathology of Elephantiasis Nostras.

After the consideration of the histogenesis of the preceding condition this section may be dealt with briefly. A study of figure 13 will save text. This figure is from a section of the penile integument in a case of elephantiasis. Some idea of the increase in size may be gained from the fact that this integument is fully an inch in thickness. A glance at the figure shows the very great distention of the lymph channels—a chronic lymphangeiectasis. This lymphangeiectasis once started and becoming persistent the connective tissue proliferation is an almost inevitable sequence. This connective cell proliferation may be seen in the clusters of cells around and between the dilated lymph spaces. Were one of these clusters more highly magnified and analyzed in detail we would have a duplicate picture of Fig. 12, in brief, proliferating connective tissue cells forming fibroblasts, which in turn form new connective tissue fibres; from which result a slow and continuous thickening of the skin with lymphangeiectasis.

142 WEST FORTY-EIGHTH STREET, NEW YORK.

WEAK FOOT AND ITS TREATMENT.*

BY CARL R. KEPPLER, M. D.,
New York

This being the most common of all painful, deforming processes our body is subject to, it is not to be wondered at that the greatest amount of fake is practised in its so called cure. Much more is it astonishing how comparatively seldom the general practitioner appears to appreciate the frequency of weak foot, usually confounding it with other ailments,

especially rheumatism; and furthermore, when he has diagnosed the ailment correctly with what apparent nonchalance he refers the sufferer to a convenient, well advertised shoemaker to be fitted with whatever variety of arch prop or shoe the latter has in stock. As an example of what this means allow me to state that about six to ten months of careful treatment and observation, consisting of manipulations and exercises, and later the wearing of a corrective brace, is the average time demanded to effect a cure of ordinary weak foot; and that in about 70 per cent. of all of the cases coming under my care some sort of a patent arch prop, support, electric plate, or other humbug had been worn by the sufferer without any benefit or relief excepting for a very short period after application. I said that we expect to spend about six to ten months on an average to effect a cure of weak foot. The beneficial effects of correct, systematic treatment are soon and increasingly felt, but do by no means constitute such cure. For with it I mean a restitution of the foot structure to practically normal relationship, resumption of the correct attitude of the foot to the leg, free motion of the foot in all directions with correct execution of its weight bearing and propelling functions, cessation of pain and spasm, and retention of this condition without the necessity of continuous brace or support application. The reason why these results can not be obtained by the use of an ordinary, factory made arch prop is, because the latter is only helpful in partially overcoming a secondary, apparent deformity, and the main part of successful treatment, such as the correction of wrongly applied mechanics in the distorted bony structure of the foot and the overcoming of faulty and weakened muscular action upon it is entirely overlooked. A sunken instep in itself does not constitute a weak foot, nor does the raising of such instep alone spell cure.

Before entering into a description of its treatment I will briefly enumerate the more frequent forms of adult weak foot:

1. The nondeforming, painful weak foot: There is no markedly apparent deformity; the arch seems normal, there is little or no bulging on the inner side of the foot. But the patient complains of pains of indefinite character and at irregular intervals, sometimes in the heel, again in the bottom of the foot, in the ankle, or in the calf. Especially frequent is the complaint of getting tired and sore, and of feeling stiff and cramped in the feet upon arising from the bed or after being seated any length of time. If we examine the feet carefully we usually find one or more of the following conditions: The gait is awkward, shuffling, with the knees slightly bent and the toes held abnormally far apart; in standing the heel appears squatty, the front part of the foot turned outward, if prolonged there will be a sinking down of the arch. Passive motion is free in all directions, active, probably so, but active inversion is usually incomplete. Trophic changes there may be none or very slight.

2. The deforming weak foot without spasm: The general type which comes under our observation, for unluckily a painful foot is usually allowed to progress with little or no treatment until it has at last broken down. Here the trouble is quite appar-

* Read at the meeting of the Medical Association of the Greater City of New York, held on March 18, 1907.

ent; the pain is marked, causing much suffering while standing or walking, but disappears to a great extent during periods of rest. In walking the steps are carefully taken, lacking all elasticity, irregularities under foot being carefully avoided. Upon examination the first thing that strikes us is the marked sinking down of the arch, the bulging in on the inner side of the foot, due to the slipping over and in of the astragalus, the unusual abduction of the front of the feet. The heel is flat, thickened, twisted outward, and the internal malleolus low and prominent. Active motions are usually imperfect and not very free; passively the foot can be moved to nearly normal limits in all directions, although inversion may be somewhat restricted and painful. Either one or the other foot is affected, usually both, one more markedly than the other.

3. The spastic deforming weak foot, flat foot: In its earlier stages the cause of untold agony, later, when the deformity has become permanent, and the sufferer accustomed to it attended with less discomfort, exclusive of marked awkwardness, this is a condition confronting us which, to overcome, is as difficult and needs as careful supervision as the most serious illness. The apparent deformity is the same as just described, with this difference, that it has become fixed by involuntary muscular and ligamentous spasm, that the entire foot structure is very tender to touch and manipulation, and that in the advanced stage the displaced tarsal bones have become distorted and thickened, and upon their opposing surfaces new artificial joint facets have formed. Usually associated are marked trophic changes; the feet are blue, cold and sweat profusely.

Treatment.

Hand in hand with the trend of civilization has developed the distorting (so called stylishly beautifying) of our foot wear, and the shoe maker was confronted with the necessity of either building the same according to popular fallacy or going out of business. The resultant misshapen leather boxes into which people now squeeze their feet are of so many varieties that it is impossible to describe them. But I wish to emphasize that it is just these shoes which are one of the main causative factors in the development of adult weak foot. As a prophylactic and curative measure I will therefore first mention:

1. *Correct Shoes.*—In the incipient stage, when only indefinite pain and weakness are complained of, and before any deformity or stiffness have developed, a well built shoe, combined with graded, corrective exercises, is usually sufficient to overcome the affliction. A high lace boot is ordered reaching up to and including the ankle, not because the constriction of the latter is a necessary adjunct to efficiency, but because it seems to be the only kind of foot wear that will fit snugly, hold the foot evenly, and retain its shape. Its salient features should be:

a. The sole broader than the diameter of the weight bearing foot, to prevent overlapping, it must be strong, about one quarter inch thick, and lie perfectly flat upon the ground. Its inner border should be quite straight anteroposteriorly. b. The shank narrow, well cut out on inner, slightly on the outer side, of necessity reenforced with thin steel strips imbedded in its layers. c. The heel of medium height, straight up and down from the counter, so

that its bearing surface is as broad as the shoe itself. d. The upper, soft and pliable; around the heel and instep very snug, loose over the toes and front of the foot, so as to give them free play unrestricted.

2. *Correction.*—Before fitting any corrective brace, and also after its application it is of utmost importance to bring the general tone of the foot structure, as well as of the muscles and tissues, into as nearly a normal condition as possible, thus to retain them and actively aid in reducing the deformity itself. To achieve this I employ:

A. Active exercises: a. Adduction and dorsiflexion: Patient is seated, legs extended, heels resting

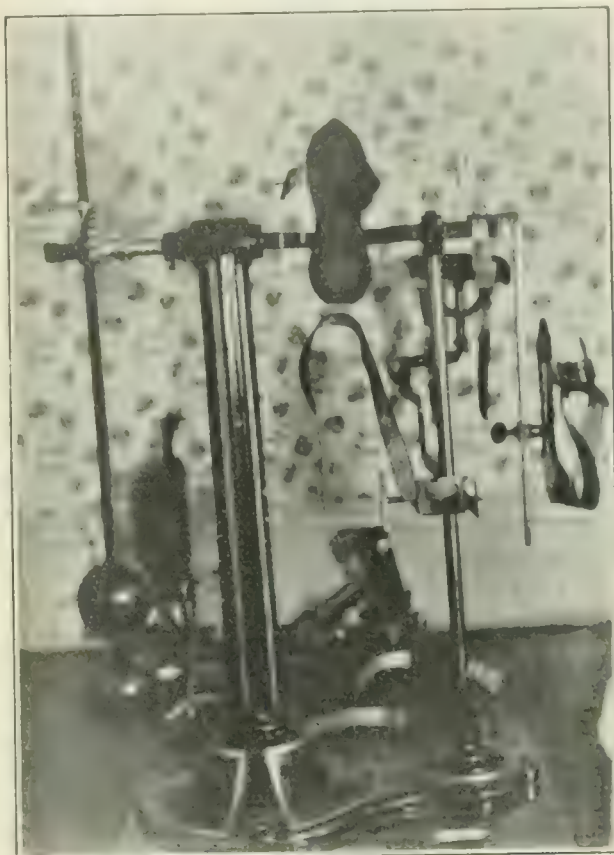


FIG. 1 Pendulum machine.

on the floor, feet apart. The latter are first adducted, bringing the toes closely together, and are then dorsiflexed to the extreme possible limit, held there momentarily, and slowly brought back to the original position. To be done twenty-five to fifty times twice daily. b. Raising on toes: Patient standing, toes together, heels far apart. Patient raises himself up on toes quickly, remains thus for a moment, and slowly comes down on his heels again. Also twice daily until tired. c. Walking board: Two boards, about five inches wide-by four feet long, are so hinged together along their entire length as to be fastened at any desired angle, and lie on the floor; in stocking feet the patient walks on them, resting the outer edge of his foot on the floor.

B. Manipulation: a. Manual: The operator faces the patient, the rear of the foot is firmly grasped with one hand, the ball of the thumb pressing against the astragalus, the palm embracing the sole.

the fingers clasping the outer side of the heel. The other hand grasps the front part of the foot on its outer and inner aspect, the finger tips curving around to the sole. While the first hand firmly retains its position, the other now moves the foot in all directions to the full limit of motion, increasing



FIG. 2.—Pendulum machine.

each excursion slowly, until all resistance and spasm is overcome. When the movements have become comparatively free the foot is moulded into a clubfoot position, and thus held is flexed and extended thoroughly several times. This manipulation should be done for from five to ten minutes every day for a time if possible, at least once a week.

b. Mechanical: Manipulation in the more advanced types of weak foot, combined with spasm, is frequently resisted and unsatisfactory on account of causing marked pain. To obviate this difficulty I make use of the Krukenberg apparatus in my office. This is a pendulum machine. A sandal, to which the foot is attached, is so connected with a freely swinging weight and pendulum that by setting the latter in motion the foot is evenly and rhythmically moved in the direction desired. The movements are either dorsiflexion and extension or inversion and eversion; and after the sufferer has overcome all fear of being hurt, I make him cooperate by actively keeping the pendulum in motion through his own muscular power. The correction can be gradually increased by increasing the pendulum bar at a greater angle to the axle, and made more or less difficult by lowering or raising the pendulum weight. The machine must be used frequently, preferably twice or three times a week; the patient spends at least ten or fifteen minutes at each sandal, keeping it in motion the while; the corrective action

being slowly increased. The use of the machine is very gratifying; rather severe spastic cases, in whom I had hoped to attain but slight result excepting by correction under an anæsthetic, have fully recovered with its application.

C. Adjuncts to Treatment: In this short paper I am able only to describe the condition and its treatment in their usual form. Complications as they arise have to be met with, exceptional conditions treated as they demand. I will only tabulate here:

a. Massage; electricity; vibration: All three very valuable aids in overcoming muscular weakness and circulatory disturbance. b. Hot foot baths: In which I usually advise the use of seasalt. c. Medication, both local and general, as the necessity therefor arises.

3. Retention.—The application of a brace, be it of steel or any other material, to a spastic weak foot, if there is deformity to overcome, would be exceedingly painful were it acting at all correctively. I wish therefore to again emphasize the necessity of first overcoming all spasm by means of the methods just described. But how are we to keep the feet in the

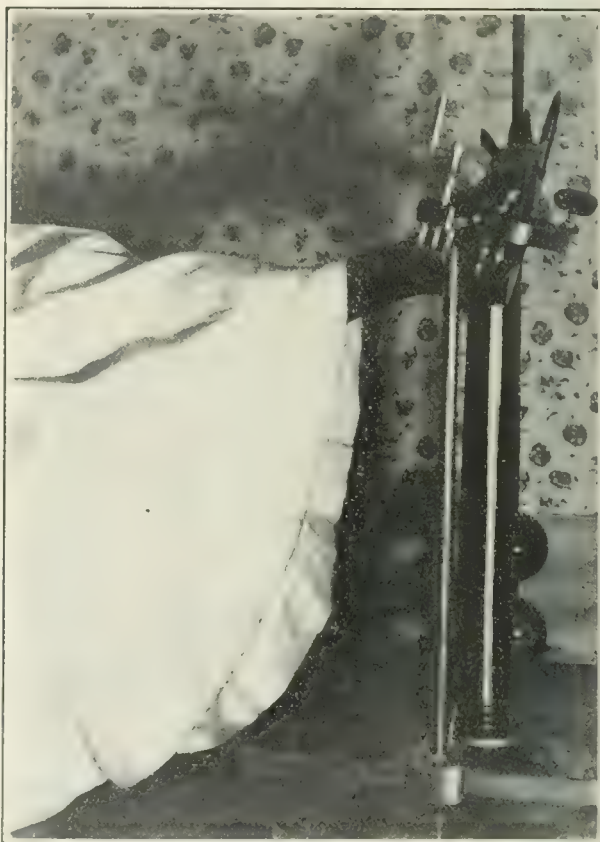


FIG. 3.—Dorsiflexion and extension

attained corrected position between treatments, so that the act of walking will in itself be an aid to correction? I make use of the following two methods; either independently, usually combined: A. Built up shoe: The sole and heel of the shoe are carefully raised by means of wedges of leather inserted along their inner side of from one eighth to one quarter inch thick, according to the amount of eversion required; this leather riser extending along the entire inner border of the shoe, or only

embracing the sole and heel. (4) Adhesive plaster crossing. The manipulation that is inverted and flexed as far as possible, starting immediately below the outer malleolus, a broad plaster strip is drawn from below under the sole and up along the inner side of the leg and is held there. Another parallel strip, starting on the dorsum of the foot is now applied, and a few circles of plaster are passed around the leg above, holding them in place. Around the ankle and foot several overlapping, in-

tersecting strips are applied, all passing over the ankle, crossing at the point of the inversion of the ankle, and all holding the foot in its position. The foot is placed in the plaster dressing, resting on the point of the point, to assume the proper position of the bones and foot structure, and the earnest endeavor of the patient. One should not promise immunity therefrom under six months, then gradually the support may be removed. During its application and after, the shoes should receive careful attention, the proper gait and exercises rigidly followed out, and massage. The foot should be kept in the plaster dressing a good part of the time.

4. *Operation.*—Surgical interference by means of open incision, astraglectomy, cuneiform osteotomy, tendon transplantation, and tenotomy I shall but briefly mention. The employment of these procedures may have its justification in certain severe and selected cases, but as a general rule I deem it advisable to try less radical means before resorting to such expedient.

Reduction under anæsthetic by manipulation: In

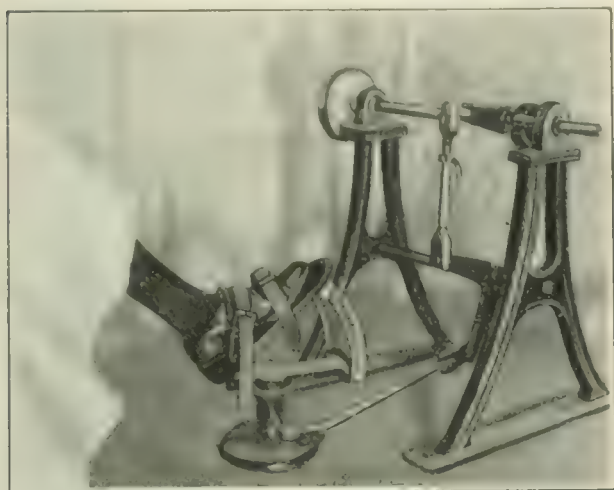


FIG. 4. Inversion and eversion.

errupted figure of eight circles of narrow plaster are added. This makes a very firm dressing, and although stretching some, will hold the foot nicely for about one week, when it must be renewed.

C. *Braces:* Of these there are a legion, each variety praised by its maker as being the only efficient one. Be that as it may, I will but briefly point out the salient features of a correct brace. Its purpose is just as much to correctly train the act of walking and to force the foot structure continually into its normal attitude as it is to overcome the apparent deformity. It must, therefore, raise the transverse arch increasingly inwards, elevate the longitudinal arch, produce inversion of the anterior portion of the foot, press against and push out the sunken, turned in astragalus by means of a high, inner flange, and lastly embrace the heel firmly and snugly to make these functions possible. In meeting these demands I have found no brace as efficient or satisfactory as the Whitman plate. The appliance must be very carefully made: first a plaster cast is taken of the foot, this cast carefully moulded, adding here, cutting away there, until we have the foot model as we wish it. Thereupon the outline of the plate is drawn upon the cast, and it is sent to the brace maker, who forms the brace over it. The plate is made preferably of steel and is either nickel plated or tinned. It is slipped into the shoe, is not fastened in any way to it, thus allowing frequent change of footwear, and must be continuously worn after application. At stated intervals the patient comes back for observation, the plate raised or a new one made as the foot improves. I wish to impress the need of this regular observation; only too frequently people think that with the making of the brace the "orthopædic doctor" has done. One of

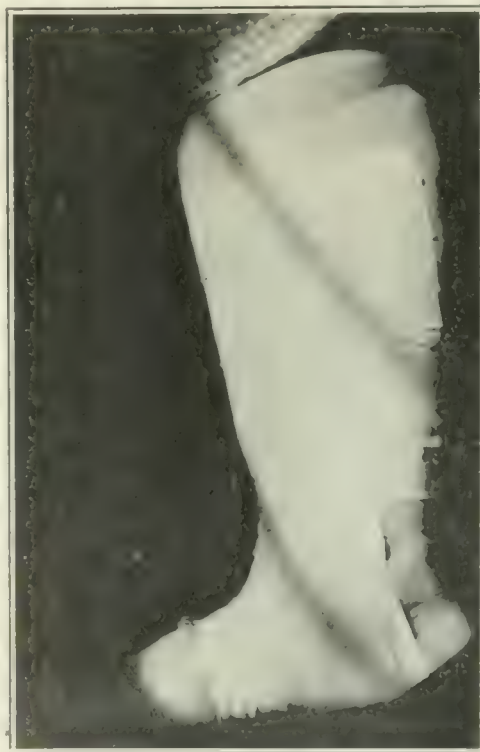


FIG. 5. Plaster dressing.

the advanced type of flat foot, in which correction of the deformity either actively or passively is impossible on account of the absolute rigidity and marked tenderness, the administration of an anæsthetic is indicated. All muscular spasm being thus eliminated, the foot is thoroughly manipulated until motion is free in all directions, is well padded with cotton, and while held by the assistant in the position of best possible inversion and dorsiflexion is encased in a snug fitting and strong plaster of Paris dressing, extending from the base of the toes up to immediately below the knee. This bandage remains unchanged

For the next four to six weeks, the patient being admonished to walk as much as possible in it, as an aid to treatment. At the end of this time it is removed, a cast is taken of the foot, it is again put up in plaster of Paris in the unchanged corrected attitude and thus kept until the steel brace is finished. This brace and a well made lace boot, slightly built up on the inner side, are now applied, and the active and passive exercise treatment administered regularly until the foot has regained its proper position and strength.

You may say that the treatment just described is long and tedious; it is. Unhappily a deformity is not a diseased spot which we can cut away; we must slowly, gradually overcome it. As there are no two normal feet alike, so there are no two misshapen feet alike. Individual, careful treatment is therefore of prime importance.

The making of a correct brace at the correct time only, cannot be too strongly emphasized. A wrong arch support is worse than none at all. We may have failures even after having expended, as we think, all our energies; this may be due to some inexplicable idiosyncrasy in the sufferer; but more probably is found to be caused by an oversight which we had inadvertently committed.

129 WEST ONE HUNDRED AND EIGHTEENTH STREET.

OPEN AIR TREATMENT OF TUBERCULOUS BONE AND JOINT DISEASE.

By JOHN CARLING, M. D.,
New York.

Orthopaedic Surgeon of the Out Door Patients' Department of the Columbus Hospital; Clinical Assistant at the Hospital for Ruptured and Crippled.

Sanatoria for the open air treatment of tuberculous bone and joint disease have existed in Europe for some time, but it is only recently that American surgeons have come to realize their importance. On looking over the literature one is amazed to find that of the seventy-five European institutions, practically all are located on the sea coast. Why this should be it is difficult to understand, inasmuch as there is no evidence to show that sea air possesses any therapeutic value over pure country or mountain air in the treatment of these cases.

D'Espine, of Geneva, says: "Everyone is agreed that salt air and sea bathing constitute the best treatment for scrofula" (1). It is admitted that sea air is pure, but it lacks the invigorating properties of mountain air, and if under the term scrofula is included tuberculous disease of the bones and joints it is hard to understand how these latter cases can indulge with benefit in sea bathing.

The only permanent sea side hospital for crippled children in this country is maintained by the New York Association for the Improvement of the Condition of the Poor at Sea Breeze, Coney Island. This institution (2) reports 19 per cent. of cures and 56 per cent. of improved, while the New York State Hospital for Crippled and Deformed Children (3), located inland, reports 33 $\frac{1}{3}$ per cent. of cures and 52.38 per cent. of improved. Figures alone are not conclusive, as much depends on the patients' general condition on admission, the extent of local disease and the length of time under treatment. However, the results obtained by Shaffer and Bradford (4),

the reports of Halstead (5), and others of cases treated in the Adirondacks and other mountain regions, and the writer's own experience, sustain the contention that for the treatment of tuberculous disease of the bones and joints a dry climate is preferable.

For those who are not familiar with the open air treatment, it is hard to believe the marvelous change which occurs in patients soon after admission. Children who are almost moribund with extensive suppuration and high fluctuating temperature soon become bright and active, their wounds begin to heal, their appetites return, and they virtually take on a new lease of life. Others, pale and emaciated from close confinement in vitiated atmospheres and an in-



FIG. 1.—Open air treatment in winter.

sufficiency of wholesome food, gain color and weight in an incredibly short time.

The routine of open air treatment adopted at the Park Ridge Sanatorium is briefly as follows:

The children are kept out of doors all day except in very stormy weather, and sleep in rooms and wards with the windows wide open. Those who are unable to walk are wheeled out in beds or invalid chairs, and the presence of fever is no bar to their going out. Not only is pure cold air not injurious to these latter cases, but it is decidedly beneficial in reducing temperature and dispelling nervous symptoms. Those who are able to go about on crutches or braces are allowed walking in moderation, others are drilled in light calisthenics, while all are taught the importance of deep breathing. Protected from the strong winds of winter and warmly wrapped in woolen blankets, patients are given sun baths when practicable, which in this clear atmosphere can be had almost daily.

Medicine and Diet.—Drugs are unnecessary in open air sanatoria, except in cases of emergency. "*Ma cuisine c'est ma pharmacie*" should be the motto, and our main reliance placed on a careful diet of wholesome foods rather than on emulsions, blood builders, and tonics. A full generous diet is furnished, but there is no attempt at overfeeding. In fact, care has to be exercised to see that patients

do not overload their stomachs. This is especially true of new patients, many of whom come there in a half starved condition and soon develop appetites out of all proportion to their ability to digest.

That forced feeding is not only unnecessary but decidedly injurious is the opinion of Beardswell, Goodbody, and Chapman (6), who were appointed by the British Medical Association to investigate the



FIG. 2. Case 11. Tuberculous disease of spine and hip

subject. Their conclusions are as follows: "1. That since very large diets gave worse results than those of moderate amount, the indiscriminate stuffing of tuberculous patients should be replaced by systematic dieting, taking into account (a) the activity of the disease, (b) the amount below weight, (c) the digestive capability, and (d) to some extent personal likes and dislikes. 2. That in view of the bad effects of overfeeding in normal individuals, great care should be taken in selecting the diet for each individual patient."

Bathing.—A healthy action of the skin is highly important. Patients are sponged daily, and once a week are given a warm general bath followed by a cold douche. An excellent table for bathing purposes is improvised by placing a board over a bath tub and covering it with a rubber sheet arranged in such a manner so as to permit drainage into the tub. Cases with Pott's disease are suspended, their corsets or braces removed, and after a thorough bath the apparatus is reapplied while patient is still suspended. This method ensures complete extension while apparatus is removed, avoids possible injury to the spine, and enables these patients to enjoy a necessity too often denied them. Massage is given when indicated, and is especially valuable to those who on account of their disability are confined to bed or invalid chair.

Treatment of Abscesses.—One of the most gratifying results of open air treatment is the rapidity with which tuberculous abscesses disappear without surgical interference, and sinuses heal with only the simplest of dressings. Abscesses can be incised with

little danger of secondary infection, because everything surrounding the patient is practically sterile, owing to the free circulation of pure air. For irrigation purposes a normal salt solution is used, followed by dry dressings. Solutions of carbolic acid and corrosive mercuric chloride are not favored, because, owing to their corrosive action they destroy healthy granulations and increase rather than decrease the discharge. Dry dressings are preferred because the constant use of wet dressings tend to macerate the skin, and when added to the heat of the body form an excellent medium for the growth of bacteria. To prevent absorption of toxins and vitiation of the atmosphere in rooms or wards, dressings are changed frequently, but with as little disturbance as possible to the patient.

Length of Time Under Treatment.—It is alleged by some that it is a waste of time to return patients to their former environment before a complete cure has been effected, as they are almost sure to suffer a relapse. Others contend that while it is desirable to continue open air treatment until the last vestige of disease has disappeared, yet this is not always practicable, and much good can be accomplished by retaining them for periods of three or four months at a time. For instance, at the sanatorium of Hyeres-Giens (7), in France, on the theory of the greatest good for the greatest number, patients are given four months of sanatorium treatment and four months of home treatment alternately, until cures have been effected or they cease to improve. The



FIG. 3. Case 12. Tuberculous disease of spine and hip

results, however, as might be expected, are not so good as in those institutions where the treatment is uninterrupted, but more patients are benefited, as the capacity of the institution is thus doubled.

Conclusion.—Open air treatment is not a fad; it is an absolute necessity for the speedy and permanent cure of tuberculous and other forms of bone and joint disease. As regards location, a moderate altitude away from the sea shore is to be preferred for the following reasons:

(1) The air is more invigorating; (2) the absence of dampness and fog; (3) more days of sunshine; (4) better natural drainage; (5) a firmer soil for locomotion.

Advantages Over Home Treatment.—(1) Patient is always surrounded with pure air and a maximum amount of sunshine; (2) his diet, rest, bathing, and exercise are carefully regulated; (3) he is under constant medical supervision; (4) he is educated and disciplined in the care of himself.

Advantages to the Community.—It is an acknowledged fact that many cases of tuberculous otitis in children develop pulmonary tuberculosis later in life. These cases by being cured of their local disease and having their general health raised to a high standard are fortified against such an occurrence, and the community is benefited by thus lessening the number of foci for the spread of the disease and consequently a lowering of the death rate.

It is therefore the duty of municipal authorities to establish and maintain open air sanatoria for the treatment of tuberculous children of the tenements, and no worthier field for private philanthropy can be found than that of rescuing poor crippled children from the ravages of this dreadful disease.

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126 EAST THIRTY-FOURTH STREET.

SOME RARE FORMS OF HERNIA.

BY GEORGE TULLY VAUGHAN, M. D.,
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Instead of pushing its way through a natural opening in the abdominal wall, or making an opening for itself in the wall and presenting externally where it can usually be felt, covered by the skin and certain layers of fascia, the intestine or other viscus with its sac sometimes insinuates its way between the peritonæum and adjacent fascia, between the fascia and muscle, between two muscles, or between the muscle and superficial fascia, giving rise to a number of rare forms of hernia known as retroperitoneal, properitoneal, interstitial, and superficial.

Retroperitoneal hernia is that form in which the intestine pushes its way behind the peritonæum, having, of course, a double layer of peritonæum in front of it. The points at which retroperitoneal hernia occurs are the foramen of Winslow, the duodenal fossæ, the pericæcal fossæ, and the subsigmoid fossa.

Properitoneal hernia corresponds with retroperitoneal hernia except that it pushes its way in front of the peritonæum, between the peritonæum and the transversalis fascia.

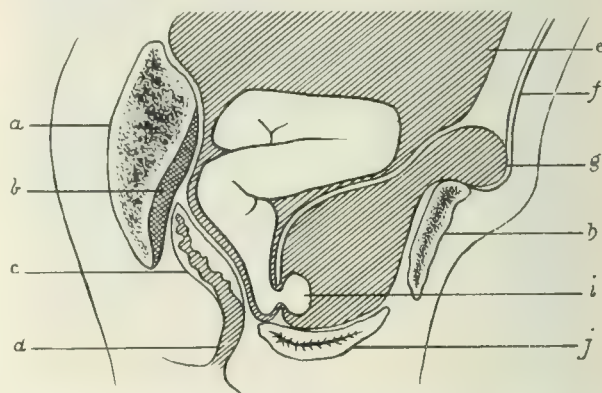
Interstitial hernia is caused by the hernia passing between the abdominal muscles, either between the internal and external oblique, or between the external oblique and the transversalis fascia, pushing

aside the internal oblique and transversalis muscles.

Superficial hernia, or *superficial inguinal hernia*, is that form in which the hernia occurs between the outer surface of the external oblique muscle and the superficial fascia.

The last three varieties should all be included under the name *interstitial*. Some writers include them under the title *properitoneal*. A properitoneal, interstitial, or superficial hernia usually occurs in connection with an inguinal, femoral, or umbilical hernia, for example, as a result of efforts at reduction by taxis, the intestine is pushed through the external ring into the inguinal canal, but the internal ring being small and already occupied, the coil of bowel is pushed in between the fascia and transversalis muscle, or between the internal and external oblique muscles. Or, the cause may be obstruction in the inguinal canal, as from an undescended testicle, so that the hernia coming through the internal ring into the inguinal canal finds its passage blocked and makes its way to one side between muscles or muscles and fascia.

In superficial inguinal hernia the bowel comes



A rare form of interstitial or properitoneal hernia. a, Right half of sacrum; b, pyriformis; c, rectum; d, anus; e, peritoneal cavity; f, aponeurosis of external oblique; g, external ring and sac; h, left os pubis; i, strangulated hernia; j, bladder.

through the external ring and then passes between the outer surface of the external oblique muscle and the superficial fascia. It is said that this form of hernia is always connected with a misplaced testicle and is always congenital. I have seen one case in a boy, thirteen years old, who had been troubled with a swelling in his right inguinal region as long as he could remember. Operation showed the swelling to be the displaced testicle which had come through the external ring and then had passed upward between the external oblique muscle and the superficial fascia. The funicular process was open so the intestine could pass into the tunica vaginalis.

I have also seen a typical case of superficial inguinal hernia, which was not congenital and in which the testicle was in its normal position in a man, fifty-eight years old, colored, who said that his hernia had come on five years before after severe exertion. On examination, the ring on that side, the right, was found enlarged, and just above the ring beneath the skin a soft mass could be felt. Operation showed this to be the hernial sac lying between the external oblique and the superficial fascia, above the external ring. The sac was of the acquired variety, not being continuous with the funicular process, was fatty, and quite thick, especially

at the inner side. On opening the sac and introducing the finger, the thickness of the inner side of the sac excited suspicion that it was the bladder, and the passage of a sound through the urethra proved that such was the case.

The case reported below might be denominated a *properitoneal direct inguinal hernia*, but it is different from any form of hernia of which I have ever heard. It looks as if it came near to becoming an obturator hernia, but instead of passing through the obturator foramen it passed on upward to appear at the external ring above the pubes.

CASE. An Italian, aged forty-five, was admitted to the Emergency Hospital, February 24, 1907, with the diagnosis of strangulated hernia. He stated that he first noticed a swelling in the left inguinal region four months previously, for which he had worn a truss. About midnight, February 23rd, he was taken with severe pain in the abdomen, followed by vomiting, and a swelling about the size of a hen's egg existed at the external ring, and could not be reduced. When operated upon about twelve hours later, February 24th, the swelling was seen as described, fluctuating and compressible, but returning on relaxing pressure. It was thought to be a case of strangulated direct inguinal hernia, and the usual incision was made. On opening the sac it was found to come directly out of the pelvis through the external abdominal ring, and fluid of the color of urine and with an offensive odor escaped. The finger passed downward and backward into the sac, which had a capacity of about 250 c.c. (8 ounces), behind and below the pubes, so that a suspicion arose that the bladder had been opened, especially as no intestine had been felt or seen. A sound passed through the urethra into the bladder showed that organ to be beneath and to the right or inner side of the hernial sac. About this time a coil of intestine was felt with the tip of the finger deep within the sac; about 3 inches from the external ring. It was impossible to bring the intestine out through the ring because it was fixed at the point at which it had entered the sac. By holding the sac open and pulling on the imprisoned intestine, it was brought up near enough to see that its color was black. The abdomen was then opened in the median line just above the pubes, and the intestine traced to the point at which it entered the sac, which was deep down and in front of the left side of the bladder. Traction on the bowel failed to dislodge it until a finger had been passed gently and carefully through the neck of the sac by the side of the limbs of the bowel and the constriction dilated. It was found that about 6 inches of ileum had been imprisoned and strangulated, being black, with an offensive odor and showing indentations where the constriction had occurred. After soaking in warm salt solution it was interesting and also surprising to see the change from black to red of this piece of bowel, which, from its appearance and odor, I had felt sure was gangrenous. It was nearly all red when returned to the abdominal cavity. There were no thrombi in the veins of the mesentery, there had been no bruising by efforts to reduce by taxis. The sac was then inverted by passing a long pair of hæmostats from the median incision through the sac to the opening at the external ring, seizing the edges of the sac and withdrawing the hæmostats with the sac. The neck of the sac was thus brought into view and found much thickened. It was sewed across with two rows of catgut sutures on a level with the surrounding peritonæum, in order not to leave a depression to invite a return of the hernia, and cut off near the line of sutures. The abdomen was closed, and the external ring narrowed. Recovery was uneventful, and the patient was discharged March 17th, twenty-one days after the operation.

This hernia evidently began by a protrusion of the peritonæum deep down in front of the left side of the bladder in the triangle between the plica urachi and the plica hypogastrica, the sac thus formed increasing in size between the peritonæum and obturator fascia and, instead of forcing its way through the obturator foramen, passed up behind it and the crest of the pubes to project finally through the external ring.

A study of the annexed drawing, by Dr. Paul Johnson, will give a clear understanding of this case.

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THE ILLEGITIMATELY PREGNANT WOMAN FROM A SOCIOECONOMIC STANDPOINT

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In the whole realm of psychology there is no study more interesting nor problem more difficult than the accurate determination of the underlying causative elements which result in this most pitiable of all social conditions: An illegitimate pregnancy.

It is my intention to deal particularly with the socioeconomic phase of the subject, touching on the psychic phenomena only where it is absolutely necessary, and although I wish to discuss principally the care of illegitimately pregnant women and the proper means of preventing the almost inevitable result of this evil, the causes must be briefly considered in order that there may be an intelligent understanding of facts through their logical sequence.

CAUSES OF ILLEGITIMACY.

I am fully aware of the difficulty of any discussion whatever of this portion of my subject, and it is with hesitation that I even make any mention of it at all; nor is it my purpose to attempt any argument nor draw any conclusion, but merely state my own opinion resulting from an observation of some extent while interne in the New York Infant Asylum and attending physician to the Florence Crittenton Home, of this city. My opinion is influenced in many instances by the observations of Davis, Morrow, Sanger, and others whose valuable works I have consulted and from which I have drawn for information and suggestions for which I make due acknowledgment.

The causes of a young woman's losing all she possesses, for regardless of what endowments and accomplishments she may have, when she loses her virtue all else is also lost, as I observe them are: ignorance, imprudence, passion, seduction, and that peculiar tendency which we sometimes see which needs only environment or circumstance to direct it downward, but great care to keep it in the right direction. The importance of these is, I believe, in the order named, although they are so interactive that it is difficult to draw definite conclusions.

Ignorance.—If I were asked to state in a single word the cause of young women's going astray, that word would most assuredly be ignorance. It is a recognized fact that the vast majority of girls who fall take the first downward step while they are yet in their teens, and usually very early in their teens. This alone points strongly to the part played by ignorance. But aside from this, after many and repeated conversations with those seeking shelter in institutions I am deeply impressed with the fact that the

majority of these young girls were not only not aware of the result of their indiscretion until the dreadful reality had dawned upon them that they were about to become mothers in an unholy and shameful union, but that they had the vaguest idea of the true nature of their sexual apparatus. How often do we, who work with houses of refuge, see young women seventeen, sixteen, and even fifteen years of age, mothers when they themselves should still be under the parental care. And in every case what these poor children knew, if anything, concerning sexual matters had been acquired, not from the proper source, a loving and devoted parent, but through the instruction and innuendo of their older playmates who were well versed in the vulgar talk concerning these sacred matters. Hence from my own experience and that of other observers of this question, ignorance is considered by far the most powerful influence causing illegitimate pregnancies.

Imprudence and Passion.—But I do not assert at all that ignorance is the only cause. Imprudence and passion are the predominating causes in a great many cases, and as these two are so closely connected in their influence I will consider them together, for usually one fosters the other. Some girls possess that buoyancy of spirit, indifference to important matters and disregard of responsibility (which constitute imprudence) to such an extent that they are in constant danger of ruin, and when the passions are sufficiently aroused, consent to the fatal embrace which results in a dishonored motherhood, expulsion from the home in disgrace, a short life of glittering debauchery, and the end—a pauper's grave.

On the other hand, we have a class in which the passions are naturally strong enough to assert themselves *ab ipso* when by the unnecessarily lengthy handshake with a subtle pressure, or the close embrace of the waltz, these passions, strong by Nature, are aroused, quite unconsciously, I believe; imprudence plays its part, perhaps through a kiss, the will is for a moment in abeyance, and another unfortunate is added to the list. The majority of such cases occur early in life, at a time when Nature is asserting itself and judgment is not yet acquired. Hence, we see again the influence of a lack of experience—knowledge; ignorance.

Again, there is a class governed by a professed "inclination" (belonging under the head of passion) which, according to statistics, is large, but upon closer investigation of many authenticated cases there is displayed a motive even stronger than inclination, such as poverty and necessity (a not inconsiderable class in larger cities), where the existence of a strong natural passion makes the step much easier.

Seduction.—Another influence worthy of consideration is seduction. A detailed observation of this most criminal of all evils is unnecessary because of the general familiarity with it. It must be recognized that the man is usually the aggressor and the woman the passive party. Whether the seduction occurs through malicious intent or under the promise of marriage the crime is equally heinous. It is well to notice incidentally at this point that a considerable number of seductions occur after receptions and dinings in the "private dining rooms" of hotels, where wine has been given a conspicuous

place. The most unfortunate part of seduction cases is the difference in the code of morals for the two sexes whereby the man, the sinner, is thought hardly any less of, while the girl, the one sinned against, is only too often doomed to a life of shame.

A class of peculiar psychological interest and the last I shall mention before leaving this part of the discussion, is that in which exists an apparent innate depravity which needs only the motive strong enough for a life of shame to be established. This has to deal, however, with the woman who deliberately becomes a prostitute, rather than the one who is the real subject of this paper. I am persuaded that such cases are influenced strongly by heredity, hence belong to a sphere too deep for the present discussion. One case which has recently come under my personal notice will bear mentioning, because it is of peculiar interest:

A young girl, whose father died when she was a child, whose mother married again, and the stepfather was so cruel in his treatment of her that she was forced to leave the parental roof, and deliberately, at the age of thirteen years, chose prostitution as a means of livelihood, becoming a mother before she was fourteen. She is now nineteen years old, and has led the life of a prostitute since her first fall.

I do not allege that I have taken up the only causes of this evil, for there are others, especially in the large cities, such as the accidental influence of prostitutes, either clandestine or professional, who frequently occupy a house, or even worse, an apartment adjoining that of a respectable family, and necessarily come into contact with the girls of the family. Poverty is a powerful influence, and by no means the least is the influence of the music and dance halls.

But leaving the causes I turn to a consideration of the real subject of my paper, the care of the illegitimately pregnant woman. It must be clearly understood in the beginning that in properly caring for these unfortunate girls we are dealing with the result of the evil and not its cause. I can say with Davis: "I believe most emphatically that the causes of illegitimacy should be published widely, and all emphasis placed thereon; but in the great majority of instances the results should be kept a profound secret."

Two problems confront us in the undertaking under consideration: How best to protect the mother from disgrace and how best to subserve the interests of the child. The management of an individual case depends largely upon whether the victim lives in a small town or country district or in a large city; whether she is from a home of affluence or whether a dependent. The girl who finds herself in this sad plight should at once seek the aid of her parents, who, if they are the proper kind, will, with the assistance of the family physician, give their daughter the necessary care and protection, and the misfortune to child and parent ends here, and shame and disgrace are avoided. But how often do we see the reverse of this. The girl is either not on sufficiently confidential terms with her parents to seek their advice, or if she does confess her condition hoping for aid and comfort, which she has every reason and right to expect, she is met and repulsed with a storm of grief (natural enough), indignation, rage, and expulsion from the home which at this time above all others should shield and protect her,

but from which she is driven, doomed, alas, in the vast majority of instances to what is worse than hell, a life of prostitution.

According to Sanger 25 per cent. of all prostitutes have borne illegitimate offspring. Need we seek further to know what becomes of these girls? It has been said that "once a prostitute always a prostitute," and I am inclined to think that efforts to reclaim those leading such a life are in most cases vain. Hence our aim should be to prevent the illegitimately pregnant girl from descending to this level and assist her in regaining her former social position. It will be seen without argument that such a problem is not merely a social or humanitarian one, but one which seriously affects the community at large in reducing the possible number of recruits to prostitution, and thereby lessening the source of the spread of venereal disease. How, then, is the further downward course of these girls to be checked?

Let it be remembered that the illegitimately pregnant girl as considered in this paper is by no means an abandoned woman, but simply one who has fallen through, perhaps, a single act of indiscretion, and if properly cared for may be reclaimed and made a useful member of society.

Before we can accomplish much in this direction public opinion must be educated so as to appreciate the fact that in our endeavors to reclaim these unfortunates we are in no sense condoning the offense, but rather trying to offset the cause by so dealing with the result as to modify as far as possible its effect on the community, the morality and future of the unfortunate one, and to give to the offspring of this conception of sin—those poor creatures of circumstance—the best start in life possible under existing conditions, for it is stated by some that our most serious duty is to the children.

The argument so often advanced that we are abetting the evil by giving protection to these girls is used only by those who have never given the matter careful and unprejudiced consideration; to those who have, such arguments are mere sophistry and are scarcely worth the trouble of refutation.

In what way, then, are we able to give these girls proper protection from the gaze of an unforgiving public, aid them in regaining their social position and save them from a life of shame? The source from which a girl has every right to expect this consideration is her parents; unquestionably when she has acted indiscreetly or has been seduced and is about to become a mother in shame rather than in pride and honor, those nearest to her should throw the mantle of protection around her and help her in every way possible. The first endeavor should always be to effect a marriage with her seducer; in many instances the disgrace ends here. If the birth would follow too closely upon the marriage an extended trip may be taken by one or both, if the couple has sufficient means, and the child is placed in an asylum; the parents return to their home, and in several years the child may be adopted into the family.

But how often is any such thing done? Unfortunately for our code of morals the aggressor, the man, even if he is known, soon lives down the disgrace, and even, although he has drunk the cup of degradation to its dregs, may rise again and be-

come a respected citizen and the world praises him for it; not so the woman, let her character be once stained and her fellow men (or rather women) stop long enough in their search for pleasure to blame, criticise, and condemn her, and then pass on, leaving her an outcast with a decimated character and vilified name, with nothing to choose save the inevitable, prostitution.

The parents, as a rule, whether rich or poor, turn their erring daughter out of the home, caring not whether she becomes a prostitute, nor whether by protecting her at this critical time of her life, they might save her from such a life and maintain her social position. How often does the father of such a girl stop to think whether he himself was entirely blameless in his youth? How often do the parents consider the part they play in their daughter's future life by not protecting her at this time? Where, then, may this girl, or the orphan, or the poor girl of the shop or domestic class look for shelter, when she finds herself in this unhappy state? Manifestly she must choose between the cold charity of the brothel and the protecting care of a properly conducted institution. In the well governed asylum or house of refuge I believe we are to look for the most fruitful source of benefit to this class of social outcasts.

I am fully aware of the many deficiencies in these institutions, the opportunities for abuse, and the dangers arising from mismanagement; nor shall I discuss these, but rather endeavor to point out what constitutes a well managed retreat, and wherein such an institution can accomplish much good in this great work of reclamation.

As a rule a girl from a small town had better go to a distant city, unless she is assured absolute secrecy at home. This is not necessary where the victim lives in a large city, for in most large cities there are several such institutions. Some of these require an applicant to give her real name and address, others furnish on admission an assumed name or a number, requiring, however, that the real name and address of the applicant as well as that of her nearest friend be written on a blank for that purpose, which is then put into an envelope bearing on the outside her assumed name or number. The envelope is sealed and placed in the safe and is returned to her unopened on her departure from the asylum. It is of course evident that the information contained in the envelope is used only in the event of the patient's death. I believe the latter to be the preferable plan.

No institution of this sort should fail to have some form of active employment for both the mind and body of the inmates; and so far as is possible this should be of an industrial or utilitarian character. The custom which obtains in some asylums of having each inmate, just as soon after her delivery as possible, assigned to some duty is a good one. This may be sewing, in the laundry, house work, waiting on the table, etc., and in this way the girls of the servant or shop class of the large cities, or the country girl without any sort of industrial training may acquire sufficient knowledge to make her self supporting after she leaves the asylum, and that indeed is one of the objects of the training.

The presence in such an institution of a kind and motherly woman as matron, one who can exert a

gentle influence, and by example and affection gain the confidence of the inmates, and lead them back to a state of self respect and to a desire to regain their former position, is an absolute necessity. A high tempered, impatient, and irritable woman in such a position will do much to hasten the sufferer to a life of shame, while one possessing the characteristics I have mentioned can do more than any other influence can possibly do in leading these girls to a higher life.

One institution with whose methods I am familiar has a feature which is specially commendable. When the inmates are able to be put in the industrial department they receive a compensation for their work which is placed to their credit weekly, and is regulated by a fixed scale, the amount received each week, however, depending upon the attention and care given the child. In this way a young woman leaving the retreat does so with sufficient money to her credit to keep her from need at a time when otherwise she might be driven to immorality for a livelihood. The institution goes further, it secures positions for its charges through the assistance of another institution, a sort of home for women who are out of work. Through such procedures, I believe that many of these girls can be prevented from going further in the downward direction who would otherwise inevitably go to the brothel.

The institution protects the unfortunate one from the gaze of the world in her disgrace, which if kept a secret, she can rise above, but if known, places the stamp of an outcast upon her, and drives her to a life which destroys not only her own soul, but likewise that of the men who visit her. The length of time such a girl should remain in an asylum depends largely, if not entirely, upon what disposition is made of the child, and will be considered in a subsequent paragraph.

The second consideration in the discussion is how best to subserve the interests of the child, to whom many think the greatest wrong has been done. There are in reality only two alternatives open to us for choice. In every instance an early marriage between the parents is to be preferred, thus giving to the child a legitimate birth and the subsequent care by its own parents. But when this is impracticable an early adoption into a good home should be the chosen alternative. Such adoption should take place within the first twelve months if possible, and in this connection I will consider what properly came under the head of asylums, but for convenience is taken up here, viz., the length of time a girl should remain in an institution after the birth of her child. Of course a girl owes her child the best start in life possible under the circumstances; mother's milk is the child's natural food during the first year of its life and is best suited to its needs, hence it is the mother's duty to furnish this, notwithstanding the opinion of some observers that the milk of illegitimately pregnant women is not up to the required standard. So the patient should remain with the child until it is weaned, unless its adoption into a good family can be effected earlier. This is, I believe, the custom in most of the larger institutions.

Illegitimate children are frequently below the normal power of resistance, and institution children uniformly so. Considering this, we are forced to

the conclusion that the larger institutions are at best poor places in which to rear children. Hence, the choice is between the early marriage of the parents and the early adoption into a suitable family.

The results of illegitimacy are far reaching. For the mother it usually means a life of prostitution. For the children it means being reared amid immoral and vicious surroundings, with the very strong probability that the girls will in turn become what their mothers are, and the boys street urchins, brothel and barroom loafers, and finally criminals of the worst sort. Much, if not all, of this can be avoided by properly caring for the girls as outlined above, as soon as their condition is known, and for the offspring during the first year of its life.

This brings us to the last and most important part of our discussion. How may illegitimacy be prevented or at least the number of illegitimate pregnancies materially reduced? By far the influence of weightiest importance in correcting such evils as are here described is *the home*. Mothers should lay aside that silly and false sense of modesty, which appears to be so prevalent, which forbids their conversing with their daughters on subjects which vitally concern their morals. They should perform that duty which they as mothers owe their daughters in instructing them as early as they are capable of understanding, in sexual matters, impressing them with the importance of care of their sexual apparatus, and informing them for what purpose their organs of generation are given them; the propagation of the race through an honorable, hence honored, motherhood, and that everything pertaining to their private anatomy is sacred, and not to be approached by any man who is not their lawful husband.

The mother is moreover the proper person to warn them of the dangers of indiscretion and to avoid the company of men who will talk to them in an improper manner or attempt to take any liberty whatsoever. Such men are only wolves in sheep's clothing. So many parents feel a hesitancy in talking to their children on these matters when they should recognize the fact that they are going to learn of them sooner or later from their playmates, and that not in the best possible way; that it is far the safer plan for them to be taught correct ideas of these important matters by those best qualified to instruct them. Parents should gain the full confidence of their children. Likewise teachers who come in daily and intimate contact with the pupils should by personal and individual instruction warn them of the dangers which lie in the way of indiscretion. I am a strong advocate for all matters pertaining to the health of mind and body, including sexual matters, being freely, plainly, and thoroughly taught in our schools. For is not to know oneself a part of a liberal education?

The religious training of young people generally should not be neglected, since it is one of the greatest safeguards against temptation; and a matter receiving too little attention to-day is the class of literature read by the young during their most impressionable years. These years of impression are likewise the years when the sexual functions are developing and Nature is asserting itself, and when the passions are struggling for supremacy over reason, discretion, and judgment. A large proportion

of the popular novels are not only not improving, but are inimical to the developing mind in burdening it with worthless trash, and only too often direct it towards immoral thoughts through licentious insinuation and allusion. Such literature should have no place in the home library and should never be permitted to fall into the hands of the youth. How important is it, then, that young people should be persuaded to read only such books as have a wholesome and uplifting influence, literature which develops the intellect and directs the mind into purer channels of thought.

In conclusion, I may say that the prevention of illegitimacy and even to some extent prostitution lies in the education of the youth in all matters pertaining to morals, teaching them the proper use of their bodies, and the debasing results of abuse.

64 GRANBY STREET.

AMYOTROPHIC LATERAL SCLEROSIS WITH BULBAR ONSET.*

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Amyotrophic lateral sclerosis presents several types according to its mode of onset or to the predominance of certain symptoms. The most frequent is the usual classical form as described by Charcot, in which a paretic condition with some spasticity, then amyotrophy with R. D. are the main symptoms. In the second form the malady presents essentially a progressive muscular atrophy and the spastic element is not marked, but the reflexes are exaggerated. In another form the spasticity appears first and is much pronounced; the amyotrophy develops later. In all of these varieties bulbar symptoms may develop long after the onset of other symptoms. Finally there is a form of Charcot's disease, in which bulbar symptoms are the first to appear, and atrophy of the extremities, spasticity, or changes of reflexes occur later. This form is comparatively infrequent. In looking up the literature for the last five or six years I could find very few examples of amyotrophic lateral sclerosis with a bulbar onset. The infrequency of this condition warranted me to put the present case on record.

CASE.—Mrs. S. L., about fifty years of age, noticed about eighteen months ago some stiffness in the neck which was soon followed by pain in the throat. Rapidly a difficulty in swallowing and speaking developed. At about the same time she observed some difficulty in holding up her head. All these symptoms became gradually more and more pronounced.

The present state is as follows: The patient complains of a drawing sensation in the muscles of the neck and of some difficulty in holding her head straight, also in turning it to either side. The swallowing, especially of solid food, is very troublesome. At each attempt to swallow she coughs, and the food frequently regurgitates through the nose. The mastication is also difficult, and the food remains a long time in her mouth. When she speaks, she feels a pulling sensation in the muscles of the face and palate. The voice is nasal and the words are not distinct. The uvula is immovable in attempts to breathe or speak. The move-

ments of the tongue are limited, the tip cannot be raised so as to touch the palate.

Three months ago the patient noticed a gradually increasing weakness in the upper extremities particularly on the right side, so that at present raising of the arms and handling objects are quite difficult. She also observed that her face became thinner and emaciated, so that now she has the appearance of a very old person; the atrophy of its muscles is quite marked. Patient shows also a marked atrophy of the muscles in the supraspinatus and infraspinatus regions, especially on the right side. The deltoid on the right is weak and atrophied. Shrugging of the right shoulder is not properly performed. There is also scoliosis towards the left. The thenar and hypothenar muscles are in a state of atrophy more on the right than on the left. The grip of the right hand with the dynamometer is thirty-two, of the left twenty. The lips are thin. The tongue is markedly atrophied; when it is protruded, very deep wrinkles are noticeable. Very pronounced fibrillary contractions are noticed in all the atrophied muscles, especially in those of the tongue.

Electrical examination shows distinct reactions of degeneration in the atrophied muscles of the face, of the tongue, in the thenar, supraspinati and infraspinati muscles of the right side. Faradic contractility is very much diminished. The knee jerks, also the right biceps reflex, are exaggerated. There is no Babinski, but a paradoxical reflex is obtainable on the right.

A test for sensations shows that while touch and temperature senses are preserved, pain sense is markedly diminished on the neck, face, upper extremities, and thorax in front; on the back as low down as the middle of the scapulæ. The pharyngeal reflex is abolished. The taste is somewhat impaired. There is a numbness of the mucous membrane of the mouth and palate. The examination of the eyes is negative. The patient was never ill prior to the appearance of the present disturbances. The family history is also negative.

In making a diagnosis of this case, the first thought that suggests itself is glossolabiolaryngeal paralysis. As it is well known, Duchenne described under this name an affection, which consists of a paralytic condition of the muscles of the tongue, palate, and orbicularis oris; this leads to a progressive disturbance of articulation of words and of deglutition, which later becomes complicated by disorders of respiration, and the patient dies either in syncope or from inability to take nourishment.

The difficulty of speaking, of emitting certain sounds, of mastication, of deglutition, of whistling, of blowing, the atrophy of the tongue, the R. D. and the fibrillary contractions in the latter—are all symptoms of Duchenne's disease found in a typical form in my patient. One would have been justified in making this diagnosis if there were no other symptoms. The history of the case shows that fifteen months after the onset of the bulbar symptoms muscular weakness and atrophy of the upper extremities began to develop. The atrophy is marked in the thenars, hypothenars, deltoids, supraspinati and infraspinati muscles; it has been of progressive nature, and upon electrical examination shows R. D. It presents the same distribution as in Aran-Duchenne's type; it is therefore of spinal origin.

Duchenne as far back as 1861 pointed out the association of progressive muscular atrophy with glossolabiolaryngeal paralysis, but he considered such patients as having two independent maladies. Examples of this character were even known before

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Duchenne. At present we know that this association is neither exceptional nor unusual.

Bulbar paralysis may be associated equally as often and in fact more frequently with amyotrophic lateral sclerosis than with myelopathic muscular atrophy. When this occurs, the labioglossolaryngeal paralysis has a spasmodic element which is the predominant characteristic feature in Charcot's disease.

My patient presented from the beginning of her affection a stiffness of the neck, of the tongue, of the pharyngeal muscles. She still complains of a drawing and pulling sensation in her jaws when she attempts to speak, or even at rest, of a similar sensation when she attempts to raise her head or in turning it to either side. The reflexes of her lower extremities are greatly exaggerated, and the paradoxical reflex is distinct and easily elicited on the right side. We are, therefore, here in presence of three pathological conditions: Involvement of the nuclei of the medulla, of the cells of the anterior cornua (progressive muscular atrophy), and finally of the motor pathway.

As far back as 1870 Charcot said that the cells of the nuclei of the medulla are to the cranial nerves what the cells of the anterior cornua are to the motor spinal nerves. The bulbar palsy, therefore, and the muscular atrophy are two similar affections differing from each other only by their localization, and in a patient thus affected we can assume the position that a pathogenic factor, whatever it may be, carries its deleterious effect to the cells; in one case only to those in the cord, in another in the medulla, and in still another in both; otherwise speaking the entire lower motor neuron will be affected or only one portion of it. In Charcot's disease the rule is that the inferior as well as the superior motor neurons are affected conjointly, and that while the maximum of degeneration of the inferior neuron is in its place of origin, viz., in the cell, the maximum of degeneration of the superior is in its termination. Briefly speaking, the morbid process of amyotrophic lateral sclerosis is at its height at that level where the two neurons communicate with each other, viz., in the medulla, which in reality is the prolongation of the cord. The participation therefore of the medulla is inevitable. The evolution of the symptoms in my patient shows that the motor bulbar neurons opened the pathological process.

1430 PINE STREET.

A CASE OF EYESTRAIN MISTAKEN FOR APPENDICITIS AND CHOLELITHIASIS.

BY ELLICE M. ALGER, M. D.,

New York.

Gould, of Philadelphia, has long alleged that among the occasional symptoms of eyestrain must be numbered abdominal pains and functional disorders of digestion. In support of this statement he not only reports cases of his own and other oculists, but lays great stress on the testimony of Morris that many cases sent to him for operation for various causes are wholly or in part eyestrain cases. Howe, of Buffalo, on the other hand, has recently collected the opinions of a large number of representative ophthalmologists who are almost unanimous in believing that there is no basis for such assertions in any cases coming under their observation.

This diversity of opinion is not hard to under-

stand, when we stop to think that these cases are probably relatively infrequent and that the diagnosis of each one depends on the skill of two men, a mistake of either being fatal.

First and most important comes the diagnostic skill of the surgeon, for to him the patients with abdominal pains resort, as it is proper they should. The greater number of these are afflicted with conditions the cause of which is clear and the treatment undisputed. Among the remainder are many in whom the ætiology is not so plain. But the whole training of the modern surgeon tends to cultivate not diagnostic ability so much as operative skill. Upon these patients he therefore generally does an exploratory operation of some kind, which sometimes clears up the difficulty and sometimes does not. Every one of us can think of patients who have been "operated" upon over and over again without either relief of symptoms or discovery of lesion. Even supposing the surgeon is among those who recognize the possibility of a reflex cause, it requires no little skill and experience to determine whether this proceeds from the eyes or some other organ. If he sends the ophthalmologist patient in whom he has overlooked some organic lesion, or patients who belong to the internist or the neurologist, he will naturally get no benefit from the consultation, and after a few trials is likely to scoff at the whole theory. The ophthalmologist plays a much smaller part, for, it is the surgeon's ability to exclude organic diseases which is the principal thing. The work of the ophthalmologist consists simply in finding and correcting any reflex ætiological factor in the eyes, and yet even this will often be badly done if, as Gould states, the average examiner is both careless and incompetent. Thus a mistake on the part of either one will more than counterbalance any amount of skill on the part of the other; while even granting the maximum of care and skill to both, there are many cases which are the result of combinations of local and reflex causes and are benefited by eye treatment only in the relief of some symptoms, the others not being affected. In other cases in which complete relief follows it may be, in many instances, interpreted as a coincidence and not as a matter of cause and effect. For these reasons positive evidence is very much more valuable than negative, and cases in which the elements of suggestion and coincidence can so far as possible be excluded are of especial value.

The following case therefore seems worth reporting. It is especially interesting because it affords a concrete illustration of the ease with which such cases may be overlooked by the inexperienced surgeon or fail to receive benefit from the inexperienced ophthalmologist, and finally of the brilliant results which may follow correct surgical diagnosis and proper treatment of the eyes. The chief symptom was chronic severe abdominal pain of several months' duration; the diagnosis of the first surgeon was appendicitis; of the second, gallstones; and of the third, eyestrain. The pain was completely relieved by the glasses of the first ophthalmologist for a period of nearly three years; recurred when they were lost; was aggravated by the prescription of the second; and finally completely relieved again by the glasses of the third. The history of the patient in detail is as follows:

CASE.—Mr. K. S., age nineteen, in the fall of 1901 began to have attacks of abdominal pain which he described as sudden, severe, crampy, and paroxysmal. They generally occurred two or three hours after meals, but were liable to occur at other times, each paroxysm lasting fifteen or twenty minutes. They occurred nearly every day and sometimes several times a day for several months, gradually increasing both in frequency and severity. A surgeon being called gave it as his opinion that the condition was one of chronic appendicitis, and advised an early operation. For some reason the parents called a second surgeon, who expressed himself as in favor of a diagnosis of cholelithiasis, and likewise advised operation. The family now thoroughly alarmed summoned Dr. Robert T. Morris to clear up the diagnosis and operate for which ever condition he thought present. The boy had been at this time (January, 1902) confined to his bed a long time, but Dr. Morris said the history of gastric disturbance antedated all inflammatory trouble, and there were marked signs of eyestrain, consequently he followed the plan of working out this possible factor first. From the young man's description, the family evidently thought the eyestrain theory of abdominal pain rather fantastic, but as coming from a man of large reputation and one who was moreover declining an operation involving a large fee, at least entitled to respect.

Consequently they took the patient to Dr. S., a well known oculist for examination. The young man gathered that he appeared to take no great stock in the connection between the eyes and the abdominal symptoms, nevertheless he made a careful examination of the eyes under a cycloplegic, and prescribed glasses for constant use. Without other treatment the pains disappeared completely, till January, 1905, a period of nearly three years. At this time during one of his daily trips to New York he had the misfortune to lose his glasses and soon began to have recurrence of his pains. Acting on the popular belief that it requires no particular skill to fit glasses he went to a firm of advertising opticians, and was examined by one of their registered physicians, of course, without any cycloplegic. These glasses from a visual standpoint were eminently satisfactory, but much to his surprise the pain, instead of disappearing, became steadily worse, and persisted all that summer. At last his parents fearing there might be some inflammatory trouble sent him again to Dr. Morris, who in turn referred him to me.

At this time (September, 1905) the attacks were of the same kind and duration as before: he was thin and nervous, but was sleeping well, and having neither of those commonest of eyestrain symptoms, headache, or tired eyes. He did show during the examination a very frequent twitching of the arms and shoulders. His vision was 20/20 in each eye, and he accepted a \mp .50 Cyl. axis 90 in each without either improving or decreasing his acuity. Ophthalmoscopic tests revealed clear media and normal fundi, while the ophthalmometer indicated in each eye a corneal astigmatism of approximately I. D. with the rule. Maddox rod showed orthophoria, his divergence power was 5° and convergence 10°, with difficulty; after this test there was a homonymous diplopia with a red glass. I have not been able to learn the formula of the first glass, which was so beneficial, but the second, which aggravated the symptoms, was RE. — 25 + 50 cyl. ax. 90. LE. + .25 cyl. ax. 90. Several days later, under atropine, his refraction was RE. + .75 cyl. ax. 90 = 20/15. LE. + .75 cyl. ax. 90 = 20/15. He was given the full correction, and told to report from time to time, which he failed to do. Six months later, in looking over my case book, I became curious as to the outcome, and wrote the boy's father for information. I received a note, which was forwarded to Dr. Morris, the substance

of which was that, since leaving my office the boy had had no treatment of any kind, that he had worn his glasses constantly, and had had not one single attack of pain.

It is interesting to note that this patient had normal vision in each eye without glasses, and that he had no headache or eye pains, thus coming in the category of those who, according to many authorities, should not have their refractive error corrected at all; that the total error was a small one, as it usually is in such cases, and that the muscular difficulty present was either secondary to the refractive one and disappeared with it, or else played no part in the symptom complex.

31 EAST FOURTEENTH STREET.

IMPETIGO CONTAGIOSA.

BY NATHAN T. BEERS, M. D.,
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The average general practitioner is usually satisfied with his knowledge of skin diseases when he has solved the mysteries of eczema in its various forms and stages, and has learned some simple prescriptions for its treatment. To his mind, many or most skin eruptions quickly classify themselves under this general heading; and, consequently, he is frequently embarrassed by the poor results with which his treatment is met. And yet for this he is not to be taken to task; the study of the many diseases of the skin must extend over many years before one may consider himself proficient in their diagnosis. Books instruct the mind, but not the eye, and colored plates are but little more of value. Constant clinical observation is his only hope, and to the general man this is of necessity denied.

There are, however, several diseases which commonly affect the skin exclusive of eczema with which the average practitioner is or should be thoroughly conversant. Prominent among these is that annoying, unsightly affection usually found in the little folks, impetigo contagiosa. Diagnosed without difficulty, responding quickly to simple treatment, this disease offers brilliant possibilities to the observing general man.

Impetigo contagiosa is defined in the textbooks as, "an acute, contagious, inflammatory disease of the skin, characterized by the formation of discrete, superficial, flattened, rounded, or oval vesicles or blebs, soon becoming vesicopustular, and drying to thin yellowish crusts."

While this leaves little to be desired as a definition, to the uninitiated it presents but a meagre color picture of the disease; and since this paper is written with no idea of imparting knowledge to the already proficient skin specialist, a simple talk on a simple disease is the most the reader may expect.

The textbooks tell us of an "epidemic" form of the disease in which symptoms analogous to those of the eruptive fevers may be observed in the early stages. Headache, malaise, loss of appetite, flushed surface, a degree or more of fever and constipation make up the symptoms usually described in connection with this epidemic form of impetigo; practically identical with a commencing chickenpox. While the foregoing may all be true, its importance is not

great to us since we rarely, if ever, see a case of impetigo contagiosa before the blebs or pustules are well formed.

While no age is exempt, experience teaches us that impetigo contagiosa is a disease of childhood; and although possible in any condition of health, it usually occurs in the pale, poorly nourished, little folks whose resistance is lowered through lack of air and sunshine. Regarding seasons, late winter and early spring show the largest crops.

When the doctor is asked to see a case of impetigo contagiosa it is usually well along in the stage of scab formation, but could he have seen it at the first inception he would have beheld a few, discrete, little vesicles or blisters rising from a clear skin. These he would no doubt have found on the face, which seems to be the favorite site. Following the case up carefully, he would observe in a day or two days' time that the fluid which these little blebs contained had become opaque and darker in color, indicating the presence of pus. Soon the pustules would begin to dry up and dark colored scabs crust over the entire face of the lesion which throughout the whole process has remained entirely discrete, showing no induration or even the redness of inflammation around the edges of the sores. The disease will run its entire course, and the number of spots may increase until the whole face is dotted over with them, but no attempt to become confluent is ever observed. The disease remains from start to finish one of purely discrete type, and this point is a valuable one when a diagnosis must be made between impetigo and eczema.

The disease shows little tendency to itch, and it is only when the scabs form that a child will make any effort to disturb the lesions with its fingers or nails. But occasionally this is the case, and as the pus contained has the power of autoinoculation we soon have well defined spots appearing on other portions of the body, most frequently on the hands.

There are a few skin diseases with which impetigo contagiosa may be confounded, but their distinction is of the simplest, eczema pustulosum, scabies, and impetigo. Eczema shows an areola of inflammation about the lesion; it is inclined to become confluent; itching is often intense; but it is not autoinoculable. Scabies is accompanied always by intense itching, especially at night; lesions are small, in large numbers and multiform, pustules, papules, and vesicles all appearing; it lasts for months; presence of burrows, and a parasite may be demonstrated; there are no constitutional symptoms. Impetigo is not communicable; it commences as pustules; lesions are deep and pustules elevated and rounded; general health is good.

The treatment is even simpler: A grain of calomel in broken doses, a saline to complete its action, and then some constitutional tonic to increase the general resistance. Externally, the treatment consists in softening the crusts with olive oil and their removal with warm water and soap. As soon as this is accomplished an ointment consisting of ten grains of ammoniated mercury to the ounce is all that usually is required to complete the cure.

Therapeutical Notes.

Styracol in Diarrhœa.—Styracol is the ether of cinnamic acid and of guaiacol. When taken into the body it decomposes, setting guaiacol at liberty. It is said to be without odor or taste, and is insoluble in water and in weak acid solutions. It has been used in persistent diarrhœas and in the first stage of tuberculosis. The dosage for an infant is one gramme a day in divided doses; older children 1.50 grammes, and for adults, one gramme four times a day.

Treatment of Warts by Magnesium Electrolysis.—Lewis Jones and J. M. Flavelle have recently published reports of three cases of warts treated by electrolysis, and the ion magnesium. A compress moistened with magnesium sulphate solution (3 per cent.) is placed on the electrode (made of metallic magnesium), or laid on the warts. If the latter are very numerous in the fingers, the entire hand may be immersed in the solution in a basin. The positive pole is used with a constant current (5 to 8 milliampères). The séances last fifteen minutes. Two are necessary at the least, separated by an interval of eight or ten days. The treatment has the advantage of being painless, clean, and rapid.—*La Clinique*, May 3rd.

Formula for Pharyngitis and Aphthous Sore Mouth.

R Tincturæ myrrhæ,20.0 grammes;
Tincturæ opii camphorati,5.0 grammes;
Mel. rosæ,30.0 grammes
M. Add to barley water 150 grammes and use as a gargle for aphthous inflammation of the mouth and throat.

Journal de médecine de Bordeaux, May 5, 1907.

Relief from Toothache.—A small piece of absorbent cotton may be introduced into the cavity of a tooth, having been first moistened with the following solution:

R Cocainæ hydrochloridi,0.25 to 0.50 gramme;
Mentholis,2.0 grammes;
Camphoræ,1.0 gramme.
M. Triturate until liquefied.

Sig. Apply to the cavity of the tooth and renew every half hour until the pain is relieved.

Robin in *Journal de médecine de Bordeaux*, May 5, 1907.

Hæmorrhage and Hæmophilia in Nephritis.—Emile Weil and Octave Claude (*Le Bulletin médical*, May 4, 1907), in a communication to the Société médicale des hôpitaux, point out the fact that among the factors of hæmorrhages which appear in the course of acute or chronic nephritis, due account must be taken of the lesions of the blood, and the retardation of coagulation, of all degrees, light to intense. They occur frequently, although up to the present time they seem to have escaped observation. The preferred treatment which these reporters had successfully employed for the arrest of dyscrasic hæmorrhages, namely, the subcutaneous and intravenous injections of fresh serum, is worthy of being applied to these hæmorrhages in nephritis. From the application of this agent favorable results may be expected.

Danger of Communication of Syphilis by the Saliva.—The danger of the use of public drinking vessels is shown in a striking manner by the inves-

tigations of L. Follet, into the bacteriology of the saliva of syphilitic patients. He was led to undertake this study by the numerous reported cases of communication of syphilis by drinking cups, musical instruments, glass blowers' tubes, court plaster moistened by saliva, etc. By the use of new methods of staining, he succeeded in finding the *Treponema pallidum* in a great proportion of syphilitics. In recent untreated cases in certain fields, he counted from two hundred to three hundred spirillæ. All of these, of course, were not the *Treponema pallidum*; but the quantity of the latter, which were found, even when there were no mucous patches in the mouth, was very great. On the other hand, he also examined the saliva of a great number of healthy persons, and the few specimens of spirilla which he found could not be mistaken for the treponema.—*Le Bulletin médical*, May 4, 1907.

Calcium Chloride in Pneumonia.—Netter, in several communications to the Société de biologie (*Le Bulletin médical*, May 4, 1907), has drawn attention to new therapeutical indications for calcium chloride. Thus, in the treatment of urticaria, he prefers the chloride, on account of its greater solubility to the lactate, which has not the bitterness of the chloride or even of the insoluble salts, which become transformed into chloride in the stomach. The dose *per diem* is from one to four grammes (gr. xv to 3j). The administration is to be kept up for eight or ten days, interrupting it, however, one day in four. Lauder Brunton uses it in acute pneumonia in doses of 0.30 to 0.60 gramme (or gr. v-x), every four hours, on account of the influence of this agent on the contractions of the heart. For the last two years, Netter has also been in the habit of giving calcium chloride to pneumonia patients when the heart appeared to be feeble, and he has always been gratified with the results. It is especially advantageous in the cases of pneumonia occurring with nephritis.

The Tonic Effects of Sea Water When Taken Internally in the Treatment of Pulmonary Phthisis.—The injection of sea water in isotonic solution having been found to increase the quantity of hydrochloric acid in the gastric juice (on account of the sodium chloride which it contains), Sellier has reported a case of phthisis in the stage of cavity in which, after on subcutaneous injection of 500 c.c. of sea water, he observed improved appetite and amelioration of the general health. J. Charles has recently reported (in the *Journal de médecine de Bordeaux*, April 21, 1907) the results of its administration in cases of phthisis by the mouth. In cases of the first stage, he observed generally an increase of appetite and access of vigor; in the second stage, the results were even more satisfactory. In the third degree the symptoms were favorably modified. Those who were without appetite were those who were benefited most by the treatment. It has also been used successfully in dyspepsia. This treatment should not be given in cases of neurotic hyposthenia, because of the disturbance attending it, and the gastralgia, which it sometimes produced.

Poisoning by Cream Cakes and Gelatin Preparations.—Saquet (*Gazette médicale de Nantes*, March 30, 1907) disputes the statement that the

poisoning by articles of food known as creams, or cream cakes, is due to the eggs that enter into their composition. In the first place, a spoiled egg would be recognized by its odor, and would not be overlooked, and, secondly, the white of such an egg could not be beaten into a froth, but would remain liquid. He thinks it more probable that the gelatin is at fault. We know that gelatin is obtained from the scrapings of the skins of animals, and that it is difficult to sterilize, because it cannot be heated above 100° C. without decomposing. In order to render gelatin fit for medical use for injecting into aneurysms, it is necessary to keep it for several days at an elevated temperature. In fact, cases of tetanus have followed subcutaneous injections of gelatin, where this precaution was not observed. When placed in culture tubes in the usual way, microbes are seen to develop. Since it is an animal product, which may or may not be clean, Saquet believes that the gelatin affords a sufficient explanation of the poisoning, because it may contain all that is necessary to produce the intoxication.

Thyreoid Medication for Certain Cases of Acute Articular Rheumatism.—H. Vincent (*Le Bulletin médical*, May 4, 1907), in a communication to the Société médicale des hôpitaux, stated that he had found in a large number (seventy-four) of cases of acute rheumatism, a symptom, which he calls the "thyreoid sign," of which the clinical demonstration is very easy. It is characterized by a tumefaction (sometimes unilateral) of the thyreoid gland, and by pain, rarely spontaneous; but always very marked when each lobe of the thyreoid is compressed between the fingers. It is not seen usually in light cases, nor in chronic or fibrous arthritis, but only in acute, febrile, articular rheumatism. The swelling of the thyreoid ordinarily follows the course of the articular fluxion, it decreases as this gets less, and it reappears, though in light form, in cases of relapse. In a certain number of cases he has seen the thyreoid sign, which had been very marked at the outset of the affection, disappear very rapidly, in spite of the persistence, and the acute character of the articular determinations. Sometimes, indeed, the body of the thyreoid would become scarcely perceptible, either on inspection or palpation. This he has come to regard as a feature of unfavorable prognosis, and indicative of a slow prolonged course, perhaps extending to several months. In other cases, after a temporary enlargement, the thyreoid body diminishes greatly in size, but the case sometimes to be attended by irregular attacks of fever, and the articular symptoms persist. In these cases, improvement is slow, and the patient becomes very anæmic and thin. The simultaneous reduction of the thyreoid gland and the articular inflammation, as the joints are restored to the normal condition, is a favorable sign, whatever interpretation is put upon this phenomenon, which recalls the changes in the volume of the spleen in a large number of infectious diseases. The author has treated a few of these prolonged cases of acute articular rheumatism accompanied by athyreoidism, with thyreoid extract. Thus far, however, the number of cases has not been sufficient to enable him to draw any conclusions as to the value of this agent in such conditions, but he considers it worthy of further trial.

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PRESIDENT BRYANT'S ADDRESS.

With the felicity of diction which we have long been accustomed to find in Dr. Bryant's utterances, he dealt in his presidential address before the American Medical Association at the fifty-eighth annual meeting, held in Atlantic City this week, with some matters that are deserving of serious thought by those who have the welfare of the association at heart. The address was entitled *The American Medical Association, its Aims and Interests*. It was a dignified and wise address, showing more concern for the achievement of the original purposes of the association than for the success of its more or less commercial undertakings.

In the founding of the association, said Dr. Bryant, there was "but one significant object in view," namely, the promotion of the science and art of medicine. The measures announced at the time as necessary to this end, so far as the association could hope to contribute to its accomplishment, were the uniting into "one compact organization" of the medical profession of the United States, the promotion of friendly intercourse among individual physicians, the safeguarding of "the material interests of the medical profession," efforts to procure advanced standards of medical education, furtherance of "the enactment and enforcement of just medical laws," the enlightenment of the people in matters of hygiene, and the presentation to the world of the practical accomplishments of scientific medicine.

The purposes thus set forth were certainly of the worthiest. The fact should not be overlooked that

they were calculated to promote, not the aggrandizement of the association itself or the interests of those only who were or might become members, but the welfare of the entire medical profession and that of the whole world. There was nothing to indicate that the association or any controlling set of men within it would ever seek to lay down rules of conduct for members of the medical profession, to go into the book publishing business beyond the publication of the association's own transactions, or to endeavor to cripple medical societies and medical journals which might venture to dissent from any oligarchical dicta put forth under the association's authority. For several years the purposes originally proclaimed, and those only, were kept steadily in view, but at subsequent times there crept in manifestations of an itching to put the entire profession under the control of the superfine consciences belonging exclusively to a few choice spirits. Dr. Bryant did not speak openly of these matters, but he gave in his address some hints which we cannot interpret otherwise than as indicating that he had in mind the perils that are likely to come about from any radical deviation from the course of action originally proclaimed by the association.

THE LABORATORY MAN AND THE PRACTITIONER.

It has seldom been the privilege of physicians to listen to such an excellent address (or "oration," as it was officially styled) as one entitled *The Relation of the Clinical Laboratory to the Practitioner of Medicine*, by Dr. James B. Herrick, of Chicago, delivered before the American Medical Association at the Atlantic City meeting this week. There is something in the cultivation of the science and art of medicine indicative of a stong proclivity on the part of the rank and file of the profession to bow down before some particular class of their professional brethren as before men of a necessarily exalted status. Many years ago the aristocratic class consisted of those who were expert in auscultation and percussion. They were succeeded by the gross pathologists and microscopists, and now the laboratory men hold the centre of the stage. There is nothing to be deprecated in such a state of things; indeed, it is only one of the many evidences of the fact that physicians hold the actual practice of their art as subordinate to the advancement of their science.

The need of cooperation between the laboratory man and the practitioner is the cardinal point of Dr. Herrick's address. The one should not maintain the finality of his findings without regard to clinical observation, and the other ought not to allow himself to lean blindly on his colleague's observa-

tions, but should show his own judgment in applying them to the case in hand. The laboratory examiner ought not to be ashamed to say, on occasion, "I don't know" or "It is impossible for any one to tell." He should admit the limitations of his knowledge and the frequent uncertainty that still exists in the interpretation of observations. No scientific man accustomed to the use of instruments of fine observation ought to hesitate to admit that he could not always be sure of the absolute accuracy of his vision. This of course applies to work with the microscope.

The laboratory worker is not usually in personal touch with the patient concerning whose case he is consulted; consequently he is apt not to feel that degree of responsibility which the practitioner cannot evade. If he is so arbitrary as not to allow himself to be swayed in the least by the history and clinical features of a case, most unfortunate consequences may ensue. For example, as Dr. Herrick remarked, a young wife's uterus may be removed for a supposed carcinoma, a limb may be sacrificed for an apparent sarcoma which turns out to have been really a gumma, or the doubtful detection of tubercle bacilli may lead to the patient's removal to a distant health resort, with the consequent breaking up of the plans and hopes of his life. Nothing could do more toward bringing laboratory diagnoses into disrepute than these decisions based on laboratory observation alone. The laboratory man should really be viewed as a consultant, and the final opinion in a case should be his and that of the attending physician jointly.

THE AMERICAN MEDICAL ASSOCIATION'S SURPLUS FUNDS.

It appears from the treasurer's report that the assets of the association amount to about a quarter of a million dollars and that last year its *Journal* made a profit of \$55,000. What should be done with all this money? Should it go on accumulating, possibly to tempt future officials to acts of dishonesty? Some of its servants are now drawing high pay, though not too high, we are willing to concede; yet the coffers are getting more and more swollen. It is difficult to conceive of any great drain upon the treasury as likely to arise under the present methods of management, and equally difficult to appreciate the need of allowing the funds to go on increasing enormously without being applied to some purpose consonant with the attainment of the association's original objects.

The British Medical Association, a smaller and less wealthy organization, as we understand it, makes considerable "scientific grants" of money—grants made for the purpose of enabling men to

enter upon systematic research in medicine. We are unable to understand why the American Medical Association should not do more than it does of the same thing. We should say that it might well appropriate \$50,000 a year to such undertakings. They would make for the advancement of medical science, which certainly is not promoted in the least by most of the association's enterprises. The association labors for many noble purposes and accomplishes a goodly proportion of them, but it does not in any great measure devote its funds to them. When the movement for the Rush monument was started, under the association's auspices, that body's resources were not so great as they are now, and the undertaking languished, being dependent on specific subscriptions. It may at any time become the general conviction of the profession that some other enterprise of the sort is incumbent on it. Why should not the American Medical Association then make a direct appropriation without waiting for the slow process of obtaining subscriptions?

The accumulation of a vast fund might be desirable in the face of contingent liabilities, such as ever confront insurance companies and savings banks, but an organization like the American Medical Association has surely little if anything of that sort to make ready for. It ought not, therefore, in our opinion, to go on building up a tremendous capital. And under the circumstances it is petty that the association should plume itself on having this year, for the first time in its history, paid all the expenses of the annual meeting—save for the entertainment of the ladies, which has still been left to the local profession.

AN AMERICAN SCHOOL OF TROPICAL MEDICINE.

Sir Patrick Manson says: "A great deal has been said about studying the diseases (of the tropics) where they arise, but the tropics, where the steaming heat knocks the energy out of the Europeans, and where you feel inclined to sleep every hour of the day, and can't look down a microscope without a drop of sweat obscuring the eye piece, is no place for study." Indeed, a locality in which the temperature and humidity are not excessive is the proper place for brain work of any kind. The success of the London School of Tropical Medicine, the Liverpool School of Tropical Medicine, and the Hamburg School of Tropical Medicine demonstrates the wisdom of selecting a temperate region for the establishment of such an institution. These remarks are prompted by an article by Dr. Isaac W. Brewer, which appeared in the *New Orleans Medical and Surgical Journal* for May, entitled *An American School of Tropical Medicine*. Shall there

be One? Where Shall it be Located? What Shall be its Organization? Dr. Brewer makes a plea for the establishment of such a school and prefers that it be situated in New Orleans.

There is no question as to the necessity of an American School of Tropical Medicine. There is a question as to whether, if such a school were established at the present time, there would be sufficient interest in diseases of the tropics to cause enough students to apply for admission to make it worth while to organize a staff. Of course, the Medical Department of the United States Navy, the Medical Department of the United States Army, and the United States Public Health and Marine Hospital Service realize the importance of instruction in tropical diseases and provide the officers of their respective corps with instruction at the schools connected with the departments, which are situated in Washington. But among the profession at large, although a goodly percentage of it practises in subtropical regions, we believe that at present there does not exist sufficient appreciation of the necessity of studying the various branches that go to make up tropical medicine as a separate course.

So far as the suitability of New Orleans for the location of a school of tropical medicine is concerned, we would point out that New Orleans is in reality a subtropical city, being situated in 29.58° north latitude. According to the report of the chief of the Weather Bureau, in 1902 the mean temperature of New Orleans was 69.4° F., but mean temperatures give an erroneous idea of the real temperature of a city. In the same report the maximum temperature recorded in New Orleans was over 80° in every month except January, February, and December. In May, June, July, August, and September the maximum temperature was over 90°. On the other hand, the minimum temperature during these same months varied from 55°, the lowest, in September, to 71°, the highest, in August. The relative humidity varied from 90°, the highest, in November, to 64°, the lowest, in June. The total precipitation for the year was 41.61 inches. It may appear to some that, unless the five months in the year from May to September inclusive are discarded as study months, New Orleans would not be an appropriate place for the establishment of the school.

It may be thought that one of the northern cities, for example, New York and Philadelphia, would be more suitable for the foundation of such a school when the time is ripe. A greater portion of the year is suitable for study, and library facilities and general medical facilities are more extensive in both of these places. Furthermore, the amount of material that could be obtained at both of these ports for clinical instruction in tropical medicine may be

illustrated by the statement that from November 18 to December 31, 1906, 433 vessels from tropical and subtropical ports were entered at the custom house in New York, and 133 vessels at the custom house in Philadelphia. From this point of view New York might seem to be the proper place for the school. We have no doubt that in time the American Society of Tropical Medicine, which is endeavoring gradually to increase the interest in tropical diseases in this country, will take up the question and decide it upon its merits.

STEGOMYIA CALOPUS.

The Bureau of Entomology of the Department of Agriculture and the *Public Health Reports* have adopted the name *Stegomyia calopus* (Meigen, 1818; Blanchard, 1905) for the yellow fever mosquito. As pointed out in *Public Health Reports* for April 5th, this change is made in accordance with the rules of the International Commission of Zoological Nomenclature, of which Professor R. Blanchard is president. The name *Culex fasciatus* was first used in 1789, and later in 1804, for a mosquito which is not identical with the yellow fever mosquito. *Culex calopus* is the name first properly used for the yellow fever mosquito, and this, upon transfer to the genus *stegomyia*, becomes *Stegomyia calopus*.

A MEDICAL TOM HOOD.

Surgeon John Godfrey, of the United States Public Health and Marine Hospital Service, has found time to produce a little volume calculated to amuse his professional brethren.¹ The contents consist almost entirely of verses which are highly suggestive of the productions of Thomas Hood. The little volume closes with a farce which is exceedingly amusing. It sets forth the dealings of a clever quack with some of his patients and of those patients with each other and with the office boy. The rhymes, too, have more or less to do with medicine. In many places the verbal combinations are so grotesque as to be very entertaining.

THE QUESTION OF THE CANTEEN.

It is very much to be regretted, we think, that the House of Delegates of the American Medical Association has just dodged the question of the restoration of the army canteen, alleging that it was outside of the field of its activities. If ever there was a public question on which the medical profession ought to make itself heard, it seems to us that this is one. If a debate was threatened, it should have been allowed, for certainly no important *non possumus* will satisfy the profession, which is not yet quite ready to be interpreted as having no mind of its own on such a question.

¹ *Verse and Prose*. By John Godfrey, Surgeon, P. H. & M. H. S. Target. Richmond & Backus Company, 1907.

The Atlantic City Meeting of the American Medical Association.

THE MEETING REVIEWED

The fifty-eighth annual session of the American Medical Association was held in Atlantic City, New Jersey, on June 4th, 5th, 6th, and 7th. The delegates and members began to arrive on Monday, June 3rd, and by Wednesday, June 5th, at noon, a large number had registered at the registry bureau on Young's Pier. It is, of course, unnecessary to make the statement that hotel accommodations were ample for all who attended the meeting. The presence of a few thousand additional people scarcely causes comment in a place in which, on a busy day in midsummer, 50,000 transients are easily cared for.

The distinguished foreigners present included Professor Albert Kocher, of Berne, Switzerland, who took part in the discussion on exophthalmic goitre; Dr. Arthur R. Cushny, of London; Professor E. Küster, of Marburg; Dr. Hobart J. Peterson, of London; Professor K. G. Lennander, of Upsala, Sweden; Professor Gustav Killian, of Freiburg; and Professor T. Gluck, of Berlin.

The scientific business, as represented by the work of the various sections, was, on the whole, good. There were few absentees and the programmes were not overcrowded. It seemed to be the unanimous opinion that the discussions were more than usually pointed and that they formed additions to our knowledge of the subjects.

In the Section in Practice of Medicine the notable feature was a joint meeting with the Sections in Surgery, Pathology, and Physiology for the discussion of exophthalmic goitre. The subject was considered from the point of view of physiology by Dr. S. P. Beebe, of New York; from the viewpoint of pathology by Dr. W. G. MacCallum, of Baltimore; the question of diagnosis was discussed by Dr. Lewellys F. Barker, of Baltimore; the medical treatment was discussed by Dr. Robert B. Preble, of Chicago; and the surgical treatment was considered by Professor Kocher.

In a joint meeting with the Section in Pharmacology and Therapeutics, the Section in Practice of Medicine considered the ætiology of acute articular rheumatism, the symptomatology and diagnosis of acute articular rheumatism, and the cardiac complications of acute articular rheumatism. Dr. Rufus I. Cole, of Baltimore; Dr. Philip King Brown, of San Francisco; and Dr. Alexander Lambert, of New York, read the formal papers.

In the Section in Surgery and Anatomy a general discussion on ileus was taken part in by Professor Lennander; Dr. R. D. McClure, of Baltimore; Dr. Walter B. Cannon and Dr. F. T. Murphy, of Boston; Dr. John B. Roberts, of Philadelphia; Dr. Frank Martin, of Baltimore; Dr. John C. Munro, of Boston; and Dr. William J. Mayo, of Rochester, Minnesota.

In the Section in Ophthalmology last year's procedure was repeated. The members were furnished in advance with a book in which the papers to be read were published in full. Each writer was allowed five minutes in which to summarize the points in his paper and to introduce the discussion. Sub-

sequent speakers were allowed five minutes, except the member who had been appointed to open the discussion, who was allowed ten minutes. In this manner the section was able to cover a long programme promptly, and it may be recommended, not only to other sections of the American Medical Association, but also to the scientific societies whose members so often are obliged to listen to long statistical papers.

In the Section in Hygiene and Sanitary Science there were general discussions on the hygiene of the family in relation to the productive energy and health of the offspring, on pure milk, and on tuberculosis.

Failure to mention particular subjects discussed in other sections must not be implied to indicate inferiority, but merely to be forced by lack of space.

The various subjects debated in the House of Delegates will be found reported in sufficient detail at the end of this review. The proceedings of this body are most important, although the average member of the association is wearied by the detail, and, consequently, leaves the management of affairs in the hands of those with an aptitude and a liking for administration work. These men are thereupon denominated politicians. We have the greatest respect for a politician, defining him as above. We hope that the politicians who attend to the details of administration of the American Medical Association will always be honorable, upright, and broad minded. Under such conditions we should call them statesmen. The business of the House was transacted in a prompt and orderly manner. There was some objection to recommending the reestablishment of the canteen, and the resolution was consequently tabled.

The social gatherings connected with the meeting were well attended. In addition to the usual subscription dinners given by the various sections, almost every medical college in the East held an alumni reunion. Those of the medical department of the University of Pennsylvania, of the Jefferson Medical College, and of the Medico-Chirurgical College of Philadelphia had the largest attendance, as was to be expected from the proximity of Philadelphia to the place of meeting.

The reception to the president was held on Wednesday evening in the Music Hall of the Steel Pier. There was dancing following the reception. The Atlantic City life guards gave an exhibition drill on Tuesday afternoon, which was interesting even to those who were brought up on the seashore, and doubly so to those whose acquaintance with the sea was made then for the first time. The hauling of the fish net was also a source of much interest. There was a ladies' reception in the Marlborough-Blenheim on Wednesday, also a yachting party and musicale for the ladies at the Atlantic City Yacht Club House on Thursday afternoon, a musicale, a song recital, and two vaudeville performances and smokers on Thursday evening. The piers, the Country Club House, and the Atlantic City Yacht Club House were open to members and ladies dur-

ing the meeting. Consequently, when one became tired of shop talk, as represented by the meetings of the sections, he could easily turn to some light and interesting discussion. Indeed, the social features of the meetings of the American Medical Association, with the opportunities of meeting old friends and making new ones, are among the most delightful incidents of the week.

The scientific exhibit was up to its usual standard. We expressed ourselves last year as to the futility of calling attention to particular exhibits where all are so worthy of praise. We again take this opportunity of congratulating the director, Dr. Frank B. Wynn, of Indianapolis, on the success of his endeavors.

The commercial exhibit was of the usual character, except that, as at the Boston meeting, the man in the booth giving out samples and the man with the basket taking them in were less in evidence than usual.

Up to five o'clock of Wednesday, June 5th, the total registration amounted to 3,510. The afternoon tea for the ladies was to have been held on Wednesday afternoon on the plaza of the Marlborough-Blenheim, but a shower came up about four o'clock and lasted for an hour, having driven the ladies indoors. However, the gowns were very gay, and in spite of the rain the function was quite bright. The weather cleared in time for the president's reception, at 8:30.

PROCEEDINGS OF THE HOUSE OF DELEGATES

The Retiring President's Address.—The House of Delegates was called to order at 10:15 a. m. by the president, Dr. WILLIAM J. MAYO, of Rochester, Minn. The president addressed the House, directing its attention to some of the more important matters to come before it for decision. He considered it fortunate that as president he was relieved of the business control of the association by the Board of Trustees. He expressed his admiration for the work of the general secretary, Dr. George H. Simmons, of Chicago. He commended the conduct of the *Journal of the Association*, calling attention to the profit of over fifty thousand dollars which it had earned during the past year, and expressed his gratification at its high standing. He referred to the ability and efficiency of Dr. J. N. McCormack, of Bowling Green, Kentucky, as chairman of the Committee on Organization. The president expressed his appreciation of the wise control of the affairs of the association maintained by the Board of Trustees, which had made the American Medical Association the largest and most powerful medical organization in the world. He called attention to the report of the Committee on Medical Education, emphasizing the evil of medical colleges conducted for private gain, which might be corrected by the moral force of the association. The excellent work of the Council on Pharmacy and Chemistry in its campaign against proprietary medicines should have, he said, the encouragement and support of the members of the association. The question of fees for life insurance examinations was one that affected at least ten per cent. of the profession. The Committee on Insurance would report on the subject. The president recommended that a committee be created to expedite the business of the House of Delegates in order to save time to be devoted to the other work of the association.

The Report of the General Secretary showed a net gain in membership during the past year of 3,879, in spite of the discontinuance of 2,135 memberships for various causes. On May 1, 1907, the members of the

association numbered 27,515. The secretary reported the appointment since the last session of Committees on Tropical Medicine and on Ophthalmia Neonatorum, constituted as follows:—

Committee on Tropical Medicine.—Dr. Ludvig Hektoen, Chicago (chairman); Dr. Maximilian Herzog, Chicago; Dr. George Dock, Ann Arbor, Mich.; Dr. L. F. Barker, Baltimore; Colonel F. C. Gorgas, Panama. **Committee on Ophthalmia Neonatorum.**—Dr. F. P. Lewis, Buffalo (chairman); Dr. J. Clifton Edgar, New York; Dr. F. F. Westbrook, Minneapolis.

The secretary suggested amendment of the by-laws whereby persons eligible to full membership might be more effectually excluded from associate membership, while permitting proper candidates for such associate membership to be admitted more easily. He reported that the relations between his office and the secretaries of the various constituent associations were becoming each year more intimate. The *Councillors' Bulletin* had been issued at intervals during the year, attaining a circulation of nearly 5,000. Over 60,000 personal biographical reports, obtained primarily for the *Directory*, had been used in compiling the biographical card index. The correspondence carried on with physicians of Puerto Rico, looking toward the organization of a constituent association, had not yet borne fruit.

Report of the Board of Trustees.—Dr. T. J. HAPPEL, of Tennessee, chairman, presented the Trustees' report for the last calendar year, detailing the financial condition of the association and showing the excess of assets over liabilities to be \$269,661.89, with a net revenue for the year of \$31,915.10. The *Journal's* circulation was shown to have been more than quadrupled since 1899, and its net profit for the year 1906 was \$55,000. Despite the rigid exclusion of advertising matter not approved by the Council on Pharmacy and Chemistry, a net gain of nearly \$3,000 had been made in that department. Since the purchase of the quarters occupied by the association the annual receipts from rents had reached \$5,000, whereas a like amount had previously been expended for the rental of its space. The first edition of the *Directory* having been completed, money invested in it was now coming back to the association. To put the association on a sound business basis, however, the establishment of a sinking fund of not less than \$150,000 was considered imperative. For the first time in the history of the association it had met the entire expenses of its convention (the present one), the only tax upon the local committee being the entertainment of the ladies attending the session. Also the association had this year attempted to control the manufacturers' exhibits on the basis of such exhibits being received as would be admitted to the advertising pages of the *Journal*. The work of the Council on Pharmacy and Chemistry, upon which many had looked askance as an attempt at discrimination between manufacturers, was now attracting the attention of the whole medical profession. Nothing that was intended to reach the respectable portion of the medical profession now sought to avoid the scrutiny of that council. Its work should have the hearty support, not only of the House of Delegates, but also of every member of the association and every honest practitioner of medicine. The Committees on Medical Legislation and Medical Education, respectively, had pursued their duties effectually, and full reports of their work would be presented to the House. The Board of Trustees, at its annual meeting, had extended a vote of thanks to Dr. George H. Simmons, the editor and general manager of the *Journal*; to whose untiring labors and unbounded zeal so much of the results of the past year's work had been due.

Report of the Committee on the Senn Medal.—The secretary read the report of Dr. A. F. JONAS, of Omaha, chairman. The medal was to have been awarded for

some absolutely new method of treating disease, or for original research. Only two theses had been presented, neither of which had sufficient merit to justify an award of the medal. It was recommended that a permanent notice be inserted in the *Journal* describing the conditions under which the medal would be awarded.

Report of the Council on Medical Education.—Dr. ARTHUR N. BEVAN, of Chicago, chairman, said that in 1904 the Council on Medical Education had been created to supersede the work of committees on education, which previous to that time had had less success than was desired, because the membership was constantly changing. It was the wish of the council to have organized a permanent national bureau of medical education with fixed headquarters and an adequate clerical force. Such a bureau, while having no legal powers, would be of great service in giving publicity to the evidence which it might collect, thus securing needed reforms. In April, 1905, the council had a conference with representatives of the State boards. As a result of this conference the council formulated an ideal standard of preliminary educational requirements to work for in the future, and a minimum standard for the time being, the latter being a preliminary education sufficient to enable the student to enter the freshman class of recognized universities, such proficiency being determined upon by a State official. The professional requirement should be graduation from an approved medical school requiring a four years' course of at least thirty weeks of thirty hours each in each year, and finally the passing of an examination for licensure before a State board. At a second annual conference, in May, 1906, was considered the report of the standing of medical schools, based on the showing made by their graduates before State boards. The schools were divided into four classes: First, those having less than ten per cent. of rejections; second, those having ten to twenty per cent. of rejections; third, those who had more than twenty per cent.; and fourth, a list of schools, unclassified, because of the possession of insufficient data. The council expected that the annual publication of such tables would be of much service in elevating medical standards. It was in the power of the State boards and the organized profession as represented by the American Medical Association to place American medicine on an acceptable plane. The committee showed the results of its correspondence with various colleges on the subject of a higher entrance requirement, the details of which were most encouraging. It also foresaw the discontinuance of most schools conducted for the purpose of profit. The weakest point in the facilities of medical schools was considered to be the lack of laboratories and equipment for teaching the fundamental branches. The need was felt also of trained instructors paid to devote their entire time to teaching and research. In June of last year only seven medical colleges in the country were requiring one or more years of work in a college of arts for admission. Now, through the efforts of the council, there were forty-nine which either already required or would demand by January 1, 1910, one or more years of college work. A like gain had been made in the requirement of graduation as a qualification to practise medicine. A year ago thirteen States still allowed nongraduates to obtain licenses. The council had succeeded in having this number reduced to six. A great advance had likewise been made in interstate reciprocity. Another encouraging feature had been the appointment in forty-five States of State committees on medical education, which in sev-

etary medicine trust and the manufacturers of spurious whiskey and of adulterated foods generally, had been followed through both Houses, and despite the strenuous efforts of its opponents the Army bill passed June 29, 1906, and the next day it became law. This achievement, according to the public declaration of Senator Heyburn, the author of the measure, was due, in great part, to the powerful and beneficent influence of the American Medical Association. The case of Dr. James Carroll, whose invalidism had dated from his service in the Cuban yellow fever campaign, was finally brought to a successful issue through the efforts of the committee, acting with the National Legislative Council, and the rank of major and surgeon was accorded to Major Carroll in February of the present year. The committee regretted that Dr. Carroll might not have had a more full recognition of his services and of the martyrdom that he had in consequence sustained. The generous spirit of Congress, however, had been an evidence of its intelligent gratitude. The effort to secure a suitable general hospital for the army had been crowned with moderate success, \$200,000 having been appropriated for the purpose. The Army Medical Reorganization bill was first introduced in the Fifty-eighth Congress, passed the Senate, and was reported out of committee in the House. At this point, however, it encountered the opposition of Speaker Cannon, who arbitrarily excluded it from consideration on the floor. In the Fifty-ninth Congress it had no better success. The committee, in company with the National Legislative Council, called upon the speaker, but the interview was far from satisfactory, revealing as it did on Mr. Cannon's part a deplorable lack of appreciation, not only of the Medical Corps of the Army in particular, but of the medical profession in general. While the bill would be again introduced at the next session of Congress, the committee felt little hope of its success so long as Mr. Cannon should be vested with the power to prevent its consideration. The committee had received information that American graduates in Hong Kong were discriminated against under the terms of the Anglo-Japanese treaty. An inquiry as to the facts through diplomatic channels had not been completed, but the committee understood that the practice of medicine in Hong Kong was regulated by the Imperial Medical Practice act of Great Britain, under the terms of which a five years' course of medical instruction was made a prerequisite for licensure, and that no discrimination existed between graduates of various nationalities. The committee pointed out the relative position among the nations imposed upon the American medical profession in consequence of the relatively short curriculum now in vogue in this country. The committee recalled the efforts of the association when the Panama Canal Commission was first organized to seek proper recognition of the sanitary problems involved. The President did not then feel at liberty to appoint Dr. Gorgas as a member of the commission, as urged by the association. The agitation, however, was continued, notwithstanding some unpleasant incidents, with the result that the President, not long ago, appointed Colonel Gorgas a full member of the commission, in special charge of sanitation. Only recently had the Medical Corps of the Army had representation in that most important governing body, the General Staff. In the District of Columbia it was sought to regulate the practice of licensed osteopathic physicians, and the bill had, in the absence of a quorum, been reported by Senator Foraker and passed by the Senate. At this point the committee took up the matter, and found that the object of the bill was to legalize a medical cult on an educational basis of twenty-seven months' study of only a partial medical curriculum. Through the activity of Dr. A. S. Barchfeld, member of Congress from Pennsylvania, this measure was de-

Report of the Committee on Medical Legislation.—Dr. C. A. L. REED, of Cincinnati, chairman, summarized the activities of the committee during the last year. The Pure Food and Drugs bill, antagonized by the pro-

feated. Notwithstanding the efforts of the committee, the restoration of the canteen in the army was not yet an accomplished fact. The committee discussed the status of the project to establish a national department of public health with representation in the cabinet. The matter was now in the hands of a popular "committee of one hundred." Surgeon General Rixey, it was understood, would shortly seek the establishment of a corps of trained nurses for the navy. The passage of uniform State laws relating to pure food and drugs had had the ardent support of the committee, but, limited by the resources at its command, it had restricted its activities chiefly to questions of strictly national concern. Dr. Reed paid a tribute to the representation in Congress of the medical profession in the persons of Dr. Gallinger, senator from New Hampshire, and Dr. Burton, of Delaware, and Dr. Samuels and Dr. Barchfeld, of Pennsylvania.

Dr. FRANK BILLINGS, of Chicago, presented a resolution requesting the director of the United States Census to undertake in the next census the enumeration of deformed and ruptured children in the United States.

The Report of the Committee on Organization.—Dr. J. N. McCORMACK, of Bowling Green, Ky., said that since his last report, at the Boston meeting, he had visited several States, conferring with their officers and in some cases addressing the legislatures. He pointed out the need of more fostering care of county societies, which for lack of sufficient enthusiasm, were drifting into a habit of mere textbook essays. To offset and overcome this tendency, the committee favored a system of postgraduate work which might be elaborated into a plan covering a four years' review course of study adapted to the need of the county societies. The committee hoped that the matter would receive the careful attention of the House of Delegates. Many practising physicians did not attend any association meetings whatsoever. For such men the scheme outlined would be of the greatest benefit. Some expense would necessarily be involved, to meet which an appropriation of \$600 or thereabouts, was suggested. Touching upon the attitude of certain interests in antagonism to the best interests of the profession in the patent medicine campaign, the committee commended to the House those journals making true efforts to free their columns from objectionable matter. The committee was of the opinion that the House would have to consider seriously the attitude which the medical profession should take toward the druggist, cooperation with whom had suffered in the recent clash of interests over drug matters.

Dr. McCORMACK presented a second report from the Committee on the Organization of Branch Associations. It proposed the formation of seven branches to cover the entire country, comprising respectively the North Atlantic States, the Atlantic Coast, the Gulf, the Mississippi Valley, Northwestern, Southwestern, and Pacific Coast and Mountain branches. The form of the constitution and by-laws suggested should provide for purely voluntary membership, and the meetings should be held in the fall, as near as might be midway between the meetings of the national association. The meetings of the branch associations would be held successively in the different States comprised in the division, and should be coincident in time and place with those of the respective State bodies. The committee realized that it might be several years before such an organization was completed. Many formal applications, however, had been pending for some years. Rather than increasing the total number of societies, this plan would tend, in fact, to diminish them, and would provide an opportunity for younger men, crowded out on account of the rapid growth of the national association, to take a more active part. Membership should be limited to members of the respective State and county societies.

Report of the Committee on Ophthalmia Neonatorum.

—Dr. F. PARK LEWIS, of Buffalo, chairman, said the committee had accumulated a vast amount of scientific material which could not be presented to the House. The report summarized the statistics of blindness in the United States, showing the lamentable frequency of preventable blindness. The committee had been appointed, not to determine the relative efficiency of different methods of procedure, but to solve the problem of how to get that done which was known to be effective. The neglect of the subject on the part of the States was shown by the fact that last year nearly forty-four thousand mothers in Greater New York were attended by midwives who had no legal status, and over whom no adequate supervision was exercised. The same lack of responsibility was general throughout the country. Effective measures required a popular understanding of the dangers and prophylaxis of the disease. The committee was unwilling by itself to recommend a detailed plan of procedure. The importance and timeliness of the subject had been recognized by the appointment of committees on ophthalmia neonatorum by the Academy of Ophthalmology and Otolaryngology and the American Ophthalmological Society. The committee therefore recommended that its work be continued, and that it be permitted to collaborate with the chairmen of the Sections in Ophthalmology, Obstetrics, and Hygiene and Sanitary Science, and as the responsibility must rest on State boards of health for ultimate solution, it further recommended that the Conference of State and Provincial Boards of Health and the American Public Health Association be invited to appoint committees to cooperate with it and those appointed by the above named societies in effecting a plan; and, further, that the health officer of each State or Federal Territory and the president of each State medical society be invited to cooperate in carrying these procedures into effect throughout the United States. On motion, the report of the committee was accepted and its recommendations were directed to be carried out.

The Report of the Committee on a Section in Tropical Medicine.—The secretary read a communication from Dr. Ludvig Hektoen, of Chicago, chairman, to the effect that the committee was not in a position to make any report. The committee was continued.

The Report of the Committee on a Plan of Organization of a Department of Public Instruction.—Dr. JOHN G. CLARK, of Philadelphia, chairman, remarked that in recent years the world at large had been brought more and more, through popular channels of publication, into touch with all the sciences. The layman, therefore, had had an opportunity of knowing what was occurring in various branches of scientific work, with the exception of medicine, which field it had been difficult, largely through ethical limitations, to open to him. Leading editors had informed the committee of the difficulty they had in securing accurate information from trustworthy sources on medical subjects of vital interest to the general public. To enlist the assistance of the citizen who, through individual effort and through the legal regulation of evils which the profession was frequently combating almost unaided, was the purpose the committee desired to effect. This might be accomplished by supplying the community at large with established facts regarding matters of general moment and public health, and this under the auspices of the American Medical Association. The committee had availed itself of the assistance of many noted educators and publicists. As a result of its study, the committee concluded that the work should take four general directions: First, the publication of suitable articles through the public press; secondly, the distribution through a central bureau of suitable articles in pamphlet form to the public; thirdly, the organization

of popular interest, it has been the policy, but fourthly, dissemination by circular letters of matters of general interest, which latter might be given the first method might be circulated needful information regarding local or general epidemics and warnings as to the prevention of sunstroke during the stress of an excessive heat wave, which latter might be given in conjunction with the weather report. The pamphlet idea would be applicable to matters to be preserved, on such subjects as typhoid and scarlet fevers and other contagious diseases. Popular lectures on medical subjects had already been started by the Harvard Medical School, and the attendance at the opening lectures promised a good result. The discussion of such subjects as venereal questions, cancer of the uterus, etc., the committee would confine, because of its private nature, to the medical profession. Circular letters on kindred subjects would prevent professional lethargy. The committee proposed the organization of a Board of Public Education composed of seven representatives to be appointed by the president of the American Medical Association, the tenure of office to be so arranged as to preserve a uniform continuity of purpose. It would be necessary to have a paid secretary to attend to editorial and executive work. The committee was disposed to recommend that the publications should have the authority of the board, but for ethical reasons should not bear the signature of the author. In consideration of the expense necessarily incident to the work, an appropriation of \$3,500 a year was suggested as sufficient, at least, to inaugurate the scheme, it being the hope of the committee that a work of such far reaching value might command the interest of some philanthropist, who might endow a board of this character with funds to give it the broadest scope.

The report was referred to the Committee on Hygiene and Sanitation for report after conference with the Board of Trustees as to the probable availability of the necessary appropriation.

Dr. CRAIG proposed an amendment to the by-laws to accomplish the end of public instruction on medical subjects.

Dr. DENSLOW LEWIS, of Chicago, offered a resolution looking to the relief from present restrictive legislation on the mailability of literature on sexual hygiene, venereal prophyllaxis, and related matters.

Members and Associate Members.—A favorable report of the Reference Committee on Constitution and By-Laws was presented by Dr. George W. Guthrie, of Wilkes-Barre, Pa., chairman, and amendments were adopted providing that the admission to the association of dental and pharmaceutical members should be subject to confirmation by the House of Delegates; confining associate membership to representative teachers and students of the allied sciences resident in the United States and not eligible to regular membership, the admission of such members to be on the recommendation of the officers of a section and on election by the House of Delegates; associate members to enjoy the same privileges and be subject to the same conditions as regular members. The same class of persons, together with distinguished physicians of foreign countries, might become guests of the association, on invitation by the general officers or the officers of a section, to attend the annual session and to take part in the scientific work. The connection of such guests with the association would terminate with the close of the annual session to which they were invited. Another amendment favorably reported and adopted, provided that no constituent association should be represented in the House of Delegates by a member of the Board of Trustees.

The committee reported unfavorably upon two amendments proposed by Dr. Grosvenor, of New York, the former requiring the consideration seriatim

of all amendments presented to the House of Delegates, retaining more than one proposition, the other requiring that in balloting for elective officers and for the place of residence of members of the House of Delegates should cast his own ballot. Dr. Grosvenor presented his views upon both propositions at some length. Other members voiced the opinion that to adopt the first amendment would be seriously to cripple the House in its capacity for the rapid transaction of business, while the sacredness of the ballot was sufficiently conserved by the requirement of unanimous consent for a vote under suspension of the rules. The report of the committee was adopted and both amendments were defeated.

The Report of the Committee on Scientific Research.

The secretary read a report from the chairman of the committee, Dr. ALFRED STENGEL, of Philadelphia, showing that grants had been made to four physicians for the year 1907, with an allotment of \$550. On motion the report was accepted and referred to the trustees.

Dr. G. W. GUTHRIE, of Pennsylvania, chairman of the Judicial Council, said that the council had no report to make at this session.

Report of the Committee on the Davis Memorial.

Dr. H. O. MARCY, of Boston, chairman, reported the contributions which the committee had received during the last year, and hoped that during the next twelve months greater progress might be made. The committee asked that it be continued. The report was adopted.

The Reference Committee reported favorably the resolution of Dr. Billings, of Chicago, requesting an enumeration in the next census of ruptured and crippled children in the United States, and the resolution was adopted without objection.

The report of the Committee on a Board of Public Instruction was referred back to the House by the Reference Committee with a favorable recommendation, with the reservation of the portions of the report relating to the appropriation of money, and recommending that the question of the publication of the authorship of contributions for popular distribution be placed before the House of Delegates for decision. The report was adopted.

The Reference Committee on Constitution and By-Laws reported favorably an amendment creating a Board of Public Instruction, to consist of seven members, appointed by the chair, whose term of office should be four years, respectively, save for briefer terms for five members as at first organized.

The resolution offered the previous day by Dr. Lewis, of Chicago, with reference to the proper education of the public respecting sexual matters, was recommended by the Reference Committee to be referred to the Board of Public Instruction. The recommendation was adopted.

The recommendation that a permanent advertisement be placed in the *Journal*, showing the conditions under which the Senn Medal would be awarded, made by the Committee on the Senn Medal, was considered by the Reference Committee a proper matter for the consideration of the Executive Committee of the Section in Surgery. It was so referred.

The report of the Committee on Medical Legislation was analyzed and commended by the Reference Committee, which recommended that the House repeat its endorsement of the bill to reorganize the Medical Department of the Army, and that it memorialize Congress for the restoration of the army canteen. The latter proposition was made the subject of a general discussion covering considerable time, Dr. Grosvenor, of New York, believing, with Dr. Rees, of the same State, that the canteen should not be restored, while Major Richards, of the army, made clear the serious results which had occurred to the enlisted men since

the abolition of the canteen. The sense of the House developed to be that the question was not germane to its activities. The report of the Reference Committee was finally accepted, with the reservation that the House of Delegates declined to express any opinion upon the subject of the canteen.

Report of the Committee on Insurance.—Dr. JOHN H. MUSSEY, of Philadelphia, chairman, read a report from the committee published in December of last year, wherein had been summed up the status of the controversy between the life insurance companies and the examiners with reference to a proper examination fee. The results of the conferences between the committee and the officers of the great New York companies had not been definite. The recent economies appeared to have been confined largely to the medical departments, which had escaped any stain in the recent disclosures of insurance methods. The New York Life Insurance Company had reduced its fee from five dollars to three dollars eleven years ago, and the Equitable and Mutual Companies refused to restore their fees to the higher mark without similar action by the New York Life. The committee was convinced that the minimum fee for examination should be five dollars. Having nothing further to report, the committee asked to be discharged. A resolution was presented by Dr. Work, of Colorado, expressing approbation of the work of the Committee on Insurance, and urging upon county societies the desirability of action in accordance with its recommendations. This resolution was referred to the proper committee.

The announcement was made by Dr. Billings, of Chicago, that Dr. Mussey, of Philadelphia, had been appointed chairman of the American Committee of the International Congress to be held in Buda Pest two years hence. He moved the confirmation by the House of Delegates of Dr. Mussey's appointment. The motion was adopted.

Dr. BRISTOW, of New York, offered a resolution providing for a committee of five on nomenclature and classification of disease, to cooperate with committees from other bodies, in order that a suitable delegation might be sent to the Paris Commission in 1909 for the revision of the international classification of causes of death. The resolution was adopted.

A resolution aimed at the eradication of rabies was offered by Dr. Richard Cabot, of Boston, and referred to the appropriate committee.

Report of the Reference Committee on Section Work.

—As the Senn Medal was a surgical question the committee recommended that it be referred to the Executive Committee of the Section on Surgery. The House of Delegates concurred in this report and the question was so referred.

The committee to which had been referred the resolution of Dr. R. C. Cabot of Boston as to rabies recommended acquiescence in the resolution which should be transmitted to the Committee on Medical Legislation. It was proposed, that a resolution be adopted leaving the control of the disease to the Bureau of Animal Industry at Washington, that the committee act in harmony with that bureau, and that public instruction relative to the disease be left in the hands of the Board of Public Instruction. The report was adopted.

Report of the Committee on Scientific Exhibit.

—Dr. Frank B. Wynn, of Indianapolis, Ind., as chairman of this committee, remarked that the first scientific exhibit was held at the Atlantic City meeting of 1900. It was now seven years since these exhibits had been installed and they had proved of great practical utility. A great deal was hoped from the future. He recommended that, in recognition of conspicuous service, neatly engraved certificates of award should be given to the three laboratories or institutions presenting the best exhibits, and, to encourage original investigations, that

a gold medal be awarded for the best exhibit of original research. The resolution was adopted.

The Report of the Committee of Officers.—Dr. P. M. Jones, of California, as secretary of the committee, read the resolutions. The report stated that the committee indorsed the opposition to certain physicians in organizing and conducting incompetent medical schools. It commended the work of the Council on Pharmacy and Chemistry, strongly recommending that the members of the association confine their prescriptions to articles contained in the *United States Pharmacopæia* or the *National Formulary* or such as had been approved by the council. The committee believed that a minimum fee of five dollars for life insurance examinations would be just and fair, and it thought that the present conditions would eventually be amicably settled. The committee commended the manner in which the Board of Trustees had conducted the affairs of the association. The statement of audit was sufficiently definite and comprehensive, and it would be unwise and poor business policy to make public more of the business details. It considered the publication of the *Directory* of the greatest value to the association and the entire medical profession.

At this point a long discussion occurred as to the sufficiency of the report of the Auditing Committee, several members contending that a more detailed report should be made. Dr. Harris replied on behalf of the trustees, saying the question had been studied most carefully, and they had adopted the method used by the largest business houses in the country.

Upon motion of Dr. McMurtry, of Louisville, a vote of confidence was tendered Dr. Simmons for his honest, faithful, and efficient services.

The committee recommended that Dr. McCormack be requested to continue his work, and that an appropriation of six hundred dollars be made for the purpose. The committee then offered a resolution most earnestly requesting all medical journals to refuse to aid in promoting the sale of preparations which had not been approved by the council by refusing advertising space to such preparations, and requesting the moral and financial support of the members for those medical journals, whether privately owned or controlled by medical organizations, which disregarded commercialism and stood firm for honesty and right dealing. The report was adopted as a whole.

Report of the Committee on Medical Education.

Dr. Lund, as chairman of the committee, specifically indorsed the compilation of tables showing the standing of medical schools. He remarked that while the House of Delegates still adhered to the preliminary requirement of a high school course of four years, it believed that as soon as feasible the requirement should include a knowledge of physics, chemistry, and biology. The committee recommended that night schools should not be held in good standing before the association. It thought that the licensing boards of the States and not the medical schools should determine preliminary qualification. The committee favored the rapid extension of reciprocity. The report was adopted.

The Reference Committee to which was referred the report of the committee on the Davis Memorial requested the House of Delegates to refer the request for an appropriation of five thousand dollars by the association to the Board of Trustees. This request was so referred. The question was taken up later on. Dr. Thomas J. Happel, of Tennessee, said that the request for an appropriation of five thousand dollars for the Davis Memorial had been referred to the Board of Trustees without recommendation by the House. The board did not wish to take the responsibility, and asked for an expression from the House. After considerable discussion, it was finally decided to let the question lay over until next year.

Officers.—The following officers were elected:

President, Dr. Herbert L. Burrell, Boston.
Vice-Presidents, Dr. Edwin Walker, Evansville, Ind.; the Honorable Hiram R. Button, M. C., Delaware; Dr. George W. Crile, Cleveland, O.; Dr. W. Blair Stewart, Atlantic City, N. J.
Secretary, Dr. George H. Simmons, Chicago, Ill.
Treasurer, Dr. Frank Billings, Chicago, Ill.
Trustees, Dr. T. J. Happel, of Trenton, Tenn.; Dr. W. W. Grant, of Denver, Col.; Dr. Philip Marvel, of Atlantic City, N. J.

The meeting place for the next annual session is Chicago.

News Items.

Change of Address.—Dr. Joseph W. H. ... of Market Street, Jersey City, N. J.

The Honorary Degree of LL. D. has been conferred on Dr. William T. Councilman, of Boston, by the University of Maryland.

Personal.—Sir Victor Horsley and Sir A. E. Wright, of London, were elected honorary members of the American Academy of Medicine, at a meeting held at Atlantic City on May 31.

The Philadelphia Alumni Association of the Medical Department of the University of Pennsylvania held one of its quarterly smokers at Atlantic City, on Tuesday evening, June 4.

Foreign Personal.—Dr. August Bier, of Bonn, formerly assistant to von Esmarch, of Kiel, and subsequently professor of surgery at Greifswald, has been called to the chair of surgery at the University of Berlin, to succeed the late Professor von Bergmann.

The Annual Meeting of the Medical Jurisprudence Society of Philadelphia was held on Monday evening, May 27th, and the following officers were elected for the ensuing year; President, Dr. W. M. L. Coplin; vice-presidents, Mr. W. W. Smithers and Dr. A. B. Hirsh; secretary, Dr. Henry Leffman; treasurer, Mr. Paschal H. Coggins.

Consolidation of Three Paris Medical Societies.—*The Société médicale et de chirurgie, comme the Société de médecine de Paris*, and the *Société médico-chirurgicale* have combined together under the title of *Société de médecine*. The first meeting of the new society was held on May 14th, under the presidency of Dr. Paul Coudray.

The Cooper Hospital Training School for Nurses at Camden, N. J., held its commencement exercises on the evening of Tuesday, May 28th. Dr. David Strock made the address. The following young women received the diploma of the school: Irene Emma Bender, Laura Davis Bryant, Carrie Hozier, Ada Ardell Hurd, Emily Augusta Jumel, Anna May Krout, and Cora Belle Oberhelman.

The Maine Medical Association.—The fifty-fifth annual meeting of this association will be held at Lewiston, on Wednesday and Thursday, June 12 and 13, 1907, under the presidency of Dr. C. E. Williams, of Auburn. The annual oration will be delivered by Dr. William T. Councilman, of Boston, who will speak on the subject: Tumors, illustrated with stereopticon pictures.

The American Gastroenterological Association.—At the tenth annual meeting of this association, held at Atlantic City, N. J., June 3 and 4, 1907, the following officers were elected for the ensuing year: President, Dr. J. P. Sawyer, of Cleveland; vice-presidents, Dr. J. A. Lichty, of Pittsburgh, and Dr. G. D. Kahlo, of Indianapolis; secretary and

The Upper Cumberland, Tenn., Medical Association.—The annual meeting of this association was held at Carthage, Tenn., on May 28 and 29, 1907. Officers were elected as follows: President, Dr. Samuel Denton, of Buffalo Val-

ley; vice-president, Dr. A. H. King, of Chestnut Mound; secretary, Dr. J. U. Ray, of

The Association of Surgeons of the Southern Railway Company

historian, Dr. George Ross; secretary, Dr. J. U. Ray (re-

The Medical Club of Philadelphia.—On the evening of Friday, June 7th, the Medical Club of Philadelphia tendered a reception to the president of the American Medical Association, the president-elect of the American Medical Association, the president of the Medical Society of the State of Pennsylvania, the president of the Medical Society of New Jersey, and the president of the Delaware State Medical Society.

Civil Service Examinations for the State and County Service.—Examinations on June 29, 1907, for a number of positions, among which is that of Physician, Sixth Grade, Regular School, State and County Hospitals and Institutions, \$900 and maintenance. The last day for filing application for this position is June 22nd. Full information and application forms may be obtained by addressing Charles S. Fowler, Chief Examiner of the Commission, at Albany.

The American Academy of Medicine.—At the annual meeting of this academy, held at Atlantic City, N. J., on June 1st and 3rd, officers were elected as follows: President, Dr. Thomas D. Davis, of Pittsburgh; vice-presidents, Dr. James K. McBride, Pasadena, Cal.; Dr. F. T. Rogers, Providence, R. I.; Dr. L. S. McMurtry, Louisville, Ky.; Dr. A. M. Holmes, Denver; secretary and treasurer, Dr. Charles McIntire, Easton, Pa.; assistant secretary, Dr. C. R. Craig, Philadelphia.

The Tri-State Medical Association of Virginia and the Carolinas held its annual meeting at Jamestown, Va., on June 3rd, under the presidency of Dr. R. E. Hughes, of Laurens, S. C. The principal subject for discussion was The Surgery of the Stomach. The discussion was opened by Dr. Stuart McGuire, of Richmond, and participated in by Dr. J. E. Stokes, of Salisbury, N. C., and Dr. Manning Simons, of Charleston, S. C. A reception was tendered to the visiting physicians, at the Virginia building, on the Exposition grounds.

Changes in the School of Medicine of Columbia University (College of Physicians and Surgeons of New York).—At a meeting of the trustees of Columbia University, held on June 3rd, the following promotions were made: On the recommendation of the faculty of medicine, Dr. James D. Voorhees was promoted to be adjunct professor of obstetrics, Dr. Royal Whitman to be adjunct professor of orthopaedic surgery, and Dr. George R. Lockwood, Dr. William K. Draper, and Dr. Van Horne Norrie to be adjunct professors of clinical medicine.

The Alumni Association of Miami Medical College.—At the annual meeting of this association, held at Cincinnati on June 3, 1907, officers were elected as follows: President, Dr. A. L. Knight, Madisonville; vice-presidents, Dr. Mark A. Brown, Dr. M. H. Haynes, Dr. J. V. Longfellow, Dr. J. P. Dugan, and Dr. Samuel E. Allen; secretary and treasurer, Dr. E. M. Craig; executive committee, Dr. A. J. Markley, Dr. W. C. Harris, and Dr. A. D. Stapleford. In the evening the graduation exercises were held at the Auditorium.

Bequests to St. Luke's Hospital.—By the will of James Morris, \$18,000 is bequeathed to St. Luke's Hospital, New York, to augment the sum of \$2,000 heretofore given by himself and wife, making \$20,000, the interest of which is to be devoted to provide perpetually for rides for invalid children in Central Park. Nineteen thousand dollars, making \$25,000 in all, \$6,000 having been given before, is also left to the hospital in memory of their son, Morris Gray Morris, the income of which is to provide the services of a voice to sing the praise of God in the children's ward.

Scientific Society Meetings in Philadelphia for the Week Ending June 7, 1907.

Pædiatric Society; Botanical Section, Academy of Natural Sciences. *Wednesday, June 12th*, Philadelphia County Medical Society. *Thursday, June 13th*, Pathological Society; Section Meeting, Franklin Institute; Kensington Branch, Philadelphia County Medical Society. *Friday, June 14th*, Northern Medical Association; West Branch, Philadelphia County Medical Society.

Medicochirurgical College of Philadelphia Commencement.—The annual commencement exercises of the Medical, Dental, and Pharmaceutical Departments of the Medicochirurgical College were held in the Academy of Music, on Friday, May 31st. Dr. James M. Anders delivered the address to the medical students and Mr. Henry F. Walton delivered the address to the dental and pharmaceutical students. The faculty gold medal and the Dr. Spencer Morris prize of the income \$11,000 for the highest general average were awarded to Dr. Frederick C. Dunlop, of Pennsylvania.

The Philadelphia Academy of Surgery.—At the regular monthly meeting of the Philadelphia Academy of Surgery, held on the evening of Monday, June 3rd, Dr. Joseph M. Spellissy reported four cases of spinal injury and one case of gunshot wound of the brain. Dr. George G. Ross read a paper on Punctured Fracture of the Skull, and reported an illustrative case. Dr. Macy Brooks reported a case of hernia cerebri, involving the frontal lobe, resulting from extensive fracture of the skull. Dr. Hiram R. Loux reported a case of permanent drainage of both kidneys and exhibited the apparatus. Dr. George P. Müller reported a case of sarcoma of the jaw.

Hydrotherapy.—A conference of physicians interested in hydrotherapy was held at the Hotel Marlborough, Atlantic City, on June 4, 1907. Dr. Simon Baruch was called to the chair and Dr. Frank E. Brown was appointed secretary. Representative physicians from several states discussed the importance of furthering the study, teaching, and practice of hydrotherapy and other physiological methods. A committee consisting of Professors Hare, of Jefferson; Thayer, of Johns Hopkins; Baruch, of Columbia; and Dr. F. E. Brown, of Baltimore, was appointed to formulate a symposium on these subjects for the next meeting of the American Medical Association.

The New State Board of Medical Examiners.—On May 29th, the Board of Regents of the State of New York named the nine members that constitute the consolidated board. The appointees are: Dr. William Warren Potter and Dr. Lee H. Smith, of Buffalo, and Dr. W. S. Searle, of Brooklyn, for terms of three years; Dr. W. S. Ely, of Rochester; Dr. Eugene Beach, of Gloversville; Dr. Floyd M. Crandall, of New York, for two years; Dr. Frank W. Adriance, of Elmira; Dr. Floyd S. Farnsworth, of Plattsburgh; and Ralph H. Williams, of Rochester, for one year. Dr. Maurice J. Lewi was appointed secretary of the board.

The Annual Banquet of the Alumni Association of the Medicochirurgical College of Philadelphia was held at the Hotel Majestic, on the evening of Thursday, May 30th. Dr. L. Napoleon Boston was toastmaster. Mayor Reyburn, Mr. Henry F. Walton, Mr. Joseph P. Rogers, Dr. William H. Green, Dr. John C. Heisler, Dr. Joseph H. Cramp, and Mr. Wayne S. Regar responded to toasts. The announcement was made that Mrs. Steele had subscribed \$5,000, to establish a bed in memory of her father, Mr. Charles M. Swain, formerly president of the board of trustees. The announcement was also made that the Trained Nurses' Association had raised \$1,700, to endow a bed as a memorial to their organization.

The New Hampshire Medical Society held its one hundred and sixteenth annual meeting at Concord, on May 16 and 17, 1907, with an unusually large and enthusiastic attendance. Dr. John H. Neal, of Rochester, was elected president; Dr. John M. Gile, of Hanover, vice-president; Dr. D. E. Sullivan, of Concord, secretary; and Dr. D. M. Currier, Newport, treasurer. A committee was appointed to consider the question of a medical defence fund, to report at the next annual meeting. The number of papers was limited to twelve, in order that there might be enough time for discussion. Considerable interest was manifested in the papers, and the discussions were full and free. The next meeting will be held at Concord, May 14 and 15, 1908.

The Medical Society of Northern Virginia.—At the semi-annual meeting of this society, held at Alexandria, on

Thursday, May 23rd, the following officers were elected: Dr. Tunis C. Quick, of Falls Church, president; Dr. George Hulley Vaughan, of Washington, and Dr. Frederick M. Brooks, of Fairfax, vice-presidents; Dr. A. Avery Rittenour, of Alexandria, secretary. The meeting was presided over by Dr. Robert M. Slaughter, of Seminary Hill, the retiring president. Papers were read by Dr. Slaughter, Dr. Llewellyn Powell, Dr. M. D. Delaney, and Dr. Samuel B. Moore, of Alexandria; Dr. George T. Vaughan, of Washington; and Dr. H. Harnsberger, of Catletts. Dr. Rittenour also read a paper, which had been prepared by Dr. J. Wesley Boveé, of Washington. It was decided to hold the next meeting, which occurs in November, at Warrenton.

The Mortality of Boston.—The number of deaths reported to the Board of Health for the week ending June 1st was 246, as against 240 the corresponding week last year, showing an increase of six deaths, and making the death rate for the week 21.30. The number of cases and deaths from infectious diseases was as follows: Diphtheria, 46 cases, 3 deaths; scarlatina, 39 cases, 1 death; typhoid fever, 7 cases, 2 deaths; measles, 35 cases, 2 deaths; tuberculosis, 42 cases, 24 deaths; smallpox, no cases, no deaths. The deaths from pneumonia were 24; whooping cough, 1; heart disease, 33; bronchitis, 3; marasmus, 4. There were 20 deaths from violent causes. The number of children who died under one year of age was 40; under five years of age, 58; persons over sixty years of age, 59; deaths in public institutions, 86.

The Williamsburgh Medical Society of Brooklyn.—A meeting of this society will be held on Monday, June 10th, when the following programme will be presented: Presentation of cases and specimens: Case of Internal Hernia, by Dr. William Linder; Inoperable Carcinoma of the Uterus Treated by Trypsin (preliminary report), by Dr. William Ziporkes; Specimen of Renal Calculus, by Dr. Warren L. Duffield; Microscopical Demonstration of Spirochæta Pallida, by Dr. Victor H. Pentlarge; Papers of the evening: Modern Management of the Summer Intestinal Diseases of Childhood, by Dr. Sara Welt-Kakels, of Manhattan; discussion by Dr. Henry Koplik, of Manhattan, and others; Common Diseases of the Rectum, as Seen by the General Practitioner, by Dr. Martin L. Bodkin; discussion by Dr. Adolph Bonner, Dr. Joseph Merzbach, and Dr. George I. Miller.

The Fourteenth International Congress of Hygiene and Demography will be held at Berlin on September 23 to 29, 1907. In order to give visitors an opportunity to inspect the hygienic institutions, of which there are more than one hundred in Berlin and its environs, sessions of the congress will be held in the forenoon and will not extend later than 2 o'clock. Visits to the establishments chosen will be made under the personal conduct of a guide, who will give a short description in three languages of the institutions visited. The local committee, under the presidency of Dr. Eilsberger, Privy Councillor in the Ministry of Public Worship and Education, is composed of representatives of the Imperial and State Officers of the Council of Berlin; members of the Faculty; of the Chamber of Physicians; of Directors of different hygienic societies; physicians; engineers; industrials; and representatives of special journalism.

The Need of More Surgeons in the Army and Navy.—There seems to be a danger, says the *Army and Navy Journal*, that they may have to adopt in the Medical Corps of the Navy the methods of Christian Science, which admit of 'absent treatment.' The corps is short sixty-four doctors, and the young medical graduates show no disposition to apply for the vacancies. The professors of the medical colleges from which they graduate are advising them not to go into the Government service, as its rewards are much less than those the successful practitioner may hope for, and all young doctors expect to be successful practitioners. Indeed, those who are able to meet the high requirements of the Naval Service may well hope to excel in their profession. The Medical Department of the Army is not so much better off that it may boast itself. Bachelor doctors may be able to adjust themselves to military life, but doctors who have families do not like the frequent changes to and from the Philippines, or other conditions of military life. But perhaps the Services may survive if, as that distinguished medical man, Oliver Wendell Holmes,

how about the surgical operations which are often required, even in peace, and in war are absolutely indispensable.

The Centennial Celebration of the School of Medicine of Columbia University.

At the Centennial celebration of the School of Medicine of Columbia University, which will be held at the University on Tuesday, June 11th, as follows:

10-11 o'clock. PHYSIOLOGY: at the physiological laboratory, by Professor Burton-Opitz and Dr. Haven Emerson: The action of the valves of the heart. The circulation of the blood in the capillaries. Clinical methods of recording certain facts of circulation and respiration.

10-11 o'clock. SURGERY: at the physiological laboratory, by Professor J. A. H. and Dr. J. W. D. M. Recent studies at the surgical laboratory. The technics of undergraduate teaching in surgery.

11-12 o'clock. BIOLOGICAL CHEMISTRY: at the laboratory of the department, by Professor W. J. Gies and assistants: The action of enzymes. Some of the chemical phases of the newer physiology of digestion.

12-1 o'clock. PHARMACOLOGY: at the recitation room of the department, by Dr. A. N. Richards: The action of certain common drugs upon the heart.

Philadelphia Personal.—Dr. Ernest Laplace has been appointed surgeon to the American Hospital for Diseases of the Stomach.

Dr. Robert Jones, of Liverpool, England, Fellow of the Royal College of Surgeons, was in Philadelphia on Wednesday, May 22nd. He was entertained at the Pennsylvania Hospital, the Jefferson Medical College, St. Agnes's Hospital, and at the Widener Memorial Home. Dr. DeForest Willard and Dr. James K. Young tendered him a dinner, and later a reception was held at the University Club, which was largely attended.

Dr. Charles A. E. Codman has been elected an attending physician at the Oncologic Hospital and Dr. S. MacCuen Smith has been elected consulting aurist to the same institution.

At the eighty-second annual commencement of the Jefferson Medical College of Philadelphia, held on June 3, 1907, the honorary degree of Doctor of Laws was conferred upon George Sumner Huntington, M. D., Sc. D., Professor of Anatomy in the School of Medicine, Columbia University (College of Physicians and Surgeons of New York). Professor Huntington delivered an address on Modern Advances in the Teaching of Anatomy and Other Medical Sciences. One hundred and twenty-six students were graduated, of which number 105 had received hospital appointments in the recent commencement examinations.

Measures for Exterminating the Bubonic Plague.—According to the *Army and Navy Journal* Tokio despatches announce that Japan will shortly give notice of her acceptance of President Roosevelt's proposal for an international conference to consider measures for exterminating the bubonic plague. With the acquisition of the Philippines and the maintenance of large bodies of American troops in those islands, the prevalence of the plague has become a matter of increasing concern to the United States. The disease has appeared in various parts of the archipelago from time to time, and the utmost vigilance has been required to keep it from becoming epidemic. When it was discovered that the disease was communicated by rats, an energetic rat hunt was instituted in Manila, which, since its inception, has resulted in the extermination of hundreds of thousands of rodents. The thorough renovation of the city, instituted by the Army and since continued by the civil government, and the rigorous sanitary regulations which now prevail, have made Manila one of the healthiest cities in the Orient. The medical authorities of the city have made extensive experiments looking to the prevention and cure of plague by inoculation, and the record of those experiments will profoundly interest the international conference, if such a body is assembled. We believe, in short, that the judgment of such a conference would be that America had led in struggle for means to exterminate bubonic plague as she had in the conquest of yellow fever.

The Pay of Mounted Medical Officers of the Navy.—The Supreme Court of the United States on Monday, May 13, in an opinion by Justice McKenna settled the long vexed

question of mounted pay to the officers of the Medical Corps of the Navy. This question, says the *Army and Navy Journal* was raised immediately upon the passage of the Personnel act in 1899, and, strange to say, has for the first time been authoritatively set at rest by a decision just rendered eight years afterwards. The case was that of Surgeon Assistant J. A. H.

pay while in the grade of passed assistant surgeon with the rank of lieutenant. The question was whether he was entitled to the pay provided in the Army pay table for a 'captain mounted' or a 'captain not mounted.' The decision of the court holds that, in view of the fact that assistant surgeons in the Navy rank with assistant surgeons in the Army, the duties of officers of the Medical Corps of the Navy are analogous to those of medical officers of the Army, and that it would be unreasonable to hold that Congress intended some officers in the Medical Corps of the Navy to have mounted pay and others pay as not mounted; the only proper construction of the law is that all officers of the Medical Corps of the Navy are entitled to Army mounted pay. The result is an affirmation of the judgment of the Court of Claims. Much relief will be experienced by medical officers whose payment at mounted rates has been suspended by order of the Comptroller since last September, awaiting the action of the Supreme Court.

The Jewish Hospital of Philadelphia.—The forty-second annual meeting of the Jewish Hospital Association was held on Sunday, May 26th. Resolutions of appreciation of the work of the president of the board of trustees, Mr. William B. Hackenburg, were passed. Mr. Isaac Gimbel was elected a director. Mrs. Joseph H. Rubin presented an oil portrait of her mother, Mrs. Mathilda Kaufman, who was for many years the chairman of the Ladies' Associate Board. During the year 1,519 patients were treated in the hospital, 102 in the Lucien Moss Home for Incurables, 142 in the children's wards, 11 in the Infirmary for the Aged, 209 in the Guggenheim building for private patients, and 12 in the isolation building. Four thousand nine hundred and fifty cases were treated in the dispensary. Among the bequests received during the year are \$9,000 from the estate of Col. Isaac May, \$1,000 from the estate of Aaron Lichten, \$500 from the estate of Moses Lichten, \$500 from the estate of William Lichten, \$5,000 from the estate of Abraham M. Freichie, and \$5,000 from the estate of Samuel Elkin. Mrs. Ida Foreman presented a solarium in memory of Dr. Rebecca Fleischer, which is now in the process of construction. The following officers were elected for the coming year: President, William B. Hackenburg; first vice-president, Mayer Sulzberger; second vice-president, Isidore Langsdorf; third vice-president, Benjamin Wolf; treasurer, August B. Loeb; secretary, Henry N. Wessel; corresponding secretary, Arthur A. Fleisher; directors for three years, Ephraim Lederer, Edward Stern, Max Bamberger, and Isaac Gimbel.

The New York Optometry Bill.—The Committee on Legislation of the Medical Society of the State of New York has drafted the following form of letter for physicians to send to Governor Hughes and as many members of the Assembly as they may be able to influence: "Allow me to protest respectfully but earnestly against the passage of the Optometry bill at a time when the State is cooperating with teaching institutions and with the profession at large to raise the standard of medical efficiency. This bill not only represents a step backward, but is also a dangerous step. The examination and treatment of the eyes of children should be intrusted only to the trained physician who is able to recognize diseases of any kind and to take proper action, and not to one who is only competent to fit glasses. The law now recognizes in diagnosis, i. e., the recognition of disease, an integral and important part of the practice of medicine. Each and every argument against allowing druggists to give medicines applies one hundred fold to opticians being declared competent by an act of legislature to act as physicians in any case of disease which may have as part of its symptoms the complaint of failing vision. The laity is beginning to recognize that such symptoms of visual defect may be the first signs of heart and brain or blood disease, and that they may often require operative treatment and not glasses at all. The specialist in eye disease must be, first of all, a trained physician and surgeon, and not only a mechanic and physicist. The public is beginning to realize the importance of skilled and capable medical advisers. Are you, who should be in the vanguard

of progress with educators and practitioners, going to retrograde? If so, we had better prepare for the 'barber surgeon,' the 'herb doctor,' and the 'medicine man,' and admit that we are not quite ready for civilization."

Society Meetings for the Coming Week:

MONDAY, June 10th.—New York Academy of Medicine (Section in Neurology and Psychiatry); Society of Medical Jurisprudence, New York; Corning, N. Y., Medical Association; Waterbury, Conn., Medical Association.

TUESDAY, June 11th.—New York Academy of Medicine (Section in Public Health); Buffalo Academy of Medicine (Section in Medicine); Medical Society of the County of Schenectady, N. Y.; Practitioners' Club of Jersey City, N. J.; Medical Society of the County of Rensselaer, N. Y.

WEDNESDAY, June 12th.—Medical Society of the Borough of the Bronx, New York; Alumni Association of City (Charity) Hospital, New York; Brooklyn Medical and Pharmaceutical Association; Richmond County, N. Y., Medical Society; New York Pathological Society; New York Surgical Society.

THURSDAY, June 13th.—New York Academy of Medicine (Sections in Pediatrics and Otolaryngology); Brooklyn Pathological Society; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers, N. Y.; Society of Physicians of the Village of Canandaigua, N. Y.

FRIDAY, June 14th.—New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York; Saratoga Springs, N. Y., Medical Society.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending June 1, 1907:

	June 1. Cases.	Deaths.	May 25. Cases.	Deaths.
Typhoid fever	33	5	35	8
Scarlet fever	1	1	4	1
Varicella	129	—	120	—
Measles	623	21	865	19
Scarlet fever	511	29	494	15
Whooping cough	40	9	38	14
Diphtheria	332	31	313	27
Tuberculosis, pulmonary	325	173	437	184
Cerebrospinal meningitis	19	21	40	30
Totals	2,016	289	2,286	297

Statement of Mortality of Chicago for the Week Ending May 25, 1907, compared with the preceding week and with the corresponding week of 1906. Death rates computed on United States Census Bureau's figures of midyear population—2,107,620 for 1907, 2,040,185 for 1906:

	May 25, 1907.	May 18, 1907.	May 26, 1906.
Total deaths, all causes	641	707	652
Annual death rate in 1,000	15.86	17.49	16.59
Sexes.			
Males	376	406	392
Females	265	301	260
Ages.			
Under 1 year of age	134	104	140
Between 1 and 5 years of age	65	80	64
Between 5 and 20 years of age	47	48	39
Between 20 and 60 years of age	262	321	281
Over 60 years of age	—	—	—
Important causes of death.			
Apoplexy	13	13	13
Heart diseases	42	50	39
Bronchitis	17	24	13
Consumption	76	75	68
Cancer	23	31	32
Cholera	13	10	7
Diarrhoea	8	10	9
Heart diseases	40	56	41
Intestinal diseases, acute	2	3	2
Intestinal diseases, chronic	30	25	35
Measles	15	6	8
Nephritis	24	21	23
Pneumonia	158	174	138
Scarlet fever	11	12	10
Schistosomiasis	12	11	10
Syphilis	2	6	5
Typhoid fever	37	26	48
Wounds	3	4	2
All other causes	115	150	149

Indications of a return to normal conditions of the public health, which had been indicated by the figures of May 11 and 18—have at last materialized. The 641 deaths from all causes,

reported to the Bureau of Vital Statistics during the week, are the fewest for any week of the current year—66 fewer than the number of the previous week and 11 fewer than that of the corresponding week of last year. Of the important causes of death the following show the greatest reductions during the week, as compared with the preceding period of seven days—pneumonia and heart diseases, each 16 fewer; Bright's disease and cancer each 8 fewer; bronchitis 7 fewer; typhoid fever, 4 fewer. There were but 2 deaths reported from typhoid in the population of more than two millions.

Proceedings of Societies.

AMERICAN THERAPEUTIC SOCIETY.

Eighth Annual Meeting, held in Washington, on May 4, 6, and 7, 1907.

The President, Dr. ROBERT REYBURN, of Washington, in the Chair.

Pure Drugs.—This was the title of a paper by Dr. HARVEY W. WILEY, of Washington, who said that the knowledge of drugs must be associated with the surroundings of the patient and his idiosyncrasies. Cheerfulness and suggestion might divert the mind and increase the efficiency of drugs. The proper effect of drugs was often defeated by adulteration and misbranding. Only by systematic standardization of drugs could this be prevented.

In 1848 laws were first enacted to secure pure drugs. An examiner of drugs, Dr. Bailey, was in New York from 1840, but he had little or no authority to condemn them, although he believed at least one half were adulterated or too old to be efficient. Dr. Bailey knew that there were several grades for special sections of the country.

The passage of the Pure Food and Drug bill marked an epoch in the history of drugs. In this respect the relation of the bill to the importation of drugs was of vital importance, and the attorney general had this under consideration at present. Drugs were misbranded if they were for sale under another name, if the package failed to state the amount of alcohol, opium, chloral, or cocaine, or if their contents had been removed or replaced. To give some idea of the magnitude of the drug business, 50,000 varieties of drugs were on the market, 1,500 in the *United States Pharmacopæia* or *National Formulary*. To at least twenty per cent. of drugs the new law was directed. To the remaining 40,000 the term "misbranded" was applicable.

There had been little restraint upon the adjectives used in portraying the efficiency of these drugs. They had been advertised to the public and labelled as "sure cures," such as scarlet fever cure, appendicitis cure, yellow fever cure, Bright's disease cure, etc. The appendicitis cure consisted of olive oil principally. A distinguished gentleman had called upon Dr. Wiley eighteen months ago and asked for some sort of a "dope" to put in olive oil to produce a habit, and only recently he had seen the same cure advertised for sale. Most of these drugs were simply drugs, but morphine, cocaine, and similar enslaving drugs were added in order to produce a habit and guarantee sales. Such cases came to the notice of the Bureau of Chemistry frequently.

Many persons who engaged in the manufacture of such products were ignorant of the character of their wares. It was a common experience to learn that most of these persons lacked an elementary education, yet the law did not prevent the manufacture or the sales. If there was a law which required all persons who manufactured such drugs to pass such an examination

as a pharmacist or physician must pass, the traffic in these drugs would be destroyed.

The standards of the *Pharmacopœia* should be construed as laws were construed, as we knew that pure water, pure alcohol, etc., could not be provided, but a broad interpretation was intended. The medical profession were at fault in their medical chemistry and medical pharmacy. The practising physician must adapt the prescription to the patient, but the real art was in the combination of drugs. The blessings of pure drugs and pure foods might be reached only by united effort and vigilance.

Dr. R. R. WILCOX said that the Revision Committee of the *United States Pharmacopœia* had stood solid on the proposition that the standard of crude drugs should not be so high that it could not be maintained in every requirement, and were assured by the manufacturers several years ago that the standard was a just one. After the Pure Food and Drug law the protest came, and the manufacturer stated that the drug could not be produced as required by the *Pharmacopœia*. This had not occurred once only, but a number of times. Wherever the committee had been shown by their chemists that the standard could not be reached, it had not hesitated to lower that standard.

Dr. ELI LONG, of Buffalo, believed also that every manufacturer should be compelled to pass a rigid examination before being allowed to enter into the drug business or, what amounted to the same thing, prescribing for patients all over the United States.

Dr. F. E. STEWART, of East Orange, N. J., was of the same opinion. He lauded Dr. Wiley for the great work he had accomplished.

Dr. O. T. OSBORNE, of New Haven, Conn., was astonished at the men who were fighting the committee. The students needed more chemistry, and after studying *materia medica* and pharmacy the art of prescription writing was lost. They wrote by formularies almost entirely. Then came the proprietary remedy, simple and easy to prescribe, and they grasped at the opportunity because they were unable to write prescriptions. The average formulary contained too many drugs, most of which could be eliminated.

Dr. KEBLER, of Washington, said that the manufacturers were often densely ignorant of the rudiments of chemistry, and one enterprising manufacturer had planted scrap iron about grape vines and maintained that the wine made from the grapes contained iron.

Dr. WILEY stated that the Post Office Department was helpless in many of these cases. The advertising matter might be carried through the mails, but the law prohibited the carrying of the adulterated or misbranded drugs. If a law were passed which stated that a paper or magazine bearing these fraud advertisements should be excluded from the mails, it would be an excellent thing. The proprietary association at this time professed great piety, but he mistrusted them, as they were now using this law for an illegitimate purpose, because they advertised "Guaranteed Under the Pure Food Law," while as a matter of fact, the government did not guarantee anything of the sort. This could not appear on the package, but there was nothing to prevent the advertising of these so called guarantees. Conviction was almost impossible where prosecution for failure to cure was the issue, because if a reasonable doubt existed they would not be found guilty.

Criticism of the United States Pharmacopœia.—In a paper thus entitled, Dr. REYNOLD W. WILCOX, of New York, said that all criticisms were welcomed for greater accuracy and the making of a more valuable book. A common criticism was that too many drugs were retained which were not used, while drugs which were used were omitted. He did not believe this was true. More frequent revisions were desired by the physician,

but many years were required in order to test drugs. That the time had come when the American Medical Association should take a bold and far-reaching line on other consideration. It must be remembered that the committee was a representative body. The showing the Council of Pharmacy and Chemistry had made showed that the American Medical Association was totally unfit to undertake this work by its lack of ability, and had no excuse for existing.

Dr. KEBLER felt much as Dr. Wilcox did, but failed to see that the criticisms were fair. There were errors, of course, which were being corrected as fast as human agencies could accomplish it. The chief purpose of the Council of Pharmacy and Chemistry, of which Dr. Kebler was a member, was to hold in check the representations of manufacturers, and the council could reach frauds that the laws could not.

Dr. SPENCER L. DAWES, of Albany, spoke of the complicated nomenclature, such as hexamethylene tetramine. It was almost impossible for medical students to carry such names, which, while strictly scientific, were too large to handle, and though he did not approve of dropping them, he believed they should be curtailed.

Dr. ELI LONG defended the Council of Pharmacy and Chemistry, and believed it was doing a good work. It was a recent organization, but doing excellent service.

Dr. WILCOX stated that perhaps he had been severe in his strictures upon the Council of Pharmacy and Chemistry. Their first failure was in having a poorly balanced committee. It was not a representative body. They had done an immense amount of work, and destructive criticism was not always valuable. The nomenclature was divided between German, Latin, and English Latin, and he approved of shorter and more pronounceable names.

Legal Control Necessary in the Treatment of Drug Habits.—In this paper Dr. FREDERICK H. GERRISH, of Portland, Me., said that the use of habit forming drugs brought about a change of temperament and wreck of the physical body, and they came to us for help. In any method of treatment the drug must be withdrawn, but we could not depend on the will power of the patient; instead, physical restraint must be used in every case. In doing so we might lay ourselves open to a suit for damages. The only method was by the enactment of a law which allowed a patient to relinquish his liberty long enough to be at least started on a cure. But the laws were negligent on this point. Insane asylums were not the proper places. The surroundings should be such as to encourage self respect and manly attributes. The State of Maine was the only State, to his knowledge, which provided for voluntary confinement for a long enough period to procure a cure or partial cure. The statute of that State provided for a written agreement, witnessed and approved by a legal officer, but not for more than ninety days' duration. The case might be investigated at any time upon the order of a justice.

Dr. OSBORNE believed this law was in the right direction, and moved that a copy of it be mailed to every member of the society.

Dr. KEBLER wished to know if treatment of the opium or cocaine habit could be done successfully by correspondence. He would like to know how many persons were quietly buying these drugs through the mail and taking them constantly. He knew of eight or ten concerns that were treating cases by mail all over the United States, and he had an estimate that one person in every 125 had a drug habit.

Dr. GERRISH said that the law of Maine was very satisfactory, and seemed the only solution of the problem.

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

JUNE 1, 1907.

1. The Final Triumph of Scientific Medicine,
By NICHOLAS SENN.
2. The March of Sanitation, By WALTER WYMAN.
3. Exploration and Decapsulation of the Other Kidney
Before Completing a Nephrectomy,
By GEORGE M. EDEBOHLS.
4. Erythromelalgia. A Study of Seventy Cases Reported
in the Literature, By IRVING WILSON VOORHEES.
5. Varicose Epigastric Vein Following Phlebitis,
By ASHLEY PASTON COOPER ASHHURST.
6. Bimanual Vibratory Palpation, By HOWARD A. KELLY.
7. Radical Cure of Umbilical Hernia,
By WILLIAM J. MAYO.
8. Three Cases of Extensive Multiple Keloids in Chinamen,
Following the Habitual Hypodermic Use of Morphin,
By MAXIMILIAN HERZOG.
9. Isopral and Hydrated Chloral, By ROBERT A. HATCHER.
10. Paranoia. Its Varieties and Medicolegal Importance,
By CHARLES W. BURR.
11. The Pathogenesis of Hæmoglobinuric Fever,
By WILLIAM H. DEADERICK.
12. Wax Models of Cases of Leprosy by Francis R. Day
of Honolulu, By E. S. GOODHUE.

1. **The Final Triumph of Scientific Medicine.**—Senn, in considering to what extent humanity has been benefited by preventive medicine, says that all that has been accomplished in this new field of medical thought and action is the very best proof of the unselfishness of the medical profession and of the humanitarian spirit which actuates the true physician. Doctors earn their daily bread by taking care of the sick, and consequently the lessening of disease by preventive measures necessarily reduces their income, but this does not prevent them from giving their time and energies in efforts to lessen the sum of human suffering by protecting their patrons against preventable diseases. In this respect the medical profession has no equal among other classes of men; it stands solitary and alone as an emblem of genuine charity and unselfishness. Prevention rather than cure has been for some time the aim of scientific progressive physicians. Among such preventable diseases he mentions: Smallpox, hydrophobia, wound infection, puerperal sepsis, tetanus, malaria, typhoid fever, cholera, yellow fever, and bubonic plague. Preventive medicine is the medicine of the future, and the final triumph of scientific medicine will be the suppression of disease. In this struggle with the causes of disease we need not only the earnest and united support of the medical profession in the front ranks of this movement, but the encouragement and financial aid of the governments, general, State, county, city, and village.

2. **The March of Sanitation.**—Wyman speaks of the progress of sanitation and hygiene among the nations of the earth. This progress has been marked. He cites England (reducing of the death rate), Germany (smallpox and typhoid fever), Italy (malaria), Egypt, China, Japan, Cuba, Mexico, Brazil, the Central American republics, and our own country, including the Philippines, the Canal Zone, and Puerto Rico (yellow fever, smallpox, hookworm disease, the movement against tuberculosis, the national pure food law, etc.). The idea is taking root that these nations which are most active in sanitary and hygienic movements are really in some measure dependent on one another for complete success. This idea has found expression in the suggestion of a combined effort to eliminate the yellow fever from the Western Hemisphere, and in the declared necessity of eradicating the disease from all infected ports, requiring a combined or simultaneous effort of all the nations possessing infected ports. It has found expression, also, in the international official

conference at Venice in 1897, supplemented by a like conference in Paris in 1903, as a result of which treaties have been entered into between the principal governments of the world bearing on the treatment of plague and cholera to prevent their extension from one country to another. The sanitary awakening in the United States is notable. Its growth may be appreciated when we look back to the conventions called by those interested in these affairs just before and after the civil war. These conventions were held in New York, Philadelphia, Baltimore, and Richmond, and the discussions therein related almost exclusively to maritime quarantine. The great need was of uniformity in the administration of quarantine at the several ports. That uniformity was finally established through the national quarantine act of February 15, 1893. Out of these quarantine conventions there developed the American Public Health Association, composed of sanitarians in both official and private life, who, as the published transactions will show, have devoted themselves to the subjects of sanitation and hygiene. Popular sentiment has been aroused. This is seen partly in the activities of the State boards of health. All the States now have boards of health, or health departments, which each year are increasing in importance and in direct influence on their own people. The legislatures have widened the legal functions of these State boards and are yearly becoming more liberal in their appropriations. True, in some States the appropriations are absolutely niggardly; and it is the duty of the people appreciating the sanitary movement to demand of their legislators more liberal support of the State health organization.

4. **Erythromelalgia.**—Voorhees asks the question, is erythromelalgia a disease with a distinct and constant pathological basis, or is it merely a symptom of some grosser disease? In 1894 Lewin and Benda made a critical study of all the cases reported to that date, and it is their fixed opinion that erythromelalgia is not an independent disease, but a symptom complex which may have either a central or peripheral origin. From the data at hand the author is inclined to support this view, and also that of Eulenberg, who thinks that Raynaud's disease should also be so classed. It is the author's belief that both erythromelalgia and Raynaud's disease are simply different phases of the same condition, the one being dependent on an undue dilatation of the terminal arterioles, the other on an undue contraction of the same. Several authors, notably Johanssen, Potain, Rolleston, and Sachs, report the two conditions in the same patient, and there is not the slightest doubt but that they do exist together as symptoms of some marked pathological state, and notably in that disease of the bloodvessels known as arteriosclerosis.

5. **Varicose Epigastric Vein Following Phlebitis.**—Ashhurst describes such a condition, his article being illustrated with a very good photograph. This shows the superficial epigastric immensely dilated and varicose. Some communicating branches leave the main trunk of the epigastric vein near the umbilicus. The main trunk of the superficial epigastric vein continues directly upward, and in the sternal region divides and subdivides into a plexus of veins occupying the left mammary region. The superficial veins of the left shoulder are all markedly dilated.

7. **Radical Cure of Umbilical Hernia.**—William J. Mayo describes his mode of operation for umbilical hernia: Two transverse elliptical incisions are made, cleanly exposing the neck of the hernial sac and the aponeurotic structures for several inches above and below it. The neck of the hernial protrusion is cleared as high as the aponeurotic structures extend. The sac is then opened and any intestine which may lie in it is returned into the abdomen. The contained omentum, if such there be, is ligated in sections on a level with

the abdominal incision and the incision returned into the peritoneal cavity. This is with all of the adherent omentum including the skin is cut away without further manipulation. A stout curved needle threaded with strong celluloid linen is passed from without in through the aponeurotic structures and peritoneum from two to three inches above the margin of the opening. To guard the needle as it enters the peritoneal cavity the bowl of a large tablespoon, as recommended by Monks, is a valuable aid. The needle and thread is drawn down and out of the hernial opening. A firm mattress stitch is now caught in the upper edge of the lower flap about one fourth of an inch from the margin, the needle is then carried back through the hernial opening into the peritoneal cavity and made to emerge one third of an inch lateral to the point of original entrance. On each side of this is introduced a similar mattress suture of strong chromicized catgut. These three sutures are drawn tight, pulling the entire thickness of the aponeurotic and peritoneal structures behind the upper flap. The margin of the upper flap is now retracted to expose the suture line, and if any gap exist it is closed with catgut sutures. The upper flap is now sutured to the surface of the aponeurosis below by continuous chromicized catgut suture and the superficial fat and skin closed. The patients are confined to bed from twelve to twenty days. Of eighty-one patients who were operated upon between 1894 and 1905 seventy-five were traced. One had a partial relapse; her physician described it as a boat shaped stretching at the site of the former operation, but stated that it did not inconvenience the patient. Another patient supposed to have suffered a relapse was operated upon and a second opening found above and lateral to the closed umbilical opening.

8. Extensive Multiple Keloids.—Herzog draws the following deductions from his observations of three patients: 1. The great multiplicity of the keloids and the vast areas over which they occurred. 2. Their common ætiology, all three unmistakably depending on the habitual use of the hypodermic syringe for the purpose of injecting morphine. 3. The fact that Chinese, when habitually using hypodermic injections of morphine, are apparently liable to development of keloids. This is probably due to a racial predisposition. It is perhaps proper to mention that, while opium smoking is very widespread among the Chinese, the use of morphine by the aid of the hypodermic syringe is not at all common among these people. 4. The result of the microscopical examination is in accord with what has repeatedly been described as the typical histology of the keloid. Several years ago the author examined microscopically several cases of spontaneous keloids. The sections from these cases are not now accessible, but he has the impression that there is no fundamental difference between the histology of so called spontaneous and acquired keloid. The preservation or absence of the papillæ of the derma, in the two types of keloids in particular, is by no means an invariably present differential feature; on the contrary, transitional stages are occasionally found in either variety.

MEDICAL RECORD

June 8, 1907.

1. The Physiological Action of the Pancreatic Enzymes, with Special Reference to Hypodermic, Urology, and Clinical Pathology. By MARCEL A. GRAVES.
2. Eyestrain and Other Diseases Due to Crossing, Crowding, and Damming of the Retinal Vessels. By GEORGE M. GOULD.
3. Acid Intoxication or Acidosis; a Factor in Disease. By EUGENE S. TALBOT.
4. A Case of Intestinal Obstruction Due to Persistence and Anomaly of the Urachus; Operation; Recovery. By ANTONIO FANONI.
5. A Comment on the X Ray as Applied to Prostatic Enlargement. By L. BOLTON BANGS.

1. The Physiological Action of the Pancreatic Enzymes. By MARCEL A. GRAVES. (The Journal of the American Medical Association, Chicago, Ill., June 8, 1907, pp. 1007-1010.)

These trypsin is as exclusive in its action on the proteids as lipase is on the action of fats, and the third, amylase, acts on the carbohydrates. Of the pancreatic ferments two are used, an injection of trypsin, which is prepared directly from the fresh pancreas gland especially for hypodermic use. It contains the trypsin in its normal association with the other soluble enzymes and constituents of the pancreas secretions. The second—amylase—is a solution of pancreatic diastase (amylase) devoid of the proteolytic (trypsin) and fat splitting (lipase) ferments. It is also especially prepared for hypodermic use. The methods of administration are: (1) Hypodermic (a) into the subcutaneous tissues, (b) into the tumor mass; (2) by rectum; (3) by mouth. The administration of the pancreatic ferments is almost exclusively by hypodermic injections, combined with the local application of a pancreatic lotion and a trypsin powder in suitable localities. According to Graves, unless the ferments are directly injected into the growth, no results are obtained. This is in direct opposition to the author's observations. The dose of trypsin hypodermically varies and is governed by the pathological condition and by the condition of the kidneys before and after treatment is instituted. In nonmalignant conditions large and long continued doses are well borne, as there is no reaction other than the local one at the site of the injection. In patients suffering from malignant conditions the doses must vary according to the patient's ability to take care of them. Small and infrequent doses seem to bear a definite relation to long and protracted toxic conditions. If given by rectum, the dose should be twice that of the customary hypodermic dose, and it should be diluted in from two to three times its volume of cold sterilized water. The rectal tube should be carried high up into the bowel for at least nine to twelve inches. In cases of cancer cachexia with the moderate loss in hæmoglobin, a marked improvement is shown, although the daily deviations are greater than 5 per cent. A moderate leucocytosis immediately follows the injection of trypsin. There is no accumulative effect exhibited by the white blood count. It seems that trypsin acts on intercellular matter of a definite configuration, following the selective law of enzymes, and that the result is a pathological quantity of glycogen throughout the body, manifested especially in the eosin granules and to a certain extent probably stored up in the muscles. As the result of the trypsin treatment of cancer there is produced a profound irritation of the sympathetic nervous system. This is markedly evidenced by interference with the circulation in glandular structures, a breast, for example. While the daily urine analyses have not established clearly a definite relation between the treatment and the output of urea, there does seem to have been noted a tendency toward the lessening of the urea following the injection of trypsin, which can readily be explained on the ground of the interference of the circulation in the glandular structure due to the irritation of the sympathetic nervous system; while on the other hand, in a number of instances, an increased output of urea has been observed upon the administration of amylase. Another and invariable evidence of the irritation of the sympathetic nervous system is shown in the complete relaxation of sphincter muscles, for example, the anal sphincter, the urethral, that of the os uteri, according to the site of the disease. Trypsin and amylase are excreted mainly by the kidneys, producing a nephritis more or less extensive. Granular casts appear in the urine almost immediately after the first doses of the ferments. The nephritis does not seem to be progressive, the casts and albumin remain-

ing pretty constant unless the dosage is increased. A single superposed dose of three ampoules has been seen to produce epithelial casts. It is difficult to disassociate the predisposition toward indicanuria resulting from the ferment treatment from the characteristic indican of cancer. Treatment should be undertaken early in every instance, and should always be an adjunct to surgical interference in every postoperative case. Metastases should never be allowed to develop. The importance of removing a diseased organ must never be lost sight of, and the enzyme treatment should be carried on with a full recognition of the value of skilled surgical interference when possible. The indications are that the use of the enzyme treatment will have to be continued over long periods of time and perhaps at intervals during life, but as the absence of pain is a constant accompaniment, it would seem logical and better to have a patient with the trypsin necessity rather than the morphine habit.

3. Acid Intoxication or Acidosis; a Factor in Disease.—Talbot observes that lessened blood alkalinity affects the whole alveolar process by setting up an irritation and inflammation of the coats of its arterioles and in the tooth pulp (which is also an end organ), producing endarteritis obliterans, arteriosclerosis, and nerve end degeneration. Disease of the terminal nerves and arteries causes absorption of the bone. The inflammatory process has been termed interstitial gingivitis; the bone absorption, osteomalacia, or senile absorption, although it may occur early in life. The change which has taken place in the blood, owing to excessive acidity, plays a very important part in the action of the heart, producing high tension. It is supposed to act direct upon the subendocardiac ganglia and also by the irritation directly through the coronary arteries and their branches to those ganglia situated in the muscular tissue. Acids in the system must also influence the vasomotor supply causing contraction of the arterioles. In the light of the author's researches, another factor must enter largely into the cause of the increased action upon the heart for systolic force, namely, endarteritis obliterans, arteriosclerosis, and nerve end degeneration. Greater pressure is required of the heart to force the blood through the arterioles to their extremities. Other end organs and structures of the body, such as the liver, kidney, eye, etc., are obviously predisposed to affection in the same manner, leading up to sclerosis of the liver. Bright's disease of the kidney, and degeneration of arteries in the brain. Kidney lesions, due to the eruptive fevers in children, are influenced to a great extent by a high degree of acidity in the system. The effects of high degree of acidity in the mother on the fetus in producing arrest of development at the senile or first period of stress, causing deformities of the child, merit investigation. An abnormal degree of urinary acidity extending over a period of nine months accounts for many of the neuralgias, toothaches, destruction of teeth by erosion, decay of the teeth and wasting of the alveolar process, skin diseases, and many other lesions so common in pregnancy which cease to trouble after birth of the child. Mental strain due to overwork, grief, shock, etc., check the secretions causing an abnormal degree of urinary acidity which eventually results in diabetes, Bright's disease, and arterial degeneration. There are many other lesions traceable to or influenced by a high acidity of the system. The author concludes by saying: Since many individuals have an abnormal degree of urinary acidity under which destruction of the teeth and alveolar process results, colds are contracted, headache and backache, and many serious lesions develop in pregnancy to be corrected by making the acidity normal, is here not a positive index for prophylaxis? Should not the surgeon, who operates upon a patient first, if time permit, make the acidity normal? In every

disease to which the physician is called, should not the degree of acidity of the urine and amount of indican first be obtained to have some definite basis for work? Will not drugs produce better results in diseases if the urinary acidity be normal? Frequently the treatment of these two symptoms alone restores the patient to health.

BRITISH MEDICAL JOURNAL.

May 18, 1907.

1. Remarks on Chronic Splenomegalic Polycythæmia, By R. SAUNDBY.
2. A Case of Splenic Leucæmia Complicated with Gout and Albuminuria. By G. PARKER.
3. Local Anæsthesia by Novocaine, By J. W. PARE.
4. Regeneration of Nerves with Regard to the Surgical Treatment of Certain Paralyses, By C. J. BOND.
5. Morphinomania Treated Successfully with Atropine and Strychnine, By M. S. P. STRANGMAN.
6. The Physiological Action of Whiskey on the Circulation, By F. J. CHARTERIS and E. P. CATHCART.
7. Calcium Salts in the Treatment of Certain Types of Pneumonia, By J. D. CREE.
8. New Methods of Isolating the Bacillus Typhosus from Infected Water, By W. J. WILSON.
(The Science Committee of the British Medical Association, Report CI.)

9. The Structure and Secretion of the Parathyroid Glands in Man, By D. FORSYTH.

1. Splenomegalic Polycythæmia.—Saundby reports two cases of chronic splenomegalic polycythæmia, a disease which may be defined as a chronic progressive asthenia, characterized by debility, high blood pressure, general redness or cyanosis of the skin, splenic enlargement, polycythæmia affecting the red cells with a proportional rise in the percentage of the hæmoglobin, the specific gravity, and the viscosity of the blood, but without any increase in the white cells. There may be periods of remission during which the patient feels well. Later cyanosis, dyspnœa, œdema of the extremities, dilatation of the heart, enlargement of the liver and albuminuria occur, and may be associated with mental depression, or dulness, apathy, and drowsiness. The course appears to extend over many years, but the tendency is to terminate ultimately by gradual heart failure or by cerebral hæmorrhage. A slightly higher percentage of the cases occur in men; the average age is forty-three years. The writer cannot accept the new theory that the condition is a primary disease of the bone marrow or of the spleen, or that sufficient changes have been found in the hearts of these cases, to make it reasonable to suppose that the defect lies there. The mechanism of the obstruction to the circulation is probably the narrowing of the middle sized arteries and arterioles, a condition which originally is no doubt nervous and depending upon vasomotor spasm, but which in the course of time becomes organic from thickening of the muscular and fibrous coats. This vasomotor derangement is a neurosis, associated with a general neurasthenic condition which certainly in some cases seems to have been caused by an attack of influenza. But influenza is not the only possible cause; the toxins of many other infections may be equally injurious. Summing up, he believes the condition to be a cerebrospinal neurasthenia, causing vasomotor spasm, with engorgement of the capillary and venous circulation, and congestion of the internal organs, especially of the liver and the spleen, with muscular weakness, loss of knee jerks, and mental impairment, shown by loss of memory, apathy, and drowsiness.

6. Whiskey and the Circulation.—Charteris and Cathcart have tested upon three healthy men, practically abstainers, the effect produced upon the circulation by corresponding doses of absolute alcohol and of pot and patent still whiskies. The action was studied by means of the pulse rate and of the peripheral

tension of the brachial and digital arteries. The dose given corresponded to one ounce of absolute alcohol, diluted four times. As a rule, this amount produced a distinct sedative action. The effect upon the pulse and pressure was very slight, and after the first ten minutes practically no difference could be detected between the action of absolute alcohol and the whiskies examined. In other words, the action of whiskey on the pulse and pressure depends upon its alcoholic content and not upon any special body distilled over either in the process employed in the manufacture of pot still whiskey, or in that used in the preparation of the patent still whiskey. No better rule is available than the old dictum that so long as alcohol reduces the pulse rate, steadies the heart, and increases its tone, the drug is doing good. Even in cases of great cardiac embarrassment there is no reduction of pressure.

7. Calcium in Pneumonia.—Cree thinks that until the time arrives when we shall be able to administer a suitable antitropine, our treatment of pneumonia must remain symptomatic; its object being to keep the patient alive until Nature has cured the disease. In the symptomatic treatment of pneumonia, calcium is a valuable drug in the hæmorrhagic type of cases, but is dangerous in the dry type of cases. As, in the latter type, death from toxæmia is to be feared, it would seem more rational to prescribe citrate of sodium or potassium, owing to their power of increasing the alkalinity as well as the fluidity of the blood.

8. Isolation of the Typhoid Bacillus.—Wilson's method for the isolation of typhoid bacilli from infected water is based on the evaporation of the water under reduced pressure. The typhoid bacilli are not harmed by the procedure, but multiplication occurs. The residual water is put on Conradi-Drigalski plates and cultured by the usual methods. The more or less anaerobic conditions prevailing and the high temperature favor the development of the typhoid bacillus, and are inhibitory to many water organisms.

9. The Parathyroid Glands.—Forsyth has studied the structure and secretion of the parathyroid glands in man, and arrives at the following conclusions: 1. The parathyroid gland, like other glands, presents the histological variations of activity and rest. The so called oxyphite cells are cells distended with granular secretion, and the so called principal cells represent the exhausted stage. Intermediate forms are common. 2. The granular secretion of the cells is extruded into the surrounding lymphatic spaces and often the product of many cells runs together to form a drop. This may either lie in an irregular space between the cells or occupy a central position around which the cells are grouped to form a vesicle. In either case the secretion passes into the smaller lymphatic vessels and gradually flows along larger vessels to reach the surface, whence it drains away from the gland. 3. The secretion of the parathyroid, both in its physical characters and in its microchemical reactions, appears indistinguishable from the colloid of the thyroid. 4. During the first few months of life the parathyroid glands show few if any signs of activity. By the end of the third month at latest colloid secretion may be found, though the infantile type may persist for some years.

LANCET

MAY 11, 1906

1. The Cancer Problem, By J. BLAND-SUTTON.
2. Pelvic Appendicitis with Parapneumothorax and Cystitis, By G. BARLING.
3. Some Notes on the Control of Supernormal Arterial Pressure, By G. OLIVER.
4. A Case of Chloroma, By F. M. POPE and W. E. REYNOLDS.
5. Diseases of the Upper Respiratory Passages in Relation to Life Assurance, By W. H. KELSON.

6. Some Clinical Observations on Mucomembraneous Colitis, By J. LIDDELL.
7. A Case of Chronic Hemiparesis, By J. LIDDELL.
8. A Note on the Albuminous Bodies Present in Pathological Secretions, By J. LIDDELL.

1. Cancer.—Bland-Sutton, in this article, considers the structural details which serve for the identification of malignant tumors. He divides such tumors into five groups: (1) The true cancers are those which arise from epithelium whether protective or secretory (glandular); (2) the chorion epithelioma which is derived from the epithelium of the chorionic villi out of which the placenta is formed; (3) the endotheliomata derived from the modified epithelium lining blood and lymph vessels and serous membranes; (4) sarcomata which grow from connective tissue, whether firm and dense like periosteum or so fine as the sustentacular tissue of the retina; and (5) a remarkable group of tumors known as malignant teratomata arising in perversion of the sex cell (malignant embryomata). There is no such thing as an absolute histological indication of malignancy; clinical and histological characters must be considered together. There are in every genus of connective tissue tumors forms which in their minute structure so closely resemble sarcomata that the most expert microscopist cannot give an opinion for or against malignancy. There is also often great difficulty in deciding between the tumor formations of syphilis and sarcomata.

2. Pelvic Appendicitis.—Barling reports the case of a man, aged forty-two years, suffering from pelvic appendicitis with parappendicular abscess and cystitis. The cystitis clearly arose by infection from the abscess on the left side of the pelvis, not by the pus bursting into the viscus, but apparently by continuity of tissue. The cystoscope failed to show any direct communication between the abscess and the bladder. Thorough evacuation and drainage of the abscess cured the cystitis without any additional remedial measures. Parappendicular suppuration is uncommon, but can hardly be described as rare. It appears to arise as follows: The inflammatory attack starting in the appendix involves a considerable area of the peritoneal cavity, most often the pelvic cavity and parts adjacent. The patient struggles on, part of the seropurulent fluid is absorbed and localized pockets of pus, well circumscribed by adhesions are left; the infection remains alive, but does not spread. One of these pockets of pus is usually but not always found around the adherent appendix, the other or others at some distance, but usually in the pelvic cavity.

3. High Arterial Pressure.—Oliver submits some of his conclusions regarding the treatment of high or supernormal arterial pressure in estimating the pressure by means of his own hæmomanometer which gives the systolic as well as the diastolic pressure. Diet. When the arterial pressure is high a diet should be selected which has the least stimulating effect on the circulatory organs. Not only the bulk of each meal should be reduced, but also the proportion of those food constituents which more particularly stimulate the cardiovascular apparatus, such as various salts, soluble extractives, active principles, and others bodies (*e. g.*, alcohol), which are directly absorbed without change and may be regarded as exogenous hormones between the digestive tract and the circulatory apparatus, stimulating the heart on the one hand and the capillary circulation on the other. The supply of meats should be lessened, and boiled forms should be substituted for roasted or fried fish, fowl, beef, etc. Meat extractives, such as meat soups, gravies, etc., should be excluded. Green vegetables and fruits should be increased. The reduction of the ingesta to physiological needs and expenditure is particularly important. The amount of

fluids taken with water should be reduced. "Hard" water is best avoided. Long continued indulgence in strong tea and coffee is injurious, but in moderation these beverages do no harm. High pressure cases are better without alcohol. As regards salt, the writer holds that the retention of chlorides in the tissues plays little if any part in the production of high arterial pressure. A saltless diet soon becomes most distasteful to the majority of patients. But when there is albuminuria and oedema, such a diet should be tried. The physiological effects of tobacco smoking on arterial pressure are due to the combined action of all the products of combustion as well as those portions of nicotine which may be directly absorbed. When the patient can give up the habit he should be encouraged to do so; but this is not easy for the habitual smoker. Absolute rest is often of the greatest value. It is the best sedative of exalted ventricular action. The periods of absolute rest required may vary from a day once or twice a week to even three or four weeks at a time. All sudden forms of exertion should be avoided, such as straining at stool, but the taking of regular, moderate, and equable exercise should be encouraged. The cardiovascular stimulation of exercise, however, should always be avoided just after a meal. The patient should then rest recumbent or semirecumbent for a good part of an hour. Bath treatment is often of value, especially when the water contains, or is charged, with certain chemicals. The d'Arsonval electrical current is also often beneficial. It is important to maintain the cutaneous circulation at its optimum efficiency. Warmth diverts to the skin a comparatively large volume of blood, and this lowers the arterial pressure. Cutaneous elimination should be encouraged, and a thorough perspiration obtained once or twice a week by means of a lamp, electric light, or Turkish bath. In most cases some medicinal treatment will also be required. It may be directed along one or other of the following lines: (1) To secure (a) free evacuation and correction of the liver and bowels and (b) gastrointestinal antiseptics; and (2) vasodilatation and sedation of the vasomotor nervous system.

ZENTRALBLATT FUER CHIRURGIE

May 11, 1907.

The Technics of Patellar Suture, By W. KAUSCH.

Technics of Patellar Suture.—Kausch, in exposing the patella for suture, makes a large elliptical incision with the convexity above and a vertical incision directly over the middle of the bone. These incisions give an excellent exposure of the bone not only, but of the joint as well. There need be no fear of the size of the flap of the skin and fascia, as good hæmostasis prevents any subsequent trouble. The patella is sutured with silver or aluminum bronze wire; it makes no difference which. Massage and passive movements are instituted within twenty-four hours of the operation. Before the wound is closed, the joint is flexed to see if the sutures in the bone hold well. If they do, which is usually the case, the joint is put up in flexion at an angle of from 100 to 110 degrees. Old fractures especially are bandaged in a flexed position. The author believes that his method hastens and secures functional healing.

May 18, 1907.

The Incision for Appendicitis, By A. WERTHEIM.

2. The Incision of the Abdominal Wall in Cœliotomy,

By P. J. DIAKONOFF.

3. The Incision for Appendicitis, By G. SCHWALBACH.

1 and 3. Abdominal Incisions.—Wertheim speaks of Krajewski's modification of Weir's incision for exposing the cæcal region. A cut is made from near the anterior superior spine across the abdomen almost to the umbilicus, at a right angle to the median line. The external sheath of the rectus and the aponeurosis of

the external oblique are incised, while the fibres of the latter muscle are separated in the direction in which they run. The edge of the rectus muscle is then drawn aside with blunt hooks as it is in the original McBurney method.—Schwalbach states that he operated by McBurney's method in 1903 without knowing that McBurney had employed it.

ZENTRALBLATT FUER GYNAEKOLOGIE.

May 11, 1907.

The Treatment of Eclampsia by Renal Decapsulation, By C. J. GAUSS.

1. Renal Decapsulation in Eclampsia.—Gauss records two severe cases of eclampsia cured by renal decapsulation, although in one *accouchement forcé* was done, in the other vaginal Cæsarean section was performed, in order to effect delivery. While the author's paper is too lengthy for detailed abstraction, his conclusions may be stated as follows: He considers that *accouchement forcé* and renal decapsulation are to be combined in the treatment of eclampsia, as each is often useless in itself, while the two measures combined are helpful. As immediate delivery is often sufficient to save life, this might first be tried; but if it is not availing, decapsulation of the kidneys must be done at once. Since, however, any therapeutical measure in eclampsia may require some hours to show its good effects, it is advisable, in view of the gravity of the emergency, to do both operations at one sitting. This cannot be considered too radical, as decapsulation of both kidneys requires only from twenty to thirty minutes. Moreover, since no one has published statistics of a series of cases of eclampsia with more than 20 per cent. of cures, it behooves us to be more radical than formerly in our treatment, and, in the author's opinion, to combine immediate delivery and renal decapsulation as soon as the diagnosis is established, after the very first attack, if possible.

May 18, 1907.

1. Pubiotomy in Private Houses, By W. SIGWART.

2. The Establishment of an Artificial Anus to Prevent a Colon Bacillus Pyelitis After Rectal Implantation of the Ureters Into the Rectum, By KRÖNIG.

3. Prophylaxis of Acquired Gynatresias, By H. VON DERERA.

4. A New Obstetrical Forceps, By N. J. A. F. BÖRMA.

2. Rectal Implantation of the Ureters.—Krönig observes that nearly all women whose ureters have been implanted in the rectum during operations for cancer of the uterus or of the cervix, have died shortly afterward from a severe pyelitis in which the colon bacillus was the causative organism. He reports a case of sarcoma of the uterus and vagina in which the trigone of the bladder was also involved. At the first operation he established an artificial anus on the left side. The second operation included a radical operation for the removal of the neoplasm, the ureters being implanted side by side in the rectum. The functional result was immediately a good one; there had been no renal complication, and the patient was in good health up to the time of report.

3. Gynatresias.—Von Derera records two cases of acquired vaginal atresia, with hæmatometra and hæmatosalpinx, one due to typhoid fever, the other to smallpox, early in life. The author advises prophylactic and therapeutic measures in all cases of infectious disease in little girls, especially in instances of gonorrhœa. He believes that female infants should have the vagina treated with silver solution, in the same way the eyes are, in cases in which the mother has a suspicious discharge. Most atresias arise from vulvovaginitis in early life, and it is mainly in these instances in which the physician is able to exert rational prophylactic treatment, thus avoiding many of the serious and dangerous complications which the atresias give rise to later in life.

LA RIFORMA MEDICA

April 11, 1907.

1. *Contribution à l'étude de l'effet de la Roentgen Rays Upon the Bacilli of Tuberculosis.* By L. A. ALLARIC and G. ROYER.
2. *Antituberculous Action of Marmorek's Serum.* By G. R. RUBINSTEIN.
3. *Calcanodyn timer in Connection with Hypertrophy of the Tuberosity of the Os Calcis.* By A. K. JANOWSKY.
4. *Intermediate Perineorrhaphy.* By A. V. TCHERNOFF.
5. *The Normal Distribution of Electrocutaneous Sensibility in Man.* By G. M. MAKAROFF.
6. *A Case of Paralysis of the Recurrent Nerve on the Left Side in Connection with Lead Poisoning.* By R. ROUSSKY.

1. Roentgen Rays in Tuberculous Peritonitis.—

Allaric and Royer do not think that Roentgen rays are of such benefit in tuberculous peritonitis as has been asserted. They present two cases in which they found that the X rays did not check the disease, but on the contrary, favored its extension, and even increased the virulence of the bacilli. The Röntgen rays have been shown experimentally to have no effects as bactericides in vitro. In the first case the treatment produced a disappearance of the effusion, but did not check the progress of the infection. In the second case the treatment did not seem to have any effect.

ROUSSKY VRATCH

April 11, 1907.

1. *Infection with Tuberculosis Through the Subcutaneous Tissue, the Blood, and Principally the Intestines.* By A. D. PAVLOVSKY.
2. *Observations on the Action of Marmorek's Antituberculosis Serum.* By G. R. RUBINSTEIN.
3. *Calcanodyn timer in Connection with Hypertrophy of the Tuberosity of the Os Calcis.* By A. K. JANOWSKY.
4. *Intermediate Perineorrhaphy.* By A. V. TCHERNOFF.
5. *The Normal Distribution of Electrocutaneous Sensibility in Man.* By G. M. MAKAROFF.
6. *A Case of Paralysis of the Recurrent Nerve on the Left Side in Connection with Lead Poisoning.* By R. ROUSSKY.

1. **Mode of Invasion in Tuberculosis.**—Pavlovsky says that there are two types of tubercle bacilli, the human type and the bovine, but both are variants of the same species. The first produces miliary tuberculosis, the second intestinal and peritoneal tuberculosis in man, but the result of the infection in each case depends upon the virulence of the germ and the resistance of the body. The bovine type of bacilli is found in the sputum in some cases of pulmonary tuberculosis. Calmette's experiments on goats with inoculations of human and bovine bacilli show conclusively that there are differences between the two types. Both types, however, can be present in man. Weber recently showed that man can be infected with tuberculosis of cattle, and there are about fourteen accurately observed cases on record of tuberculosis in children who have become infected through milk of tuberculous cows. It remains now to study clinically and experimentally in man the two types, the bovine and the human, of tuberculosis. This is the crux of the problem. The author's own experiments showed that human tubercle bacilli spread very rapidly from the subcutaneous tissue into the spleen, and from the blood into the urine. By feeding guinea pigs with human tubercle bacilli he confirmed Behring's results, showing that the lungs can be infected through the intestinal route. Tubercle bacilli are not inhaled, but are swallowed, some of them enter into the mucosa of the mouth and throat, and infect the glands in the neck. In the body the bacilli travel from gland to gland until they reach the large lymphatics and the blood. They are carried with the lymph current, or are moved about by the white cells. The study of tuberculosis requires much experimental work, and the old theories require much more convincing proofs before we can go back to them.

2. **Marmorek's Antituberculosis Serum.**—Rubinstein treated fifteen patients with Marmorek's tuberculosis serum, and did not obtain encouraging results.

In one patient the improvement was obtained, but this was a man with tuberculous glands which disappeared after the treatment. In the other patients there was some improvement in the general condition, but it could not be ascribed to the serum. Rubinstein concludes that Marmorek's serum is chiefly useful in surgical tuberculosis.

4. **Intermediate Perineorrhaphy.**—Tchernoff does not believe in suturing the perineum at once after delivery, and thinks that better results are obtained when the operation is performed from two to seven days after labor. In seventy cases thus treated he obtained very good results. In a large lying in asylum for a number of years the immediate perineorrhaphy gave an average of 6.3 per cent. complete failures and 11.7 per cent. partial healing. On the other hand, late perineorrhaphy gave much better results. The possible infection of the organism through the wound if the latter be left open after delivery is not to be feared, as the perineal wound can be kept clean and aseptic by antiseptic methods and always drains free.

THE BRITISH JOURNAL OF DERMATOLOGY

Color and Disease. A Contribution to the Art of Cutaneous Diagnosis. By E. J. ROBERTS.

Color and Disease.—Roberts observes that the field of diagnosis in skin diseases embraces four orders of facts: 1. The changes in the quality of light reflected and emitted from the skin. 2. The lines along which the eruption is distributed. 3. The governing lines of growth of the spots and patches. 4. The relation of the eruption to the individual. Every change in the texture, density, and opacity of the skin is revealed by a change in one or more of three constant properties of the light which is reflected and emitted from it. Therefore the chief aim and bent of a natural system of diagnosis should be to perceive and note the exact hues, tints, shades, as well as the luminosity of the light reflected and emitted by the healthy and diseased skin. The next step is to connect these qualities of light with the altered texture of the epidermis and underlying tissues. But it should be remembered that this art of reading certain pathological meanings into the eruption is not a matter of perception, but one of experience. The author compares his system of diagnosis with the system of Willau and Hebra. His system requires of us to abandon the idea of an eruption as a botanical efflorescence and the classing of disease into species and genera. It requires of us to leave the primary and secondary lesions as useless derelicts of ancient dermatology; and, further, it implies that a minute verbal description of the so called efflorescence, which is the method now in vogue, is not a natural system of diagnosis. But it differs also from the old system in many ways. It distinguishes one sign from another, as Nature herself does, by making one principal and the others grouped around it in subordination to it. It teaches that the patch is a living thing, and displays to the observant eye its governing lines of action. By watching minutely these lines of action, we focus our attention on the inmost working of Nature. If we compare one eruption with another, and find their lines of action dissimilar, then it follows with the unerring logic of Nature that these eruptions denote different diseases, and, conversely, when we find several eruptions displaying the same lines of action, we know that Nature has drawn no essential distinction between them, and hence the variation of color and form, however conspicuous they may be, are entirely subordinate, and must be appraised accordingly. Again, the system directs attention to the interoperation of the lines of action of one patch on another patch, and this is the way we best learn how to perceive their diagnostic character.

THE SCOTTISH MEDICAL AND SURGICAL JOURNAL.

May 1907.

1. The Action of Digitalen on the Circulation,
By E. J. MACLEOD NEAVE.
2. The Uses and Limitations of Argyrol in Ophthalmic Practice,
By ANGUS MCGILLIVRAY.
3. Remarks on the Treatment of Acute Otitis Media,
By HENRY PETERKIN.
4. The Treatment of Gonorrhoea by Irrigation,
By J. S. PURDY.
5. Some Notes on the Treatment by Tuberculin (T. R.) of Tuberculosis Among Children in the Royal Aberdeen Hospital for Sick Children. By J. MCINTOSH.

1. **The Action of Digitalen on the Circulation.**—Neave, from experiments with digitalen on frogs, concludes that it produces the characteristic actions of digitalis; but it is less powerful and much more expensive than the official tincture of digitalis. It is also much less powerful than corresponding quantities of crystalline digitoxine. It is less irritant than these preparations, but it is doubtful if it possesses any other advantages.

2. **The Uses and Limitations of Argyrol in Ophthalmic Practice.**—McGillivray states that argyrol is one of the most valuable remedies at the disposal of the ophthalmic surgeon in the treatment of certain conjunctival and tear duct affections, for it is the only remedy the author knows of that can cure efficiently, without pain and discomfort to the patient, and without trouble or anxiety to the surgeon.

3. **Remarks on the Treatment of Acute Otitis Media.**—Peterkin remarks that the membrane should be incised early and freely. Hydrogen peroxide is of great value in the treatment of the suppuration. The insufflation of boric acid or any other powder should not be entrusted to the patient. The opening of the mastoid antrum should not be delayed until the patient's hearing is irreparably damaged. Since the patient frequently does not know whether or not the ear is still discharging, the physician should make a point of satisfying himself that the condition is cured.

Book Notices.

A Treatise on the Principles and Practice of Medicine.
By ARTHUR R. EDWARDS, A. M., M. D., Professor of the Principles and Practice of Medicine and of Clinical Medicine in the Northwestern University Medical School, Chicago, etc. Illustrated with 101 Engravings and 19 Plates. Philadelphia: Lea Brothers & Co., 1907. Pp. vi-1328. (Price, \$5.50.)

There are so many treatises on the principles and practice of medicine in the field that a newcomer is closely scrutinized. Dr. Edwards's book can well endure such inspection. It is well arranged and the system intelligently carried out. Each malady is treated according to a fixed rule: Definition, ætiology, predisposition, symptoms, complications, diagnosis, prognosis, and treatment. The index is very good, so that with a thorough system and a good index much time is saved in looking up a given disease in a book containing 1,277 pages. The subject is divided into eleven sections: Specific infections; diseases of the circulation; diseases of the respiratory tract; diseases of the digestive tract; diseases of the kidney; diseases of the blood; diseases of the ductless glands; constitutional diseases; diseases of the nervous system; intoxication and sunstroke; and diseases due to animal parasites. Under the head of treatment in each disease many a valuable prescription is to be found. The illustrations are well chosen, and their execution is good.

Practical Physiological Chemistry. A Book Designed for Use in Courses in Practical Physiological Chem-

istry in Schools of Medicine and of Science. By PHILIP B. HAWK, M. S., PH. D., Demonstrator of Physiological Chemistry in the Department of Medicine of the University of Pennsylvania. With Two Full Page Plates of Absorption Spectra in Colors, Four Additional Full Page Color Plates, and One Hundred and Twenty-six Figures, of Which Twelve Are in Colors. Philadelphia: P. Blakiston's Son & Co., 1907. Pp. 416. (Price, \$4.)

The subtitle of this eminently practical and well arranged textbook is hardly sufficiently descriptive of its scope; for it is one which can be used for reference, especially with regard to formulas and methods of examination, in a way that is impossible with most books which deal with the old but ever new and many sided subject of physiological chemistry. The first thirty-two pages are taken up with a study of the carbohydrates which is remarkable for a conciseness of statement united with comprehensiveness of treatment that allows nothing of importance to be overlooked. The definition of a carbohydrate is first given in the simplest of terms. Carbohydrates are called such for the reason that they contain the elements C, H, and O, the H and O being present in the proportion to form water. The more common carbohydrates are described, together with tests for their recognition and determination. This chapter is embellished with colored reproductions of photomicrographs of the osazons—products of the phenylhydrazin reaction, consisting of two molecules of phenylhydrazin combined with one molecule of a sugar.

The accuracy and simplicity of statement which characterize the opening chapter are preserved throughout the volume. There is an excellent chapter on Decomposition Products of Proteids, in which are shown a photograph of the Fischer apparatus and photomicrographs of the more characteristic bodies found among the decomposition products of proteids, both colored and in half tone. As too much importance cannot be attached to the study of bile and the fæces, the last named especially, in the treatment of certain diseased conditions, it is satisfactory to note the amount of space which has been given to them by the author. Fæces are considered in a separate chapter, and the methods described for the collection and examination of specimens leave nothing to be desired, save perhaps a little more detail. (A considerable amount of preliminary knowledge of the subject seems presupposed on the part of the one who uses the book, but, then, the fact should not be overlooked that the book is intended for use in schools, and that the chapter on Fæces begins at page 139; by the time the student has reached this part of the book it may be assumed that details of chemical reactions are not necessary to him.) The chemistry of blood is exhaustively considered, as compared with other bodily products, forty pages being devoted to it, with colored and half tone pictures in the text. It may be remarked, too, that the subject of solid tissues (Chapters XIII, XIV, and XV) is very fully treated. There is, of course, a chapter on Urine, the new cryoscopic method of determination being fully explained by text and figures in the opening part of a treatise on uranalysis—chemical, physiological, and pathogenic—which is remarkable for its comprehensiveness of treatment and fulness of detail. It extends over six chapters, occupying 153 pages. The closing chapter is occupied with a description of methods for the quantitative analysis of milk, gastric juice, and blood. In an appendix is given a formulary of the reagents named in the text.

The illustrations and letter press fully maintain the excellent reputation of the publishers, the only criticism that might be made being that the paper employed is too heavy for ease in handling.

BOOKS, PAMPHLETS, ETC., RECEIVED

A Handbook of Salt Production and Purification. By Arthur Williams, M. D. Chemical and Sanitary Engineer. 100 Pages. 1907. G. B. Putnam's Sons, New York, 1907.
 American and European Medical, Dental, and Veterinary Literature. By William H. C. Sullivan, M. D. 1907. American Veterinary Association, Washington, D. C., 1907.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following is a list of reports received from the various stations of the Public Health and Marine Hospital Service, for the month of May, 1907.

Place	Date	Cases	Deaths
California—San Francisco	May 11-18	1	
Florida—Duval County, Jacksonville	May 11-18	2	
Florida—Hillsboro County, Tampa	May 11-18	4	
Illinois—Chicago	May 11-18	13	
Illinois—Danbury	May 16-23	4	
Illinois—Springfield	May 16-23	2	
Indiana—Elkhart	May 11-18	6	
Indiana—La Fayette	May 16-23	1	
Indiana—South Bend	May 11-18	1	
Kansas—Kansas City	May 11-25	1	
Kentucky—Covington	May 15-22	1	
Kentucky—Lexington	May 16-23	4	
Louisiana—New Orleans	May 11-18	1	Imported
Massachusetts—Lawrence	May 11-18	1	
Michigan—Detroit	May 18-25	4	
Minnesota—St. Paul	May 11-18	5	
New York—Niagara Falls	May 11-18	1	
North Carolina—Greensboro	May 11-18	1	
South Carolina—Columbia	May 11-18	1	
Texas—Austin	May 15-24	1	Imported
Texas—Laredo	May 13-17	1	Imported
Texas—San Antonio	May 4-11	1	
Washington—Spokane	May 11-18	20	Imported
Wisconsin—Milwaukee	May 11-18	6	
S. S. Hannover			
Brazil—Manaos	Apr. 27-May 4	10	
Brazil—Para	Apr. 27-May 11	6	
Brazil—Pernambuco	May 15-31	60	
Chile—Coquimbo	Apr. 27	1	
Chile—Iquique	Apr. 27	1	Present
China—Hongkong	Apr. 6-13	20	
China—Canton	Apr. 28-29	2	
France—Marseilles	Apr. 1-30	170	
France—Nantes	Apr. 1-30	15	
France—Paris	May 4-11	12	
Germany—General	Apr. 28-May 4	9	
Great Britain—General	May 4-11	5	
Great Britain—Southampton	May 4-11	1	
Holland—Rotterdam	Apr. 27-30	1	
Holland—General	May 2-9	50	
Mexico—Puebla	May 5-12	2	
Mexico—Mexico City	Apr. 20-27	16	
Portugal—Lisbon	May 4-11	9	
Russia—Odessa	Apr. 20-27	7	
Russia—Riga	Feb. 1-28	6	
Russia—Riga	Apr. 27-May 4	16	
Spain—Barcelona	May 1-19	3	
Spain—Cadiz	Apr. 1-30	3	
Spain—Huelva	Apr. 1-30	4	
Spain—Savilla	Apr. 1-30	3	
Spain—Valencia	Apr. 28-May 4	2	
Turkey—Bagdad	Apr. 6-13	Present	
Yemen—Zanzibar			
Brazil—Manaos	Apr. 20-27	1	
Brazil—Para	Apr. 28-May 4	9	
Cape Verde—N. P. H. H. H. H.	May 21	1	
West Indies—Trinidad, Port of Spain	May 4-11	2	
India—Bombay			
India—Bombay	Apr. 23-30	2	
India—Rangoon	Apr. 1-30	9	
Hawaii—Honolulu			
Hawaii—Honolulu	May 22	1	
Arabia—Bahrien Island			
Arabia—Bahrien Island	Apr. 21-27	7	
Arabia—Camaran	Apr. 19-30	4	
Brazil—Para	May 4-11	1	
Brazil—Pernambuco	May 15-31	1	
China—Hongkong	Apr. 6-13	20	
China—Canton	Apr. 28-29	2	
France—Marseilles	Apr. 1-30	170	
France—Nantes	Apr. 1-30	15	
France—Paris	May 4-11	12	
Germany—General	Apr. 28-May 4	9	
Great Britain—General	May 4-11	5	
Great Britain—Southampton	May 4-11	1	
Holland—Rotterdam	Apr. 27-30	1	
Holland—General	May 2-9	50	
Mexico—Puebla	May 5-12	2	
Mexico—Mexico City	Apr. 20-27	16	
Portugal—Lisbon	May 4-11	9	
Russia—Odessa	Apr. 20-27	7	
Russia—Riga	Feb. 1-28	6	
Russia—Riga	Apr. 27-May 4	16	
Spain—Barcelona	May 1-19	3	
Spain—Cadiz	Apr. 1-30	3	
Spain—Huelva	Apr. 1-30	4	
Spain—Savilla	Apr. 1-30	3	
Spain—Valencia	Apr. 28-May 4	2	
Turkey—Bagdad	Apr. 6-13	Present	

Public Health and Marine Hospital Service:

Commissioned and Noncommissioned Officers of the United States Public Health and Marine Hospital Service, for the month of May, 1907.

ANDERSON, JOHN F., Passed Assistant Surgeon. Directed to proceed to Savannah, Ga., for special temporary duty in connection with the outbreak of typhoid fever.
 BAILEY, C. W., Acting Assistant Surgeon. Granted an extension of leave of absence for two days, from May 1907.

BERRY, T. D., Passed Assistant Surgeon. Granted leave of absence for two days, from May 1907.

BURKHALTER, J. T., Passed Assistant Surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to Baltimore, Md., reporting to the medical officer in command for duty and assignment to quarters.

GLASCOCK, ALFRED, Acting Assistant Surgeon. Granted an extension of leave of absence for two days, from May 1907.

HUNTER, W. R., Acting Assistant Surgeon. Granted leave of absence for two days, from May 25, 1907.

McCoy, G. W., Passed Assistant Surgeon. Directed to proceed to Bransford, and other places in Tennessee, for special temporary duty, upon completion of which to rejoin his station at the Hygienic Laboratory.

McINTOSH, W. P., Surgeon. Granted leave of absence for one day, May 24, 1907.

McLAUGHLIN, A. J., Passed Assistant Surgeon. Granted leave of absence for two months, from July 1, 1907.

MULLAN, E. H., Assistant Surgeon. Granted leave of absence for two days, from June 18, 1907.

OLSEN, E. T., Assistant Surgeon. Relieved from duty at Chicago and directed to proceed to Ellis Island, N. Y., reporting to the Chief Medical Officer for duty.

OWEN, HENRY, Acting Assistant Surgeon. Granted leave of absence for thirty days, from June 1, 1907.

ROBINSON, D. E., Passed Assistant Surgeon. Relieved from duty at Baltimore, and directed to proceed to Ellis Island, N. Y., reporting to the Chief Medical Officer for duty.

ROSENAU, M. J., Passed Assistant Surgeon. Detailed to attend the meeting of the American Medical Association, and also the Section in Pathology and Physiology, June 4 to 8, 1907.

TARBELL, B. C., Acting Assistant Surgeon. Granted leave of absence for ten days, from April 15, 1907.

WATSON, H. J., Acting Assistant Surgeon. Relieved from duty at Baltimore, on account of sickness, from January 22, 1907; granted leave of absence for thirty days, from January 21, 1907.

WHITE, J. H., Surgeon. Detailed to attend the meeting of the American Society of Tropical Medicine, Philadelphia, Pa., June 7, 1907.

WICKES, H. W., Passed Assistant Surgeon. Directed to proceed to Perth Amboy, N. J., on June 18th, for the purpose of assuming temporary charge of the Service during the absence of Assistant Surgeon Mullan.

WILLE, C. W., Passed Assistant Surgeon. Granted leave of absence for eight days, from May 12, 1907.

WRIGHT, F. T., Acting Assistant Surgeon. Granted leave of absence for fifteen days, from May 28, 1907, and excused for a further period of fifteen days, without pay, from expiration of said leave.

Board Convened.

A board of medical officers was convened, to meet at Vancouver, B. C., on June 8, 1907, for the purpose of examining a person suspected of being afflicted with trachoma. Detail for the board: Surgeon W. G. Stimpson, chairman; Passed Assistant Surgeon J. H. Coakley and Passed Assistant Surgeon W. C. Billings, recorders.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, June 1, 1907:

- ARTHUR, W. H., Major and Surgeon. Detailed to represent the Medical Department of the United States Army at the fifty-eighth annual meeting of the American Medical Association, to be held at Atlantic City, N. J., June 1, 1907.
- BOSLEY, J. R., First Lieutenant and Assistant Surgeon. Granted seven days' leave of absence.
- BOURKE, JAMES, First Lieutenant and Assistant Surgeon. Relieved from duty on the *Sumner* and assigned as surgeon of the *Kilpatrick*.
- GIRARD, JOSEPH B., Colonel and Assistant Surgeon General. Relieved from duty as chief surgeon of the Department of the Gulf; will proceed to San Antonio, Texas, and report for duty as chief surgeon of the Department of Texas, upon the departure of Colonel Louis M. Maus, assistant surgeon general.
- GRAY, W. W., Lieutenant Colonel and Deputy Surgeon General. So much of paragraph 14, S. O. 91, April 18, 1907, War Department, as directs him to proceed to Omaha, Neb., for duty as chief surgeon of the Department of the Missouri is revoked, and he will report for duty as chief surgeon of the Department of the Gulf.
- HATHAWAY, L. M., First Lieutenant and Assistant Surgeon. Granted leave of absence for thirty days.
- HOWARD, D. C., Major and Surgeon. Relieved from duty at the Army General Hospital, Washington Barracks, D. C., and ordered to Philippine Islands, for duty on the transport sailing from San Francisco, Cal., about September 5, 1907.
- LAMBERT, S. E., First Lieutenant and Assistant Surgeon. Left Fort Logan, Colo., on thirty days' leave of absence.
- LITTLE, W. L., First Lieutenant and Assistant Surgeon. Granted two months' leave of absence, to take effect about August 1, 1907.
- MEARNS, E. A., Major and Surgeon. Relieved from duty in the Philippines Division, about August 15, 1907, and ordered to Fort Totten, N. Y., for duty.
- MILLER, E. W., First Lieutenant and Assistant Surgeon. Assigned to temporary duty as surgeon of the *Kilpatrick*, during the voyage beginning May 22nd, from Havana, Cuba, to Newport News, Va., and return to Cuba.
- MORRIS, E. R., Major and Surgeon. Granted three months' leave of absence, on surgeon's certificate of disability.
- POWELL, JUNIUS L., Major and Surgeon. Relieved from duty in the Philippines Division, about August 15, 1907, and ordered to Fort Ethan Allen, Vt., for duty.
- RUSSELL, F. F., Captain and Assistant Surgeon. Detailed to represent the Medical Department of the Army at the fifty-eighth annual meeting of the American Medical Association, to be held in Atlantic City, N. J., June 1, 1907.
- SMART, ROBERT, First Lieutenant and Assistant Surgeon. Honorably discharged from the service of the United States, to take effect on June 29, 1907.
- VEDDER, EDWARD B., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Douglas, Utah, and ordered to Fort Walla Walla, Wash., for duty.
- WHALEY, A. M., First Lieutenant and Assistant Surgeon. Ordered to accompany the 26th Infantry from Fort Sam Houston, Texas, to San Francisco, Cal., and then to return to his post.
- WILLCOX, CHARLES, Major and Surgeon. Granted thirty days' leave of absence.
- The following named medical officers will be relieved from duty in the Philippines Division, about August 15th, and will proceed to San Francisco, Cal., for orders:
- CULLER, R. M., First Lieutenant and Assistant Surgeon.
- FREEMAN, P. L., First Lieutenant and Assistant Surgeon.
- GOSMAN, G. H. R., Captain and Assistant Surgeon.
- MORSE, A. W., Captain and Assistant Surgeon.
- OWEN, L. J., First Lieutenant and Assistant Surgeon.
- WEED, F. W., First Lieutenant and Assistant Surgeon.
- ZINKE, S. G., First Lieutenant and Assistant Surgeon.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending June 1, 1907:

- BUTTS, H., Assistant Surgeon. Ordered to the *Maryland*.
- COHN, I. F., Assistant Surgeon. Ordered to the *El Cano*.
- DECKER, C. J., Surgeon. Sick leave further extended three months, from May 23, 1907.
- EYTINGE, E. C. J., Assistant Surgeon. Detached from the *El Cano* and ordered to the *Concord*.
- GRAYSON, C. T., Assistant Surgeon. Detached from the *Maryland* and ordered home.
- KOLTES, F. X., Assistant Surgeon. Ordered to the Navy Yard, Mare Island, Cal.
- MARSTELLER, E. H., Surgeon. Sick leave further extended six weeks, from May 28, 1907.
- NEVILLE, R. P., Pharmacist. Having been examined by the retiring board and found incapacitated for active service, on account of disability incident thereto, is retired from active service on May 23, 1907, under provisions of Section 1453 R. S.
- OWENS, W. D., Assistant Surgeon. Detached from the *Villalobos* and ordered home.
- RAISON, T. W., Assistant Surgeon. Ordered to the *West Virginia*.
- RICHARDSON, R. R., Passed Assistant Surgeon. Detached from the *Boston*, when placed out of commission, and ordered to the *Albany*.
- SMITH, W. B., Passed Assistant Surgeon. Detached from the *Raleigh* and ordered to the *Helena*.
- STOOPES, R. E., Assistant Surgeon. Detached from the *Concord* and ordered home.
- WHEELER, L. H., Assistant Surgeon. Detached from the *Helena* and ordered to the *Raleigh*.
- WINN, C. K., Assistant Surgeon. Ordered to the *Villalobos*.

Births, Marriages, and Deaths.

Born.

MORRIS.—In Washington, D. C., on Monday, May 27th, to Dr. S. J. Morris, United States Army, and Mrs. Morris, a son.

Married.

ADAMS—CRADY.—In Louisville, Kentucky, on Tuesday, May 21st, Dr. Fenton T. Adams and Miss Evelyn Crady.

BAGGS—HENRY.—In Philadelphia, on Wednesday, May 20th, Dr. Albert Nicholas Baggs and Miss Adeline McKean Henry.

CHAPIN—DELAFIELD.—In Annandale-on-the-Hudson, N. Y., on Saturday, June 1st, Dr. Henry Dwight Chapin, of New York, and Miss Alice Delafield.

FIELD—FIELD.—In Dallas, Texas, on Saturday, May 11th, Dr. James G. Field, United States Navy, and Miss Laura Field.

JAYNES—FERGUSON.—In New Hartford, Iowa, on Monday, May 20th, Dr. E. T. Jaynes and Miss Mabel Ferguson.

SHEPARD—MYERS.—In Brooklyn, N. Y., on Wednesday, May 15th, Dr. A. Warner Shepard and Miss Mary Sniffen Myers.

Died.

COLLET.—In Fall River, Massachusetts, on Wednesday, May 22nd, Dr. Peter A. A. Collet, aged sixty years.

DENNIS.—In Minneapolis, Minnesota, on Wednesday, May 22nd, Dr. George E. Dennis, aged sixty-seven years.

DURRIE.—In New York, on Saturday, June 1st, Dr. George Boice Durrie.

GRAY.—In Rochester, N. Y., on Tuesday, May 28th, Dr. James Gray, aged forty-five years.

NORRIS.—In Paris, France, on Friday, May 31st, Dr. J. W. S. Norris, of Belair, Maryland.

O'REILLY.—In Elizabeth, N. J., on Tuesday, May 28th, Dr. Edward R. O'Reilly, aged forty-five years.

THACHER.—In New York, on Friday, May 31st, Dr. Chester I. Thacher, of Chicago.

WATSON.—In Flatbush, Brooklyn, N. Y., on Sunday, May 26th, Dr. George H. Watson, aged fifty-nine years.

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TRAUMATISM AS AN ÆTIOLOGICAL FACTOR IN APPENDICITIS.*

BY JOHN B. DEEVER, M. D.,
Philadelphia, Pa.

The question of the relations existing between traumatism and the ætiology of appendicitis has of late awakened an unusual amount of interest among surgeons on account of the medicolegal aspects of the subject and also on account of its relations with the accident insurance companies. That this is a matter of considerable importance is shown by the cases which have been reported from time to time, tending to prove that direct or indirect injury is frequently the cause of an acute attack of appendicitis. In many of these cases the attack had immediately followed a direct blow or fall upon the abdomen, in others the attack had supervened upon prolonged exertion or a sudden strain of the abdominal or ileopsoas muscles. Not only is it a subject of considerable medicolegal importance, but arguing from cause and effect, when an acute attack of appendicitis follows directly upon the receipt of a local injury, the liability of accident insurance companies must receive careful consideration. The question of criminal prosecution also enters into the subject, as cases occur from time to time in which an acute attack of appendicitis, ending fatally, are preceded by a blow or kick upon the abdomen. In these cases a most careful inquiry into the history of the acute attack and especially an investigation, from definite previous attacks, must be made.

It is a well recognized fact among the laity that considerable importance is placed upon an injury which may have preceded the onset of any disease, especially those of a surgical nature. This is well illustrated by the history frequently given by the patient or his friends, that the lesion immediately followed the receipt of an injury. This is especially so in tuberculous bone and joint disease, tumors, and various obscure lesions of the abdominal viscera. The true importance of injury, therefore, should always be carefully considered in all cases, but undue stress should not be placed upon it as an ætiological factor in the production of disease without the most careful and painstaking investigation. What is here stated of all surgical lesions is especially important in considering the ætiology of appendicitis.

In discussing the part traumatism may play in

the production of acute or recurrent attacks of appendicitis, it appears advisable to consider two questions:

1. Is it possible for injury, direct, as a blow or fall upon the abdomen, or indirect, as by muscular contractions of the abdominal or ileopsoas muscles, to produce in a perfectly healthy appendix an acute attack of appendicitis?

2. Is it possible for injury to produce an acute attack of appendicitis when the appendix is diseased?

In answering the first question I would like to state that I have never seen a case of acute appendicitis occur in which injury was alleged as the direct exciting cause in an appendix that did not show some evidence of previous disease. The question of how a blow or fall or a strain of the abdominal or ileopsoas muscles can have any direct effect upon this organ, lying as it does somewhat freely in the right iliac fossa and well protected by the hollow viscera and the abdominal walls, must be problematical. It is a notable fact that most writers who have reported cases of appendicitis in which they state that traumatism can cause an acute attack rarely if ever give their reasons for making such a statement. In most cases they produce no evidence to prove whether the injury actually preceded an attack of appendicitis in a healthy organ, or merely was the exciting cause of an acute attack in an appendix already diseased. In all the cases reported in the literature it is probable that the appendix was already diseased, and a careful study of these cases in detail will show that in a very large percentage of cases there is evidence to prove that previous pathological changes had occurred in the appendix which were not recorded in the histories, or were shown to be present by an examination of the changes found in and about the appendix at operation or at autopsy. We all know that foreign bodies, fecal concretions, strictures of the appendix, adhesions, etc., are frequently present without ever giving the patient any trouble or suggestion of any lesion in the right iliac fossa. This is shown by examination of appendices which have been removed when operations have been performed on other viscera and the appendix has been removed as a prophylactic measure, and also in many found at autopsy. It can readily be seen how such conditions would lead to error in cases in which a history of a previous attack was not obtainable, and in which an acute attack supervened upon an injury.

The second question can readily be answered with more assurance. It is possible in an appendix, which is the seat of previous disease, that an injury can produce an attack of acute appendicitis.

* Read before the Medicolegal Society of Philadelphia, April 30, 1907.

If direct violence is applied to the right iliac region or if there is prolonged or violent contractions of the abdominal or ileopsoas muscles over an appendix which contains faecal concretions, is dilated, flexed, or firmly adherent to the neighboring viscera or the parietes, we can readily see how an acute attack can be brought on by producing a tear in the mucous membrane and thereby allowing the virulent organisms in the appendix to find a suitable means of producing rapid gangrene and perforation of the organ. It is also possible that an appendix which is acutely flexed contains faecal concretions, is completely stenosed and dilated beyond the point, or firmly adherent to neighboring structures, that a rapid obliterating endarteritis of its vessels may be produced by traumatism.

In studying the ætiology of appendicitis, and especially the part traumatism may play as an ætiological factor, it will be well to shortly review some salient points of the anatomy, physiology, bacteriology, and pathology of the appendix.

Anatomy.—The appendix vermiformis cæci is an atrophied viscera, the rudimentary remains of the lengthened cæcum found in all mammalia excepting man and some of the higher forms of quadrumana. It is usually attached to that point of the cæcum which was originally the apex of the cæcum, near the ileocæcal valve on the posterior and inner surface of the cæcum. Occasionally it may be a continuation of the long axis of the colon. It is also sometimes seen between two bulging sacculi, and exceptionally the base of the appendix is posterior to the inferior angle of the junction of the ileum and cæcum. It is in effect a diverticulum from the head of the cæcum, and retains to a great extent the structures of the large intestine. The appendix varies in length from one to nine inches, having an average of about three and a half inches. Its diameter is about that of a goosequill. There is generally found a mesoappendix which extends from one half to two thirds of its distance, and thus continues as a finger like prolongation to the tip of the organ; when the mesentery is very short or absent the appendix may be straight and at times the organ may be curved or sharply flexed when the mesoappendix is apparently too short for the appendix. At times a shortened mesoappendix may cause the appendix to assume a succession of curves or a corkscrew shape.

The vermiform appendix is composed of four coats: (1) A serosa or peritonéal covering; (2) a muscularis, composed of an outer longitudinal and inner circular layer of muscular fibres; (3) a submucosa; and (4) a mucosa. The histology of these four coats is similar to that of the four coats of the large intestine, excepting for the greater amount of lymph follicles in the mucosa and the complete outer layer of muscular fibres in the muscularis.

The mesoappendix consists of a triangular arch of connective and adipose tissue having a free margin and two attached ones, and contains minute bloodvessels, lymphatics, and the plexus of nerves known as plexus of Meissner and Auerbach. The blood supply of the appendix usually consists of one large terminal vessel, and occasionally slight collateral branches through the structures from the cæcum, and in the female through a vessel occasionally found in the appendiculoovarian ligament.

The nerves found in the appendix are motor, sensory, and trophic; stimulation of these motor nerves produces muscular spasm.

Physiology.—The vermiform appendix of man is not a vestigial structure as stated by some authorities, but, on the contrary, it is a highly specialized portion of the alimentary canal. The function of the appendix is to secrete mucus. In addition it is capable of marked peristaltic movements, and there is no doubt but that it and the cæcum are of value in the digestive process. From the fact that the glands of Lieberkühn, which are far more numerous and better developed in the upper part of the cæcum, colon, and appendix than in the small intestine, there is no doubt that the succus entericus elaborated by them are a great aid to complete digestion. Macewen considers that the action of the microorganisms normally present in the appendix and cæcum is another factor in the final disintegration of pabulum poured into the cæcum. He thinks that "the cells and nuclein of the solitary follicles in the appendix have a controlling action on the organisms," and that "one of the functions of the appendix may be to maintain cultures of these organisms in a fit state to perform their function on the pabulum poured into the cæcum. On the inhibition of this function the germs may be capable of damaging the coats of the cæcum and appendix, which have been thereby lowered in vitality. When a purgative action has produced its effects and cleared out most of the germs from the cæcum and colon, those in the appendix will still maintain a fresh culture for renewed action."

Thus from a study of the physiology of the cæcum and appendix we are led by imperceptible steps to a better conception of their pathology. Macewen states that "the *Bacillus coli communis*, which is the surgeon's terror, serves in its proper place a beneficent purpose in effecting the disintegration of some of the undigested matter, but when uncontrolled by the healthy organs and their exudations is apt to cause ravages in the tissues and to produce toxines which are lethal. If from inhibition of the appendicular and cæcal movements or the want of exudation of the succus entericus, or if the cæcum receives material which the succus entericus cannot digest, a stasis occurs in the contents of the cæcum and the constipation which is so often a feature of the appendicitis, ensues. At a later stage fermentative disintegration of the faecal contents with absorption of toxines and damage to the walls of the parts are apt to ensue. So the appendicular inflammation once started may continue to produce serious effects within the appendix after the cæcum has recovered from the primary effect."

Bacteriology.—Investigations of recent years have conclusively demonstrated that the *Bacterium coli commune* is the most frequent pathogenetic organism present in the appendix. Of 286 appendices examined bacteriologically at the German Hospital, 128 were instances of acute appendicitis. The results of the examinations may be tabulated as follows:

ACUTE APPENDICITIS.		Cases.	Per cent.
<i>Bacterium coli commune</i> alone.....		93	72.656
<i>Bacterium coli commune</i> and <i>Staphylococcus pyogenes aureus</i>		17	13.28
<i>Bacterium coli commune</i> and <i>Streptococcus pyogenes</i>		6	4.69

<i>Bacterium coli commune</i>	6	1.69
<i>Streptococcus faecalis</i>	1	0.25
<i>Streptococcus typhimurium</i>	1	0.25
<i>Streptococcus pyogenes</i>	1	0.25
No growth	1	0.25
Totals	108	100

<i>Bacterium coli commune</i>	142	89.87
<i>Streptococcus faecalis</i>	7	4.41
<i>Streptococcus typhimurium</i>	1	0.61
<i>Streptococcus pyogenes</i>	1	0.61
No growth	1	0.61
Totals	152	100

Thus you can see that the *Bacterium coli commune* was found alone in 72.65 per cent. of the acute cases and in 89.873 per cent. of the chronic cases; that it was found either alone or in combination with other bacteria in 117 (91.4 per cent.) of the acute cases and in 151 (96.2 per cent.) of the chronic cases.

We can conclude from these statistics that the *Bacterium coli commune* is a constant habitant of the lumen of the appendix; that other bacteria are frequently found in conjunction with the *Bacterium coli commune*, which can be demonstrated more readily by a coverslip preparation of the exudate rather than from cultures, on account of the inhibitory action the *Bacterium coli commune* has upon other bacteria, and that while many cases of appendicitis are due to one single form of bacteria, it is frequently due to mixed infection.

Pathology.—It is doubtless true that all attacks of acute appendicitis are due to the action of bacteria, and that the severity of the disease depends upon the virulence of the infecting organism and upon the resisting powers of the individual. It is therefore necessary to consider what conditions make the appendix more liable to the successful attack by microorganisms than the remaining portions of the intestine. These factors are several. Of chief importance is the terminal blood supply and the subsequent anæmia of many appendices. The blood supply is defective, not so much because of the evident alterations frequently seen in the walls of presumably normal appendices, but chiefly because of the liability of the occurrence of partial or complete obstruction. The obstruction may be due to increased tension within the lumen of the appendix, due in some cases of distention of the cæcum to swelling of the mucous membrane, or to stricture, completely closing the lumen of the appendix. Obstruction may also result from twists, external bands of adhesions, angulations, etc. Thrombosis, secondary to an infective folliculitis, is occasionally seen. The presence of faecal matter is at times a source of circulatory and nutritional disturbances. These are produced by the efforts made by the appendix, through peristalsis, to empty itself of faecal matter, inspissated detritus, foreign bodies, etc. These attempts often produce marked congestion of the walls of the appendix, usually at a point distal to the concretion, and as a result a marked fibrosis occurs in the walls of the appendix. This fibroid change in the mucosa and submucosa occurs as a result of repeated protective efforts of the lymphoid tissue of the mucosa, and the condition is akin to the change which takes place in the hypertrophied tonsils as a result of the repeated efforts of the

lymphoid structures of the tonsil in resisting invasion. Thus the fibrosis of the wall of the appendix produces a lack of tonicity of its walls, so that its normal peristaltic action is lessened, and that in time nutritional changes occur, and the formation of appendiceal concretions from inspissated material is readily understood. It may therefore be assumed that the presence of a concretion in the appendix is conclusive evidence of previous disease. On account of the lessened peristaltic actions resulting from a fibrosis of the appendix, defective drainage results, and bacteria normally present in its lumen multiply and increase in virulence. A secondary fibrosis of the cæcum undoubtedly results, owing to the virulence of the bacteria elaborated in the appendix, and in this way a colitis is eventually established, and many cases which are termed by clinicians as typhlitis, mucocomembraneous enteritis, dyspepsia, constipation, etc., have their origin in a chronic catarrhal or fibroid change in the appendix. Defective drainage is also produced by conditions external to the appendix, by changes within its walls, by lesions within its lumen, and by certain anatomical and physiological conditions.

Of the conditions external to the appendix capable of producing defective drainage may be mentioned constipation, distention of the cæcum, fibroid changes in the cæcum, adhesions binding the appendix to neighboring viscera or the parietal layers of the peritoneum, adhesions causing marked flexions, chronic inflammatory conditions of the mesoappendix, tumors, etc. Fibroid changes in the walls of the appendix lessen peristalsis, stenosis, tumors, etc., and may interfere with effective drainage of the organ. Stenosis caused by contraction of fibrous tissue in the mucosa and submucosa, congestive disturbances, foreign bodies, faecal concretions, and inspissated appendiceal detritus may cause occlusion of the outlet of the appendix, and thus produce inefficient drainage. Of the anatomical peculiarities that may interfere with drainage of the appendix may be mentioned a very short mesoappendix, abnormal situations of the appendix, abnormal changes in its length and form, torsions, angulations, etc., and Gerlach's valve.

Any of these conditions which may interfere with the normal drainage of the appendix ultimately induce passive congestion of the organ, lead to the formation of appendicular concretions, and the presence of these latter combined with imperfect peristalsis finally cause erosion of the mucous coat, with subsequent infection of all the coats, so that a ready focus is produced for the invasion of bacteria of increased virulence and absorption of their toxins. This in a great measure is the determining factor in the production of gangrene and perforation. And it is a significant fact that in a great majority of cases of perforation of the appendix there is found, within the lumen of the appendix, at a point proximal to the point of perforation, one or several appendiceal concretions. Other factors to be considered in the pathology of appendicitis are the great amount of lymphoid tissue in the walls. This tissue is especially liable to inflammatory changes throughout the body, whenever there is even the slightest irritation by microorganisms. Infective thrombosis soon follows when virulent organisms have an opportunity to act upon an eroded or ulcer-

ated area of the walls of the appendix. Inflammatory conditions of the appendix are also liable to occur in certain forms of intestinal disease, especially typhoid fever and dysentery, without any demonstrable symptoms being present at the time. And it is quite evident that after such conditions have disappeared from the intestines and the appendix, there is left certain fibroid changes in the walls of the appendix which often act as an ætiological factor in the production of subsequent inflammatory changes in the appendix.

It can readily be understood that there cannot be any one certain determining factor in the production of all attacks of acute appendicitis. It is certain that all attacks are due to the action of micro-organisms of increased virulence acting upon tissue rendered abnormally less resistant by anatomical peculiarities, defective drainage, and prior infectious changes.

I feel perfectly confident that trauma is incapable of producing pathological changes in a perfectly healthy appendix, and I base this statement upon the cases I have observed during my extended experience in this class of surgical work. I will, however, admit that in certain given pathological conditions of the appendix, as the presence of large fæcal concretions, empyemata of the appendix, etc., trauma may be an exciting factor in the production of an acute attack. In making these statements I am corroborated by various authorities. Naumann states that "he does not believe that an empty appendix could be so injured that a direct lesion would result from external violence. The organ is too small and its fixation is too slight. If the appendix contained a firm body, as, for instance, a fæcal calculus, it may be injured. The calculus does not rupture the intestinal wall, but tears it, and from this the infection involves the peritonæum."

R. Fritz states: "Among 257 cases of appendicitis were nineteen patients who were supposed to have received an injury, the result rather of indirect than direct violence, from lifting a heavy weight in nine instances, and from a fall or a blow in ten instances. Among 209 cases of typhlitis and perityphlitis external violence immediately preceded the attack of the disease in ten per cent. In considering this statement we must take cognizance of the fact that a difficulty in the study of the relations of traumatism to appendicitis is the *post hoc propter hoc* argument. The individual receives a fall, a blow of the abdomen, or has had some noticeable strain, however remotely, and associated it with the subsequent condition." As a rule, most of the writers who affirm that traumatism can produce an acute attack of appendicitis in an organ perfectly healthy, do not give the grounds on which the statements are made.

Sherren states that "injury plays little part in the production of first attacks of this disease, but the suggestion of Van Zwahlenberg that the condition is due to hydrostatic pressure in the diseased appendix may be true in some cases. In attacks subsequent to the first, injury plays a greater part. In these cases a stricture is usually present, and the injury may determine the attack by causing rupture of the dilated portion of the appendix distal to the stricture."

Fowler states: "Among the occasional causes of

appendicitis laid down by writers, traumatism is mentioned. In my experience, not a single instance occurred in which a knock or a blow upon the abdomen or a fall constituted a portion of the history. The nearest approach to this is the case of an ice man, who attributed the attack to a strain he had received the day before in lifting a heavy block of ice from his wagon. Another instance is that of an athlete in whom the disease developed during the night after he had engaged in a game of football. In neither of these cases does it seem to me that the violent effort or exercise bore any causative relation to the attack of appendicitis."

Walker considers that on account of its anatomical peculiarities it is very liable to slight trauma and states that "the primary exciting cause of a large majority of cases of appendicitis is the anatomical peculiarities of the appendix. Its liability to trauma is undoubtedly due to its location, resting as it does upon the much used ileopsoas muscle, together with its short mesentery and its inability to empty itself of its contents." The author, however, in his long experience does not record a single instance of a case being due to injury.

Bottomby states that "it is probable that all attacks of true appendicitis are due to the action of bacteria, and that the severity of the disease, whether it be catarrhal or suppurative, resulting in a local abscess or in general peritonitis, depends upon the virulence of the infecting microbe and upon the resisting powers of the individual, and that injury has little, if any, part in its causation."

MacDonald states that "much has been written at various times concerning the probability of an external injury having any direct effect in the causation of appendicitis. With the pathology of this lesion as taught to-day we are familiar. The low vitality of a vestigial organ renders it capable of presenting but feeble resistance to bacterial infection, while circulatory disturbances readily produced by imprisoned fæcal matter, or by the accidental twisting or kinking of the organ, greatly accelerate the probability of a speedy absorption of the products of the intestinal microorganisms. With this we are thoroughly in accord, but is it not possible, yea, even probable, that in some given cases the inflammatory condition in the appendix resulting in perforation may be propagated thereto by continuity of tissue? Whether it is of frequent occurrence, or the rare exception, remains to be learned from the deductions of the statisticians. The question of how a blow, or a fall, or a strain can have any direct effect on this rudimentary organ, lying somewhat freely in the abdominal cavity, and well protected by superficial soft parts, must be somewhat problematical."

Juengst states that "an injury cannot produce an acute appendicitis in a healthy appendix, but can produce an acute exacerbation in a chronically diseased appendix, and particularly can it produce a perforation. It is generally believed that acute appendicitis never follows trauma, unless the appendix is previously diseased." He believes, however, that the trauma can produce chronic appendicitis. In a case cited he says that "the trauma produced a contusion, hæmorrhage, or other injury of the appendix, thus giving rise to a chronic form of larvated appendicitis, which later became acute." He

quotes Sonnenburg as saying "that an injury to the ileocaecal region gives a disposition to appendicitis," and refers to a case where a washtub produced the condition. Juengst says that "general injuries, such as lifting a heavy weight, falling on the ice, cannot produce this tendency, but direct injury to the ileocaecal region can." He draws the following conclusions: "A localized trauma against the iliac fossa can injure a healthy appendix or its surroundings to such an extent, as to induce a chronic appendicitis. If such a trauma and a later acute appendicitis are connected by symptoms of ill defined pain in the abdomen, gastric distress, etc. (appendicitis larvata), a casual relation may be said to exist between the trauma, the acute and chronic appendicitis, even if several years have elapsed before the acute type is noted."

Blos states that "if bleeding occurs in the abdominal cavity from any reason and the blood enters the ileocaecal fossa, it is likely to remain there unabsorbed because of the small amount of peristalsis there normally; in other parts of the abdominal cavity it is absorbed within a short time. The blood in the neighborhood of the appendix, organizing into a thrombus, is the actual cause of inflammatory changes such as adhesions; which, then, limit the mobility of the organ, etc. A trauma against the abdomen, and particularly against the right iliac fossa, sets up an acute appendicitis, and may even produce direct perforation. A trauma against any part of the abdomen may be the cause of the small amount of bleeding necessary to set up irritation in the right iliac fossa; the adhesions thus induced form the anatomical basis for the chronic 'traumatic' appendicitis."

Karrenstein states that "the connection between trauma and appendicitis is very rare. The question of trauma was considered in the history of 233 cases, and in only two was a definite history of this found."

Nordmann states that "he has seen six instances among 500 cases where trauma was said to have produced the condition existing. All of these patients had already a chronically inflamed appendix, as shown in four cases by faecal stones, but of these conditions the patients were not aware, until the injury produced a perforation at the points of these stones or at some other weak spot; immediate peritonitis was the result, as no adhesions existed; the peritonitis therefore was due to the trauma, and not the appendicitis. Infectious material filled the appendix before the injury. Only then can a trauma be considered as the cause of the appendicitis if the symptoms come on immediately after it; the patient in all such instances, however, was ill before the trauma."

Borchardt states that "of 150 patients asked on the question of trauma, three blamed traumatism for the condition. One injured himself with a drill several days before, twisting it against the abdomen. One received a blow from a rail, and gangrene of the appendix and peritonitis was found. A third had perforation of the appendix and peritonitis after his small brother jumped on his abdomen in bed."

Newmann states that "in the presence of a previous attack of appendicitis, an injury, no matter how slight, can easily cause a return of the symptoms and induce an acute attack; without the trauma

the condition would most likely have remained chronic. It is extremely doubtful whether an acute appendicitis can be set up in a healthy appendix by a trauma; the small size of the organ and its motility speak against it. If an appendix contains faeces, and particularly a faecal stone, it is easier understood, as then the mucous membrane is already injured, and the injury can readily produce a perforation." Among 152 cases trauma was mentioned as the cause in ten; nine had faecal stones.

Sonnenburg states that trauma is extremely rare in acute appendicitis; he noted only twenty-five cases in which the attack came on after injury. "The trauma is never proportionate to the gravity of the appendicitis; this is characteristic. Lifting of a heavy object, sudden bending over, a blow against the right side of the abdomen, slipping, fall on back with abdominal muscles tense, concussion during jumping, and riding, are given as causes. It is easily understood to be the cause where a previous attack has been had; but even when no attack is recorded pathological changes of the appendix have been found after these injuries mentioned as well as after slight ones. Adhesions, sharp twists, faecal stones, and stenosis were the silent witnesses that a larvated or chronic inflammation had existed for some time. The trauma caused an awakening of the already existing inflammation. A trauma can never induce inflammation, perforation, or gangrene in a perfectly healthy appendix on account of its motility and protected position; it matters not how severe the injury. An injury can give rise to a chronic appendicitis, the organ having been perfectly well before. Contusions and hæmorrhage in the ileocaecal region can produce adhesions, which will tie down the appendix. This will predispose to the disease."

Schroth collected 8,698 cases of perityphlitis which occurred in a large portion of the German army between the years 1890 and 1902. Of these, forty-four were alleged to be due to injuries. The injuries are spoken of as direct and indirect. The former include blows with gunstocks, oars, and similar objects against the abdomen; hoof injuries, contusions by being squeezed between horse and wall, etc. The indirect injuries are concussion due to horseback riding or riding on a gun carriage, immoderate exertion, falls while exercising, climbing or jumping, lifting heavy loads, and forced blowing of instruments. Many of the cases had faecal stones and peritoneal adhesions, most of which must have existed before the injury, thus indicating preexisting appendicitis, either in the form of previous acute attacks or a latent process. The trauma therefore simply renewed the condition already existing.

Atern "does not believe that trauma can produce an acute appendicitis in a perfectly normal appendix, nor does he believe that an acute attack can be produced in a chronically inflamed appendix by the trauma. The patient need not have known that he had an attack of appendicitis."

In the cases reported in the literature on the subject of traumatic appendicitis we are struck by the fact that in a great percentage of the cases there is evidence to show that there was previous disease of the appendix prior to the injury or strain which the authors asserted to be the cause of the acute at-

tack. In many of the cases no history at all is given to show the presence or absence of previous attacks, and in no case was there evidence of external injury. We may therefore infer that all these cases have had previous attacks. This is proved conclusively by the autopsy or operative findings. In the great majority of the cases in which the pathological findings are given, there were present old adhesions, faecal concretions, marked angulations, stenosis, or foreign bodies.

A short summary of the one hundred and thirty cases found in the literature discloses the following facts:

(1) Age: Twenty cases between six and ten years; twenty-one cases between eleven and fifteen years; fifteen cases between sixteen and twenty years; fifteen cases between twenty-one and twenty-five years; seven cases between twenty-six and thirty years; three cases between thirty-one and thirty-five years; four cases between thirty-six and forty years; three cases between forty-one and forty-five years; one case between forty-six and fifty years; two cases over fifty years; and in thirty-nine cases the age is not mentioned.

(2) One hundred cases were observed in males and thirty in females.

(3) In fifteen cases there was a history of previous attacks; in thirty-five cases the previous history was negative, and in seventy-seven cases the previous history was not recorded.

(4) In fifty-two cases the nature of the injury consisted in direct blows or kicks upon the abdomen; in twenty-one cases to falls upon objects, and in fifty-four cases muscular action is given as the direct exciting cause.

(5) In only three cases was there recorded any evidence of external injury.

(6) The symptoms of acute appendicitis occurred immediately in sixty-eight cases; within a few hours in twelve cases; within one to two days in ten cases; within two to three days in eight cases; within three to four days in two cases; within five to six days in one case; within seven days in four cases; within four weeks in two cases; within five months in one case; and in sixteen cases the time that elapsed is not mentioned.

(7) The evidence of previous disease in the appendix was shown by the presence of faecal concretions, adhesions, flexions, abnormalities in length, position or size, and stricture is noted as follows: In forty-three cases faecal concretions alone, in combination with adhesions in nineteen additional cases, and in combination with marked flexion in eight cases; adhesions alone were noted in twenty-one cases; flexions alone were noted in two cases, abnormalities in length, position, or size in two cases; foreign bodies in two cases; strictures in two cases; acute inflammatory conditions alone in twelve cases; and in twenty-nine cases there is no mention made of the pathological findings.

Medical Aspects of the Subject.

In cases of appendicitis following immediately or remotely upon a blow or fall on the abdomen, or upon a strain of the ileopsoas or abdominal muscles, the status of the case can be considered only altered by the fact that there were or were not previous attacks of appendicitis as might be adduced from

the previous history or that might be proved at operation or autopsy by a thorough examination of the appendix and surrounding viscera. As bearing upon the subject I find in the *American and English Encyclopædia of Law* (second edition, vii, p. 388) the following article on contributory negligence:—

Injury Enhanced by Disease. 1. Defendant's Negligence Causing or Aggravating Disease. In cases where the defendant's negligence caused a disease, developed a latent tendency to disease, aggravated a prior disease, or led in immediate sequence to disease, the defendant must respond in damages for such part of the diseased condition as his negligence caused.

2. Diseased Condition Independent of Injury. Defendant's Knowledge. But when the diseased condition exists independently of the injury, and does not flow from it as a natural consequence, the defendant's liability is only for such consequences as, independent of the diseased condition, were indirectly or immediately caused by his negligence.

Yet if he knew of the diseased condition and could have foreseen that it would aggravate an injury inflicted by his negligence, he is liable for the entire consequences that flow from the combination of his negligence with the existing diseased condition.

3. Direct and Natural Consequences. And so the defendant is liable for negligence causing a natural function or condition to become disordered, and must respond in damages for all the direct and natural consequences, however unusual or unexpected. And this doctrine is particularly applicable when the person guilty of the negligence owes a special duty to the person injured.

4. Diseased Condition Must Be Traced to Injury. But it would seem that a carrier should not be held liable for a diseased condition when it cannot be told whether the condition is in any manner attributable to the negligence of the carrier, or wholly arises from other causes. In other words, the plaintiff must show by a preponderance of the evidence that his diseased condition is due, in whole or in part, to the negligence of the defendant; and this he does not do if the evidence shows another probable efficient cause of the condition, without showing that such other probable cause was not really the efficient, immediate cause thereof. But where no other proximate cause of a diseased condition or injury, except the defendant's negligence, can be found, then such negligence will be held the sole proximate cause thereof.

And subsequently developed diseases, apparently flowing from the defendant's negligence, must be shown to be due to some other cause, or the defendant's negligence will be held the proximate cause of the condition.

Iowa, Dubuque Wood, etc., Assoc. vs. Dubuque, 30 Iowa, 176. Mass., Marvle vs. Worcester, 4, Gray (Mass.) 402. New York, Searles vs. Manhattan R. Co., 101 N. Y. 662, 25. Amer. & Eng. R. Co. 358. Ohio, Reading City Pass. R. Co. vs. Echert (Pa., 1886) 2 Rep. 793).

Injuries to the Person, Actual Physical Injuries. When the injury alleged is to the person of the plaintiff an actual physical injury must be proved. Unless there is actual violence or a positive physical injury to the person or health, there can be no recovery.

Fellse vs. Tripp, 70 Ill., 496; Kellerman vs. Arnold, 71 Ill., 632; Flynn vs. Fogarty, 106 Ill., 263, etc.

The question of negligence enters into the subject to such an extent that if it can be proved that the plaintiff was aware that he had previous attacks of appendicitis and had been advised by a surgeon to have an operation performed, he will be unable to collect damage under the clause of "Injury En-

hanced by Disease." If, however, the patient had previous disease of his appendix without any knowledge on his part of such a condition existing, there could be no question of contributory negligence on his part raised. And, again, the diseased condition must be clearly proved to have been the direct result of the injury received.

The following paragraphs deal with the question of accident insurance and its relation with disease occurring "within the system," which may be due to injury:—

J. W. May, on Accident Insurance, states definition of accident, injury causing death, strain. What is an accident? This question arises at the very threshold in the consideration of this branch of insurance, and has been and is likely to continue to be a fruitful source of discussion. In the supreme court of Pennsylvania (North American Insurance Co. vs. Burroughs, 60 Pa. St. 431) it appeared that while the insured was pitching hay the handle of the pitchfork slipped through his hands and struck him on the bowels, inflicting an injury which produced peritoneal inflammation, in consequence of which he died, and this was held to be an accidental death. And the same would have been the case, say the court, if a strain had been the cause of the inflammation which produced death. Death by accident was defined to be "death from any unexpected event which happens 'as by chance, or which does not take place according to the usual course of things.'" So a sprain of the muscles of the back, caused by lifting heavy weights in the course of business, is injury by accident or violence "occasioned by external or material causes operating on the person of the insured."

Accident: Cause of death arising within the system; secondary cause; external and material cause. "In the case of *Filton vs. The Accidental Death Insurance Company* (17 C. B. N. S. 122; S. C. L. T. 28 (C. P.)), the deceased met with a violent fall by which he immediately became ruptured in the bowels, and afflicted with strangulated hernia in the abdomen, for which a surgical operation was necessarily performed, in consequence of which and the hernia he died. The question was whether this was a death within the exception of a policy which provided that the company did not insure against death or disability arising from rheumatism, gout, hernia, erysipelas, or any other disease or cause arising within the system of the insured, before, or at the time, or following such accidental injury, whether causing such death or disability directly or jointly with such accidental injury. And it was held that such a death did not arise from a cause within the system, and so was not within the exception.

Proof of Death by Violent, External, and Accidental Means. Under a policy insuring the holder against death or injury by external, violent and accidental means, and providing that the insurance shall not extend to any cause of death or injury unless the claimant shall establish that the death or injury was occasioned by "external violence and accidental means," it is incumbent upon the plaintiff under the policy to show that the death or injury of the insured was the result not only of external violence, but of accidental means.

Several Equally Reasonable Theories of Death. Where the circumstances are consistent with several equally reasonable theories, some pointing to accidental death and some pointing to death from design or natural causes, a case is not made out for the injury until there is some proof offered tending to establish one of such theories. *Merrett vs. Preferred Masonic Mut. Accident Assoc.*, 98 Mich., 338.

Where there is sufficient evidence to warrant a find-

ing that death was due to accidental and not to some other cause, as, for instance, disease, a verdict in favor of the beneficiary will not of course be disturbed. So when there was evidence that the insured died from the effects of a fall, although there was testimony tending to show that typical heart might have occasioned death. *Standard L., etc., Ins. Co. vs. Thomas* (Ky., 1891), 17 S. W. Rep. 273.

So where death was found by the jury to have resulted from sudden strain, although there were no external marks of the injury. *Owen vs. Travelers' Ins. Co. (Ind.)*, 12 Ins. L. J. 75.

In the liability of accident insurance companies for disease following injury there are certain facts to be borne in mind. They are: (1) The nature of the policy; (2) certain exception clauses which are found in many policies; and (3) the statements concerning one's health previous to and at the time of the issuance of the policy.

Conclusion.—In conclusion I would like to call attention to the following facts, which seem to be of most importance in considering the relationship of trauma and acute appendicitis:

(1) From personal experience and from a study of the cases found in the literature I do not consider that trauma is ever the direct exciting cause of acute appendicitis in a perfectly normal appendix.

(2) I believe that an acute attack of appendicitis can follow a severe blow upon the abdomen or fall upon the abdomen, or be due to muscular contractions of the ileopsoas muscle in an appendix which has been previously inflamed only under the following conditions:

A. In a latent or residual abscess or extensive pathological lesion of the appendix, where the appendix did not occupy a deep pelvic position, but is in close proximity to the anterior abdominal wall, severe direct traumatism may precipitate an acute attack.

B. Strong contractions of the ileopsoas muscle cannot in my opinion be the immediate cause of an acute attack of appendicitis, where the appendix is chronically diseased or where it has extensive pathological lesions, unless it is firmly adherent to and not simply in apposition to the peritonæum overlying this muscle.

C. The degree of traumatism to be a factor in the causation of appendicitis must be direct and of considerable force; such force applied to the right iliac fossa may tear the underlying parietal peritonæum and so simulate an acute attack of appendicitis that only opening the abdomen and exposing the appendix could definitely settle the matter.

(3) The acute attack of appendicitis of traumatic origin is observed more frequently in males than in females on account of their more active life and greater liability to injury and strains, and between the ages of ten and twenty-five years.

(4) In an appendix previously diseased the liability to an acute attack of appendicitis supervening upon injury is in direct ratio to the degree of injury, and depends entirely upon the pathological changes present in the appendix at the time of injury.

(5) I maintain that it is exceedingly rare to find a case of acute appendicitis in which it can be definitely stated that traumatism is the direct exciting factor. This statement is borne out by a re-

view of 1,400 cases seen at the German Hospital during the years 1904, 1905, and 1906, and of this number in only one patient was there any history of injury at all, and in this case it was questionable whether the injury had anything to do in causing the attack. The history of the case is as follows:

J. H., age twenty-four years, admitted to the German Hospital, July 7, 1905. Three months before admission, while plowing, the plow brake pulled forward, striking the patient's abdomen with the plow handle. The patient did not at that time have any pain in the abdomen, but several hours later pain developed in the right side over the appendix, with some nausea, and it became impossible for the patient to lift anything. This condition lasted one day, and then disappeared. On June 30th while boarding a train he felt a stitch in the right side of the abdomen over appendix like something giving away. This pain was acute, without nausea or vomiting. The pain was easier on flexing his legs on abdomen. Examination showed rigidity of right rectus; acute tenderness over McBurney's point. At operation the appendix was found acutely inflamed.

In a review of the American, English, French, German, and Italian literature, it is a remarkable fact that of the great number of cases of acute appendicitis reported during the past forty to fifty years only one hundred and thirty cases can be found in which traumatism has any bearing whatever, and of these one hundred and thirty cases only thirteen cases can be directly attributable to traumatism for the production of the acute attack. In seventy-seven cases the previous history is not recorded, and in thirty-five cases the previous history is negative.

(6) The mortality is very high in these cases on account of (a) the failure to recognize the condition until the disease is well advanced; (b) the rapid gangrene and perforation which occurs; and (c) the delay in operation.

(7) I must strongly urge a more careful study of this class of cases and, as soon as a diagnosis has been made, insist upon an immediate operation if we are to obtain the best results.

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with clear waterlike urine, followed in a few weeks by swelling of both legs, especially about the calves and ankles, which was increased by any attempt at walking. During one day she had complete retention of urine. One month later, while all those symptoms continued unchanged, she began to suffer with intense headache, dizziness and a heavy sensation below the left ribs, which gradually increased. Two weeks later there appeared spontaneous pain above and to the left of the navel. She was then treated by her physician for catarrh of the bladder. Two months before she came under our observation there appeared jaundice, which became intense in the last three weeks. It was accompanied by nausea, loss of appetite, sense of fullness in the epigastrium after meals, especially those consisting of meat and eggs, and by constipation; meanwhile the headache and dizziness diminished somewhat. Her bowels had to be moved usually by enemas, and the stools are said to have appeared claylike and very offensive in odor. With the appearance of jaundice the swelling of the legs disappeared completely, the frequency of urination became normal, and the pain during the act was no longer present. The spontaneous pain above the umbilicus was no longer noticed, while the sense of heaviness in the left hypochondrium increased so much that the patient could not at all lie on her left side. During the last month she had some light attacks of fever, while one week before admission her temperature rose high enough to send her to bed. Her appetite decreased yet more, the nausea was intensified, and she vomited once after taking some prescribed powder. There was no history of biliary colic, no malaria, no history of alcoholism, nor of syphilis. Her husband had likewise never suffered from lues. The patient's father died in his fifty-ninth year from "blood poisoning," and her mother from sudden attack of "heart failure," at about forty years of age.

Status Præsens.—(On December 29, 1906.) The patient was middle sized, with well developed skeleton, flabby muscles and reduced "panniculus adiposus." The visible mucous membranes were strongly jaundiced, as well as the whole skin, with the exception of the end phalanges of both hands, in which the well marked paleness of anæmia strongly contrasted with the icteric tint. The left hypochondrium was somewhat swollen, compared with the other side; the rest of the abdomen normal. No general enteroptosis was to be found. Palpation disclosed marked tenderness two fingers' breadth above the umbilicus, in the left parasternal line. The abdominal aorta was felt to pulsate very strongly. There was no gastric tenderness on superficial or deep palpation. The lower border of the liver or the gallbladder were not to be felt; the tender points characteristic of gallstone disease were absent; the spleen not enlarged to palpation. In the left hypochondrium and partly in the upper left epigastrium a tumor could be palpated, about an orange in size, with a smooth surface, nonfluctuating; the tumor moved with the respiration. There was no mass to be felt at the seat of tenderness in the left parasternal line above the umbilicus. (Whenever the last two regions were palpated the patient always said that "here lies the trouble.") The examination of the lymphatic glands, of the rectum, and of the vagina were negative. The temperature 97.6° F., heart and lungs normal, pulse 84.

Examination of the Urine.—The quantity was between 765 and 850 c.c. in each twenty-four hours, somewhat cloudy, with urinous odor, of greenish-brown color, acid, specific gravity 1.015 to 1.017; large trace of albumin; no sugar, no acetone, no diacetic acid; indican in excess; urea 13 to 14 grammes; reaction for bile very marked. Microscopically, much kidney epi-

thelium, moderate amount of flat pavement epithelium, very many granular casts, a few hyaline, a few epithelial casts, a few pus cells, and some mucus. The urine changed in the next few days in so far as no indican was to be found after meat was not allowed. The salol test (Sahli) was also made, 2 grammes of salol being given in two doses. The urine showed no characteristic reaction, violet color with iron chloride, during the next forty-eight hours. The patient received no other drug while this test was made.

Examination of the Fæces.—The stools were clay colored, offensive in odor, very acid in reaction, contained many visible pieces of undigested meat and little clumps of fat; no mucus, no visible blood; aloin test for occult blood was negative. Microscopical examination showed many separate muscle fibres, striated, also bundles of same held together by connective tissue; large neutral fat crystals were abundant in every field, some yellowish, some colorless. Crystals of fatty acids with their sharp angles were also very abundant, but there were hardly any fat droplets. No meat was allowed the patient one day before the examination; she was given about an ounce and a half of butter, and three glasses of milk. The fæces were passed spontaneously one time, then after cascara, so that extraneous fat of any kind, such as vaseline or cacao butter suppositories, was excluded.

Examination of Stomach Contents.—These were examined on three successive mornings, after Ewald's test meal, and once on an empty stomach. Quantity, 25 grammes, obtained without aspiration; consistence, thick, gruellike; reaction, neutral; color of filtrate, grass green; free hydrochloric acid, negative to Congo red solution and to Gunzberg's reagent; total acidity, ten; lactic acid, positive; rennet digestion, one tenth; aloin test for occult blood, negative. The same values were found in the subsequent examinations, except that the quantity obtained was from 40 to 55 c.c. Examination of the fasting stomach gave 15 c.c. of contents, alkaline in reaction, containing much saliva. Microscopical examination showed unchanged epithelial cells, many salivary corpuscles, a few leucocytes, fat droplets, yeast cells, no bacteria. An examination six and a half hours after Leube's test meal showed pieces of meat in the washings and some mucus.

Examination of Blood.—The blood was examined for plasmodia with negative result. There was also no leucocytosis.

From the 29th of December to the 9th of January the general condition changed in so far that on the 5th, after the patient had had normal temperature for seven days, she was suddenly seized with a chill, followed by a temperature of 104° F., accompanied by much pain about the right parotid gland. On the second day of fever the left parotid was also swollen; on the 8th of January the temperature became subnormal, and on the 9th a laparotomy was performed.

When we consider the history of the case, and the results of the various examinations we have the following data:

I. Positive data from the history: Absolute good health till the 2nd of June, 1906; uterine hæmorrhages for one month preceding an abortion; abortion on July 2nd, followed by a curettage; good health for two weeks; a symptom picture pointing to disease of the kidneys (pollakiuria, water-clear urine, and œdema of the legs) lasting from the beginning of August till October; headache and vertigo; gradually increasing sensation of heaviness in the left hypochondrium from September on, spontaneous pain a little above the umbilicus; intense jaundice of two months' duration, on the appear-

ance of which the kidney symptoms came to an end, attacks of light fever with occasional high temperature, sudden death of the patient's mother from some affection of the heart or the blood vessels.

II. Negative data from the history: No history of biliary colic, no syphilis, no alcoholism, no malaria.

III. Positive data from the objective examination: Bad nutrition, deep jaundice, swelling in the left hypochondrium (nonfluctuating tumor mass, moving with the respiration, in the upper left quadrant), strong pulsations of the abdominal aorta, marked tenderness above the umbilicus in the left parasternal line.

IV. Negative data: Lower border of the liver not palpable; gallbladder and spleen also not palpable; no points of tenderness characteristic of gallstone disease; no swellings of the lymph glands, no gynecological trouble.

The results of the urine examination, granular and epithelial casts, kidney epithelium, albumin, and the history of the urinary difficulties pointed to a nephritis lasting for some five months. The examination of the stools demonstrated poor utilization of the proteids (azotorrhœa), and poor splitting of fats (steatorrhœa); the negative result of the salol test proved that the cause of these could not be ascribed to the jaundice as much as to the fact that trypsin and the fat splitting steapsin were not present in the small intestine; the connective tissue in the muscle bundles showed also that the pancreas could not fulfill the digestive work thrown upon it by the poor condition of the stomach. The examination of the stomach contents showed absence of free hydrochloric acid, and a serious disturbance of motility, not leading, however, to much stagnation.

From the standpoint of differential diagnosis only such conditions were to be considered that could lead to complete obstructive jaundice with bile free stools.

The usual catarrhal jaundice was excluded, because its course does not last over six weeks, while improvement usually begins before that time; the lower border of the liver is frequently palpable in this condition. In our case the patient grew progressively worse with the jaundice existing over two months. The "prolonged jaundice" of the French (*L'ictère catarrhal prolongé*) could not be accepted as the diagnosis, although this disease may coexist with acholic stools and bile in the urine for some two or three months, and end in recovery. The absence of the enlargement of the liver, the marked general weakness, the tumor mass below the left ribs spoke against it.

Obstructive jaundice caused by a calculus in the common duct was not excluded so easily. Although there was no history of biliary colic and none of the usual points of tenderness, yet the surgeons tell us of many cases where such calculi have been found at laparotomy or at autopsy, although during life there was nothing indicative of their presence. Courvoisier says that in the obstruction of the common duct by stone, the gallbladder is usually small, shrivelled or atrophic. In sixty-seven cases of obstruction by such stones the gallbladder was found

small and shrivelled, or 70 to 80 per cent. The fact, therefore, that the gallbladder of our patient was not palpable spoke as a slight point in confirmation. Yet we must not forget that the remaining 20 per cent. of cases had enlargement of the gallbladder, and that palpation can never leave us perfectly sure of the condition in each individual case. In a case of Reclus, the gallbladder was not palpable, yet at the laparotomy was found to be enlarged to double its normal size.⁴ The jaundice, which we have called intense, and which was said to have come on gradually, could not be of much use in the differential diagnosis. In the first place there is no standard of measure for jaundice, and secondly, in cases of gallstone obstruction there may exceptionally be seen an intense jaundice which has not begun very suddenly. The attacks of fever could then be traced to an ascending infection resulting in a cholangitis, as a secondary effect of the obstruction by the calculus; the age and the history of pregnancy could only strengthen such a diagnosis.

But, beside the total absence of any history of biliary colic, there was still one more point which excluded the supposition of an obstructing calculus. The disease began with well marked kidney trouble, which was corroborated by the examination of the urine, and indeed the patient was treated for a catarrh of the bladder by a physician, who probably adopted this diagnosis because of the painful and frequent urination. Dieulafoy says: "Frequent urination may appear as a late or as an early symptom of Bright's disease; sometimes it is accompanied by pain, especially in women. I have observed such painful pollakiuria in several patients in my clinic. It is caused by an increased irritability of the mucosa of the bladder or of its muscular coats. Where the sphincter becomes affected then painful spasms follow the act of urination. What the cause is for these effects on the excretory apparatus in cases where the secretory apparatus is damaged, it is impossible to say. We cannot blame the chemical composition of the urine, because the pollakiuria may appear in the beginning of the disease where the urine shows nothing abnormal. Perhaps it may be due to some reflex from the kidney to the bladder."⁵

A nephritis may of course arise in the course of a prolonged jaundice: one often finds casts and albumin in the urine of jaundiced patients where the kidney is affected by the coexisting toxæmia. That casts may quickly appear in cases of obstructive jaundice has been shown by the experiment of Wallerstein, who found them soon after ligating the gallducts.⁶ But in our patient the nephritis was the primary condition, for kidney symptoms appeared three months before the jaundice. All of these considerations excluded the diagnosis of an obstruction of the common gall duct by a calculus.

There were some points in favor of carcinoma of the stomach, such as the absence of free hydrochloric acid, the low total acidity, and the presence of lactic acid; in addition the statistics show that jaundice is present in from six to thirteen per cent. of cancer of the stomach, while Osler and MacRae

⁴ Reclus, *Travaux de la Clinique*, 1890, p. 155. Courvoisier, *Pathologie und Chirurgie des Gallens*, 1890.

⁵ Osler, *Krankheiten des Menschen*, 1888, p. 260.

⁶ Dieulafoy, *Mémoires de la Clinique*, 1897.

⁷ Wallerstein, *Beiträge zur Pathologie des Menschen*, 1902.

found jaundice in four per cent. of their cases.⁷ There was no epigastric tumor to be felt, but the jaundice could have been caused by the pressure of carcinomatous lymph glands in the portal fissure. But the onset of the disease with kidney symptoms and not with gastric symptoms, together with the age of the patient, spoke against this diagnosis.

Cancer of the gallbladder or its duct would have hardly caused such a deep jaundice with bile free stools, except perhaps if the new growth were of such a size as to press upon the common duct. Then a tumor would have been palpable and moreover primary cancer of the gallbladder is usually accompanied by gallstones. We have already excluded the latter, and again the age of the patient spoke against cancer.

A carcinoma of the hepatic duct or of the papilla of Vater could have caused such deep jaundice with bile free stools, and the nonenlarged gallbladder would not speak against such an assumption, so far as the hepatic duct is concerned; but this affection is very rare, especially in the age of the patient, and the mode of onset was against it. In cancer of Vater's papilla the gallbladder is usually enlarged—in our case it was not palpable, while the other objections also held true. A retroperitoneal tumor could likewise be excluded, for certainly it would have been apparent to palpation to cause such a degree of obstructive jaundice.

The examination of the fæces and the results of the salol test directed our attention to some lesion of the pancreas, situated probably in the head of the organ, thus causing the obstructive jaundice by the compression of the common gallduct. The findings in the fæces could not be explained by poor absorption. In the first place, the salol test would then hardly be negative, and moreover we had no cause whatever to suspect any derangement of absorption; there was no catarrh of the intestines, and no symptoms of intestinal tuberculosis. We could accordingly assume that the mesenteric lymph vessels and glands were in good condition. Accordingly a chronic disease of the pancreas became our working diagnosis.

Now we had to consider what sort of pancreatic disease confronted us. A cancer of the head of the pancreas could not be excluded very easily. Bard and Pick⁸ give the following characteristics of this condition: Gradually increasing jaundice, marked dilatation of the gallbladder, rapid loss of flesh, cachexia, no noticeable enlargement of the liver. Courvoisier has also found enlarged gallbladder in such cases. In a hundred cases of obstructive jaundice due to other causes than gallstones he found the gallbladder enlarged in ninety-two. Mayo-Robson, Tuffier, Tissier, and R. C. Cabot corroborate his findings.⁹

Our patient was deeply jaundiced but not cachectic; she had lost some flesh but not to such a degree as is seen in cancer; her age spoke against malignant disease; but more important yet, the disease began with painful urination and œdema. Accordingly we excluded cancer of the pancreas. A calculus in the duct of Wirsung was excluded, because it could hardly cause such an absolute jaundice and

the paroxysms of pain accompanying such a condition are even more distressing than in gallstones.

Now there remained for consideration only two chronic affections of the pancreas, chronic pancreatitis and a pancreatic cyst. The above considerations would have led us to call the case chronic pancreatitis, but the unexplained tumor in the left hypochondrium spoke for the possible existence of a cyst, and accordingly that was our diagnosis.

On the 9th of January, Dr. Sturmdorf operated upon the patient: The right lobe of the liver was found small, the left lobe felt very hard to the touch and was enlarged so much that at first sight the gallbladder appeared misplaced; this lobe was the tumor felt by us. The gallbladder was small and contained some thick bile, but no concretions; the cystic duct was completely obliterated, and there were many adhesions in the sinus transversus of the liver; the hepatic duct was neither narrowed nor obstructed; there were no gallstones in the common duct, which was narrowed only in the pancreatic portion; Vater's papilla was patent to the probe; the body of the pancreas appeared somewhat enlarged, while the head seemed very large indeed, and was as hard as a board; the spleen was somewhat enlarged toward the median line.

The diagnosis was now modified to chronic interstitial pancreatitis and cirrhosis of the liver. This cirrhosis probably progressed more rapidly than the pancreatic disease, for the patient complained of the heavy feeling in the left hypochondrium long before the development of jaundice. The large left lobe pressed through the quadrate lobe upon the cystic duct; this led to the narrowing of the lumen, while the obliteration was probably due to an ascending infection of the gallpassages favored as it was by the narrowing of the common gall duct. The enlarged head of the pancreas first pressed upon the duct of Wirsung and then upon the common duct, thus causing the jaundice. Now the intestinal bacteria proceeding upward could find a favorable culture ground in the cystic duct, where the amount of bile was diminished and the lumen narrowed by the compression by the liver.

As to the parotiditis from which the patient suffered, we can only say that Andral and Meniere¹⁰ describe such an attack in a case of chronic pancreatitis. They give no explanation, and we can only call the attention to this interesting complication in an organ which is somewhat related by function to the diseased organ.

We look upon the whole case as a fibrosis progressively affecting the various organs. At first, the kidney was affected, as is shown by the frequent and painful urination, œdema, and an attack of anuria. The examination of the stomach with its achlorhydria, low total acidity, and especially its poor rennet function—one tenth of the normal—also showed that that organ was likewise the seat of an interstitial change of the same character. The operation itself showed the liver and the pancreas likewise involved, the changes in the latter organ leading to the most striking symptoms of the case. We had, therefore, fibrous changes in the four organs, an interstitial gastritis, an interstitial kidney, cirrhosis of the liver, and a sclerotic interstitial pancreatitis.

There remains but the question of explaining the origin of these changes. Syphilis and alcohol were excluded, and we could think of early visceral arteriosclerosis as the only probable cause. As predisposing causes for this affection, we could look upon heredity, shown by the early death of the

⁷ *Ann. Surg.*, Diseases of the Liver, p. 543.
⁸ *Ann. Surg.*, Diseases of the Liver, p. 254, May 10, 1888.
⁹ *Ann. Surg.*, Diseases of the Liver, p. 549.

¹⁰ Osier, *Nottingham's Encyclopædia*, p. 162.

mother from some affection of the circulatory system (perhaps apoplexy), the interine hemorrhages lasting over a month. The immediate factor responsible for the change in the vessels and the viscera, leading to the interesting symptom picture, remains of course unknown to us.

125 EAST NINTH STREET.

A STUDY OF TROPICAL DISEASES AS THEY OCCUR IN THE PHILIPPINE ISLANDS.

Letter to the Surgeon-General, Report of the U. S. Army.

BY P. M. ASHBURN, M. D.,
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and

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(From the Surgeon-General's Office.)

1. *The Development of Filaria Philippinensis in the Mosquito.*—We believe that we have followed the complete development of *Filaria philippinensis* within the mosquito, *Culex fatigans*. We have submitted a complete report to the surgeon-general upon this subject, in which we reach the following conclusions:

1. *Filaria philippinensis* is a hitherto undescribed species of sheathed filaria occurring in the blood of man.

2. It is distinguishable from other filariæ, both in the blood and during its developmental cycle within the mosquito.

3. This filaria presents no periodicity as regards the time of its occurrence in the blood. It has been observed in five natives of the Philippines, and is constantly present.

4. *Filaria philippinensis* undergoes a developmental cycle within the mosquito, *Culex fatigans*, which may be briefly described as follows: In from fourteen to fifteen days the development is complete and the filaria has passed into the labium of the mosquito; the sheath of the embryo is lost in the stomach, and the worm then penetrates the stomach wall and reaches the muscles of the thorax, where most of the developmental changes occur; during the developmental period the filaria increases in length from 0.32 mm. to 2.2 mm., and in breadth from 0.0065 mm. to 0.02 mm.; it develops a well marked intestinal canal, divided into œsophagus and intestine, a well defined anus, and three papillæ which are situated at the end of the tail; the mouth appears to be simply a circular cavity, having no distinct lips. Development, so far as the morphology of the worm indicates, appears to be complete about the eleventh day, the only changes occurring after that being a lengthening and narrowing of the filaria, which enables it to enter the labium of the mosquito.

5. For some unknown reason the mosquito manages to get from the body of the patient 40 to 50 or more times as many filariæ as it is possible for us to get in a similar amount of blood from a needle prick. This fact we believe will be of great diagnostic importance in the examination of those cases in which the filariæ may be very few in number; in such cases the mosquito may be used, and thus the

chances of finding the parasite will be greatly increased.

2. *Investigations Regarding the Etiology of Dengue Fever.*—For a period of nearly five months we have been investigating the ætiology of dengue fever, and have reached some very interesting conclusions regarding this subject. While we do not consider that our work is as complete, in some respects, as we could wish, we believe that we have been able to throw considerable light upon the ætiology of this disease and that our results explain the failure of others to find the parasite causing the disease, and that they also indicate the method of its transmission from person to person. The lack of suitable volunteers for our experimental work and the subsidence of the dengue epidemic at Fort William McKinley, Rizal, has forced us to conclude our work upon this subject for the present.

In our special report, to be submitted shortly to the surgeon-general, we consider in detail each step of our work in the investigation of this subject and also consider the symptomatology, diagnosis, and treatment of dengue. In this report we will simply give the conclusions we have reached regarding the ætiology of dengue fever, all of which have been confirmed by observation and experiments. These conclusions are as follows:

1. No organism, either bacterium or protozoon, can be demonstrated in either fresh or stained specimens of dengue blood with the microscope.

2. The red blood count in dengue is normal in uncomplicated cases.

3. Dengue is characterized by a well marked leucopenia, the polymorphonuclear leucocytes being decreased, as a rule, while there is a marked increase in the small lymphocytes.

4. There occur no characteristic morphological changes in the red or white corpuscles in dengue fever.

5. In bouillon blood cultures or in cultures of citrated blood no organism of ætiological significance could be demonstrated.

6. The intravenous inoculation of unfiltered dengue blood into healthy men is followed by a typical attack of the disease.

7. The intravenous inoculation of filtered dengue blood into healthy men is followed by a typical attack of the disease.

8. The cause of the disease is, therefore, probably ultramicroscopical in size.

9. It seems evident that dengue can be transmitted by the mosquito *Culex fatigans*, and this is probably the most common method of transmission of the disease.

10. The period of incubation in experimental dengue averaged three days and fourteen hours.

11. Certain individuals are absolutely immune to dengue, as proved by our experiments.

12. Dengue is not a contagious disease, but is probably infectious in the same manner as is yellow fever and the malarial fevers.

3. *The Occurrence of Amabæ in the Fæces of Healthy Men.*—We have continued our work upon this subject, with the following results to date:

The total number of healthy men examined to date has been one hundred, of which seventy-two, or seventy-two per cent., have shown *Entamoeba coli* in their fæces. These men were all American

¹In Ashburn and Craig constitute the Board for the Study of Tropical Diseases of the Division Hospital, Manila, P. I.

soldiers, members of the Hospital Corps, serving at the Division Hospital, Manila, P. I. The following table gives the results obtained from these examinations to date:

Total number examined	109
Total <i>Entamoeba coli</i>	72
Total <i>Entamoeba dysenteriae</i>	2
Total <i>Entamoeba histolytica</i>	46
Total <i>Cercomonas intestinalis</i>	11
Total <i>Trichomonas intestinalis</i>	6
Total <i>Trichomonas coliformis</i>	2
Total <i>Trichomonas trochanteris</i>	1
Total <i>Trichomonas hominis</i>	3
Total <i>Trichomonas trochanteris</i>	1

None of these men, with the exception of the two showing *Entamoeba dysenteriae* in their faeces, had diarrhoea or dysentery at the time of the examination, and all denied ever having suffered from dysenteric symptoms since residing in the Philippines. Six of the men stated that they had had slight diarrhoea at times, always traceable to indiscretions in eating or drinking, but that they had never been upon sick report with it.

Of the seventy-two men showing *Entamoeba coli* in their faeces, one had resided in the Philippine Islands for eight years; four, seven years; one, six and a half years; three, six years; four, five and a half years; one, five and one quarter years; two, five years; four, four years; three, three years; two, two and a half years; ten, two years; one, one year and ten months; two, one year and nine months; nine, one and a half years; thirteen, one year; and the remainder, or seventeen, less than one year.

The two men showing *Entamoeba dysenteriae* in their stools were apparently in good health, but inquiry elicited the information that both were suffering from dysenteric symptoms at the time of examination, and both were later returned to the United States with chronic amoebic dysentery. At the time that we examined the faeces of these men we knew nothing of the occurrence of dysenteric symptoms in them, and our diagnosis was based entirely upon the morphological appearance of the amoebae observed in their faeces.

It will thus be seen that, contrary to the opinion of certain investigators, it is possible to distinguish *Entamoeba dysenteriae* from the harmless *Entamoeba coli* as they occur in the faeces of man, and that, therefore, such distinction becomes of very great practical importance in the diagnosis of diarrhoeal conditions of the intestine.

In order to determine how many of the men still on duty at the hospital who had been previously examined and were positive for *Entamoeba coli* still showed them in their faeces the following examinations were undertaken:

A. On November 20, 1906, twenty-eight men were reexamined, of whom twenty-three showed *Entamoeba coli* in their faeces upon previous examinations; of these twenty-three positive cases, eighteen, or 78 per cent., were still positive for *Entamoeba coli*.

B. On November 20, 1906, thirteen men were reexamined who had been first examined upon March 17, 1906, eight months having elapsed since the first examination. Of these thirteen men, eleven showed *Entamoeba coli* in their faeces March 17, and nine, or 81.8 per cent., still showed them on November 20, eight months afterward. Not one of these men had suffered from the slightest diarrhoea during this

time and had been on duty continuously at the hospital.

C. On November 20, 1906, seven men were reexamined who were first examined May 2, 1906, six months and twenty-two days having elapsed since the first examination. Of these seven men, five were positive for *Entamoeba coli* on May 2nd, and five were still positive on November 20, 1906. Not one of these men had suffered from any symptoms of diarrhoea or dysentery during this time.

D. On November 20, 1906, eight men were reexamined who were first examined July 10, 1906, four months and thirteen days having elapsed since the first examination. Of these eight men, five were positive for *Entamoeba coli* July 10, 1906, and two, or 40 per cent., on November 20. Neither of these men had suffered from diarrhoea or dysentery during this time.

As the result of our work in the examination of the faeces of healthy men we conclude that in the Philippine Islands a very large proportion of white men are infected with *Entamoeba coli*, and that such infection, so far as we have been able to observe, does not result in symptoms of diarrhoea or dysentery; in many of the cases the amoebae disappear, but in the larger proportion *Entamoeba coli* may be found even after the lapse of nine months, during which time the infected individuals have remained in perfect health as regards dysentery or diarrhoea.

We also conclude that *Entamoeba coli* differs very markedly from *Entamoeba dysenteriae* as regards its morphology, and that it is possible to distinguish these two species of amoebae by their morphological characteristics as observed in fresh specimens of faeces. We do not believe that the very large proportion of infections with *Entamoeba coli* which we have demonstrated can be explained logically by the theory of "latent infections," but only, as we have stated in a previous report, "by the fact that the nonpathogenic *Entamoeba coli* is the organism present in these cases instead of the pathogenic *Entamoeba dysenteriae*."

We hope during the coming months to undertake some experiments relating to the classification of amoebae and their relation to disease, and also to continue our work upon the subject under discussion.

We have been endeavoring to secure a simple staining method which would be distinctive for *Entamoeba coli* and *Entamoeba dysenteriae*, and which could be used in staining the amoeba in fresh specimens without killing them, and we believe that we have, in all probability, secured such a method. We shall give it a thorough trial and hope to be able to report upon it soon.

4. *The Mosquitoes Prevalent at Fort William McKinley, Rizal, P. I.*—The following mosquitoes have been collected at Fort William McKinley, Rizal Province, P. I., and identified for us by Mr. Charles S. Banks, the entomologist of the Bureau of Science of the Philippines government. These mosquitoes have all been collected during the past three months, and it is more than probable that many other varieties may be present at this post, as we have noticed a very distinct seasonal flight of certain species of these insects.

Anophelina.—*Myzomyia ludlowii*; *Myzomyia*

funesta, *Pyroplhorus frenei*, *Mythophilus bi-birostris*.

Culex, *Stegomyia*, *Anopheles*, *Sitona*, *Stegomyia scutellaris sinuatus*, *Culex fatigans*, *Culex gelidus cinctus*, *Culex tritaenariay* (1); *Momonia uniformis*, *Tridomys squamiferus*, *Desmoutia foveolata*, and five as yet unidentified species. Total, 17 species.

SOME NOTES ON BUBONIC PLAGUE AS SEEN IN SIAM

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This disease, which has caused more deaths in epidemics in the past centuries than any other, is now forging rapidly again to the front in the cycle of centuries, and it behooves all of the civilized nations to fortify and protect themselves strenuously by strict quarantine, or the terrible havoc of the dark ages in Europe and the present condition of affairs in India, Burmah, Siam, and China will be repeated all over the civilized world. When once it obtains a firm foothold it is almost impossible of complete eradication without the most strenuous measures of isolation and disinfection, as the very soil becomes infected with the germs of the disease. It is surely and slowly spreading to the ports of call on the east and west coasts of South America; to Egypt; the Suez Canal; Arabia; the ports on the Red Sea; to Japan, where the Japanese promptly stamp it out only to have it recur from fresh infection brought from without; to the Philippines, where the American doctors have done wonderful work; to the ports of the Arabian gulf; and to South Africa and African ports. Hong Kong is also badly infected, and it has been alleged that it has existed and flourished in Chinatown in San Francisco. If this is true the earthquake and resulting fire was not altogether an evil, for if plague existed there the fire would destroy it as was done by the great fire in London in the sixteenth century.

While the disease has raged unchecked in India and Burmah in spite of all the efforts of the British government (1,500,000 people died in India alone last year), it had been successfully kept out of Siam by strict quarantine till last year, when the infection was brought to Bangkok from Bombay, and now in spite of all efforts is slowly but surely spreading over the Siamese kingdom, following the lines of communication, till there are a number of towns in the interior where it is more or less prevalent.

My clinical experience has shown me that within two weeks after its invasion the rats commence to die, the people commence to take the disease. Also the initial number of cases is in direct proportion to the number of people who go about their daily avocation without shoes or stockings. The death rate among the rats is so large that in a short time it is impossible to procure any rats, no matter how large the reward offered. They practically all take the disease. My experience is that the first cause of infection is from rats, second from fleas, third from bedbugs, fourth from mosquitoes, and fifth from flies. I think I can prove that beside the

personal danger of infection in the pneumonic form of the disease and of the danger of infection from the soil by human agency, however, the danger of personal infection can be greatly lessened in direct proportion as the parasites in the order mentioned are destroyed in an infected locality. In the pneumonic form, which is always fatal, the sputum of the patient and even the breath will carry the bacilli of the disease. This is the form which has proved so fatal to attending physicians and nurses. Of course, this being a filth disease, the sanitation and cleanliness of the country are of the first importance and next the prevention of the importation of infected rats with their attending parasites.

The bacillus of plague being destroyed by a temperature of 120° F., the disease does not flourish and is not so virulent in the hot dry season and in the country where the sun has a good chance to disinfect the soil. This is not true, however, of the larger towns and cities, where the sun has not a chance, and plague therefore shows a greater menace to those countries in the temperate zone, where the temperature never reaches so high. In cities with stone buildings, like Singapore, Rangoon, and Hong Kong, only the most radical measures are efficient to stamp it out. In the Far East it is a great problem at present, for the use of force in isolation and disinfection with tropical peoples has almost always proved more or less of a failure. Not only will they conceal the sick, but will hide even the dead, and the usual evidence of an outbreak of plague is the number of dead found in the streets or homes. The best work in the Far East has been done by the American doctors in the Philippines, and too great praise cannot be given them.

Personally, in attending patients I always used plenty of coal oil on my shoes and stockings and on my leggings, as it has been shown that this kept the fleas away, a fact which was practically demonstrated in Bombay and Calcutta, where the coolie employees of the oil companies were found not to contract the disease which was raging all around them. The investigators in India found that on the death of a rat the infected fleas promptly left the dead rat, and if a noninfected rat was placed near them promptly attached themselves to him, and in a few days he was infected and died of plague. In the town of Petchaburi I traced the great and excessive death rate among the children to the fact that after the rats died the infected fleas took up their habitat on the pariah dogs, and these being petted and fed by the children, the children suffered proportionately. As the people are Buddhist in religion and will not destroy life, my application to have the dogs killed was not granted. One of the most effective measures to stop the disease after all disinfection and sanitation was accomplished was to wash all floors and furniture with crude coal oil, and sprinkle it with a watering pot in large quantities under the houses and over the ground in the vicinity.

I never found medicine to be of any use. In the detention camps on my daily morning and evening rounds I always used quinine as a diagnostic agent. On examining suspects and finding any one with fever, either with or without pain or soreness in groin or axilla, he was at once given twenty to thirty grains of quinine at one dose. Six hours later if

the fever was less in the slightest degree it was not plague. If the fever was higher it was plague, and the patient was at once sent to the detention hospital. In all of my patients this proved an infallible test, as often death followed so quickly that only a hardly perceptible swelling of the glands could be seen after death, and in the pneumonic form the only physical signs were fever, headache, and spitting of blood, no swelling of glands, and death in twelve to twenty-four hours from onset, the body turning black after death. I have seen many bodies after death in which the swelling of the glands was no larger than a walnut. I never saw but one case where the patient lived long enough to form a typical bubo with pus, and this patient finally recovered, one of the few recoveries.

At one time I was fighting outbreaks in four different towns, some of them 250 miles apart. Plague broke out at Korat, a town of 20,000 people, 200 miles north of Bangkok. By strenuous measures, burning down the infected premises, catching alive and burning after dipping in tar 24,000 rats, by detention camps and hospitals, and by strict quarantine, at the end of twenty-one days the epidemic was stopped, followed, however, some months later by a few sporadic cases. In this outbreak four men volunteered to stay in the hospital. These men took entire care of the sick, bathed them, buried the dead, and did all of the hospital work, also disinfected all of the houses not burned. Not one of them was taken ill. They were compelled to wash their entire body three times daily with a strong disinfectant, and also to rub coal oil over their bodies twice daily. The great importance of this was shown by the fact that, after a remission of ten days in which there were no new cases in the detention camp, when I was congratulating myself that the great number of people there were at last safe, to my dismay plague broke out again, and there were two more deaths in a few hours. As nine days is the limit of incubation I had to look for a new source of infection. The fleas were the only thing which seemed possible, and so new clothing was issued, all old clothing burned, and coal oil used freely everywhere, and there were no more cases.

Clinical Symptoms.—A few days after a large death rate among the rats of a town people here and there are taken with high fever, great headache, and slight swelling of glands in different parts of the body, attended with great pain and soreness. In children the swelling is usually at the angle of the jaw, in adults in the axilla or groin. Death follows in a few hours. The patient is sensible, and only complains of great headache. There is a very rapid, weak pulse, and appearance of profound systemic poisoning as in septicæmia, with practically the same result, as the body turns black at once after death.

The pneumonic form death rate is 100 per cent., while in other forms it is 85 to 90 per cent.

Strong tonics in mild cases do good by sustaining the heart. Dr. Amner, of Puket, tells me he has seen good results from heart tonics and stimulants, and he has had a large experience.

In my bad cases nothing did any good. I have seen and attended nearly two hundred cases of bubonic plague, and after my experience with yellow fever in the West Indies and cholera and plague in

Siam, I candidly say that I fear plague more than all the others put together that I have come in contact with in my professional life.

THE RELATION OF INSECTS TO THE DISSEMINATION OF DISEASE.*

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The insects which infest human habitations have for a long time been regarded with suspicion as being the carriers of the infective agents of certain diseases, especially the suctorial insects. This belief dates back to very ancient periods, antedating even the Christian era, but it is, however, only since the demonstration by Ross, in 1897, that mosquitoes actually convey the infective agents of malaria, that this suspicion has been firmly established. Study and observation have since demonstrated that a number of diseases may be occasionally, or even constantly, conveyed by insects.

While the earlier suspicions with regard to the agency of insects in the dissemination of disease were quite vague, we know now that the manner in which insects may serve as carriers of infection differs in several important particulars in different diseases.

1. The insects may serve merely as mechanical agents in the dissemination of disease through the soiling of their bodies with the infective material and in turn depositing this material on foodstuffs on which they may alight or into which they may fall.

2. Another mode of dissemination in which the insects also serve in a mechanical way is seen in such instances where they feed upon the infective materials and again throw off the infective organisms through their excretions and contaminate foodstuffs in this manner.

3. Certain suctorial insects may also serve in a mechanical way in disseminating disease when the infective agents in the blood of the diseased animal or person are carried to a healthy individual on the proboscis of the insect.

4. Some of the suctorial insects may also serve in a biological way as the disseminators of disease if the infective agent undergoes some transformation in the body of the insect before it is again transmissible to another individual.

5. In addition to this, suctorial insects may serve in a biological sense as the disseminators of disease when the female transmits the infective agent to its offspring, which in turn convey the organisms to healthy individuals.

The insects which are believed to be capable of serving either in a mechanical way or in a biological sense as the carriers or transmitters of the infective agents of disease are flies, fleas, roaches, mosquitoes, lice, bedbugs, and ticks.

The diseases which may be carried or transmitted by insects are typhoid fever, dysentery, cholera, plague, tuberculosis, anthrax, sleeping sickness, relapsing fever, filariasis, malaria, yellow fever, Texas cattle fever, and the spotted fever of the Rocky Mountains. Some of these diseases are only occasionally or accidentally carried by insects, while

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others are believed to be transmitted solely through the agency of insects.

Typhoid Fever, Dysentery, and Cholera.—The diseases in which insects may become the carriers of the infection through the soiling of their bodies with the infective excretions or secretions of those suffering from the disease are typhoid fever, dysentery, and cholera, and possibly tuberculosis.

Flies and roaches may become the carriers of these diseases when their bodies become soiled with the intestinal evacuations of persons suffering from typhoid fever, dysentery, or cholera, or the sputum of persons suffering from tuberculosis.

In typhoid fever, dysentery, and cholera the infective organisms are thrown off from the infected individual in the intestinal evacuations. Flies are especially prone to feed on all forms of human excrement, and whenever the intestinal evacuations of typhoid, dysentery, or cholera patients are not promptly disinfected dissemination may occur in this manner.

Roaches are active scavengers, and travel over considerable areas in search of food, and in their wanderings they may become soiled with the intestinal evacuations of typhoid, dysentery, or cholera patients and carry the infective organisms of these diseases to foodstuffs.

Neither flies nor roaches are believed to suffer from the infective agents of typhoid fever, dysentery, or cholera, so that they can disseminate the organisms of these diseases without becoming infected.

The relation of flies to the dissemination of typhoid fever is established through laboratory tests. During the summer of 1902, there occurred in Chicago an outbreak of typhoid fever in a portion of the city not provided with general sewers. The exclusion of other possible sources of infection led to the examination of flies caught in the houses, out houses, and yards of the locality, and typhoid bacilli were found on these insects.

The dissemination of dysentery and cholera through the agency of flies is equally possible where the intestinal evacuations of patients suffering from these diseases are not properly disinfected. Nuttall has recorded a number of instances in India where cholera was undoubtedly carried into institutions by flies. In each of these instances the flies appear to serve merely as mechanical transmitters of the infection. The manner in which the flies carry the infection is most probably by soiling their bodies with the dejecta of cholera patients and subsequently contaminating food materials.

Dysentery is believed to be carried by flies where the disease prevails in institutions. Here the dissemination of the infection may occur in two ways. The flies, after soiling their bodies with the dejecta of dysentery patients, may carry the infection directly to the lips of noninfected persons. This mode of transmission might readily occur in institutions where a number of children or debilitated persons are congregated, such as hospitals for children or insane asylums. This mode of transmission of dysentery is now so well recognized that it is customary to employ mosquito netting for the purpose of excluding flies from the beds of children in well conducted hospitals. Flies may also infect food materials by falling into receptacles containing milk, etc.

Tuberculosis.—Tuberculosis may be disseminated by flies in practically the same manner as typhoid fever, dysentery, or cholera, if they are allowed to gain access to the expectorations of tubercular patients. Aside from disseminating tuberculosis by means of their bodies soiled with tuberculous sputum, it is believed that flies may feed on the sputum and give off the infective agent with their intestinal evacuations. Ranvier, Holmann and others were able to demonstrate the presence of the tubercle bacilli in the intestinal contents and in the excrement of flies that had been caught in rooms occupied by tuberculous patients where the sputum was collected in a careless manner.

Plague.—Several kinds of insects are believed to be instrumental in the dissemination of plague. As long ago as 1498 Bischof Knud wrote as follows: "The first indications of the approach of plague are frequent changes in the weather in summer, much fog and rain, and the presence of many flies." Varwick in 1577 writes that in 1575, when plague prevailed in England, the summer was unusually hot and that many flies were observed. Diemerbroek, who observed plague in Norway and Holland, writes about 1646 that its approach was proclaimed by swarms of insects. Under exceptional circumstances flies may carry the infection by feeding on open plague sores and afterward lighting on other individuals having open wounds or sores of a different character. The plague bacteria, however, cause a fatal infection in flies, since Yersin and others have noticed that in localities where plague exists numerous dead flies are found, and bacteriological studies show the presence of living plague bacteria in the bodies of dead flies.

The insects which are believed to play a more important part in the dissemination of plague are fleas. These insects are believed to be capable of transmitting the disease from plague infected rats to healthy rats and also to human beings. The rat flea does not harbor on human beings, but merely feeds on them, and may therefore carry the infection to human beings from infected rats.

The relation of rats to plague is spoken of in the Bible, fifth and sixth chapters of the First Book of Samuel. The same idea also occurs in the writings of the ancient Greeks and Romans.

The flea which is found most commonly on rats in warm countries is *Pulex cheops*. These fleas occur on both *Mus rattus* and *Mus decumanus*. The rat flea in northern countries, where observations have been made, is *Ceratophyllus fasciatus*. This flea is also found on the common house mouse, *Mus musculus*—but less commonly than *Ctenopsylla musculi*. The flea which is most likely to harbor on human beings is *Pulex irritans*, though *Pulex cheops*, the common rat flea, will also bite human beings when its natural host is absent.

Rat fleas have been taken from plague infected rats and found to have the plague organism in their digestive tracts for eight days after capture. Plague can be disseminated among healthy rats by allowing infected fleas to bite them. The flea does not appear to suffer infection itself, but merely serves as the carrier of the infection. The knowledge of the part played by the rat flea in disseminating plague among rats has led to rigid care to prevent the possibility of rats leaving a plague infected ship.

as it is regarded as certain that rats may carry the infection from the infected ship to the healthy rats on shore. Through the agency of the rat flea the subsequent dissemination of the disease is most frequently accomplished. Measures to prevent rats from leaving infected ships have been instrumental in preventing the dissemination of the disease at the ports where infected ships have anchored. Likewise the bounty on rats which has been offered at various sea ports has served to prevent the dissemination of the disease, even after the rats on shore had become infected. Numerous plague infected rats have been found in different sea ports where the disease had not yet been carried to human beings.

Guinea pigs placed in plague infected houses attract rat fleas and contract plague. When placed in such a position as to protect them from contact infection and from fleas, no infection occurs. Rat fleas caught in plague infected houses have plague organisms in their stomachs (twenty-three out of seventy-seven examined), while human fleas from the same source are practically free of plague organisms (one infected out of eighty-five examined).

Ordinary methods of disinfection do not suffice to kill the fleas in plague infected houses, and the fleas are still able to transmit the disease.

The development of plague in a community is attended with the following phenomena: 1. Plague among rats, with many deaths. 2. A lull in the rat infection (that is, few dead rats are found). 3. Plague among men.

Anthrax.—Anthrax may be disseminated through the agency of several kinds of insects. Flies may carry the infection if allowed to feed on the blood of dead animals that have been quartered. Their bodies may become soiled with the infectious materials and thus serve to convey the infection to open wounds or sores on human beings.

Gad flies or horse flies in biting infected animals may in rare instances carry the infectious organisms on the proboscis to human beings and in biting them insert the organisms underneath the skin, at least anthrax infection has followed the bite of such insects, especially in such instances where the insects were killed and the bacteria introduced into the wound in this manner. In this instance the insects are merely the mechanical agents in the dissemination of the disease.

The literature on this subject contains a number of instances in which anthrax infection is traced to the bite of flies and other insects. As early as 1760 Goutard reports such a case. Among those which followed the bite of flies in which the insect was killed, and in which there is a fair degree of probability that the infection was carried in this manner, Nuttall mentions four cases—that of Siederer in 1839, that of Estradère in 1875, that of Edouard in 1882, and that of Griffin in 1884.

Raimbere, Davaine, Bollinger, Méglin, Celli, Nuttall, and others have endeavored to solve the question experimentally. The experiments show that different species of flies may carry the anthrax bacteria on their bodies for some time after they have been in contact with infectious materials, but not one of the experimenters was able to demonstrate the actual transmission of the disease, through the bite of the infected insect, to experimental animals. Nuttall also experimented with anthrax in-

fecting bedbugs and fleas, but in no instance was he able to convey the infection to experimental animals by means of insects infected with anthrax cultures or with insects taken from infected animals and placed on healthy animals.

The diseases which have been discussed so far are all due to definitely defined species of bacteria, and the insects are merely mechanical transmitting agents. This mode of dissemination is exceptional in each of these diseases, and in some of them probably quite rare. For a number of other diseases, however, the insects appear to be the common carriers of the infection, and in some of these they are believed to be the only modes of transmission from the sick to healthy individuals. The diseases of this group are probably all due to animal parasites and not to bacteria. In most of these diseases the insects serve as the definitive host of the parasite. One phase of the life cycle of the parasite, the asexual phase, is seen in the vertebrate animal of human being, and the sexual phase of the parasite is seen in the transmitting insect.

In those instances where the parasite undergoes the sexual phase of development in the body of the insect a definite period of time must elapse between the sucking of the infected blood and the stage when the infection is transmitted to healthy individuals.

Sleeping Sickness.—Sleeping sickness is a disease which is as yet confined to certain areas in central Africa, but it is extending to wider and wider areas, and it is also attacking Europeans as well as the natives, so that recently this disease has created much interest and concern.

The disease is believed to be conveyed only through the bite of the tsetse fly, *Glossina palpalis*, and appears to occur only in such areas where this insect is encountered.

Sleeping sickness is stated to have been the cause of 600,000 deaths in central Africa during the past ten years, and hence it is a disease of great importance from a public health standpoint, especially because it tends to extend to new territory as the means of communication become favorable.

Whether the parasite of sleeping sickness, *Trypanosoma gambiense*, undergoes some form of development in the body of the fly, or whether it is transmitted directly by means of the infected proboscis, cannot be stated definitely, but the general opinion is that it is transmitted directly without undergoing any transformation in the body of the fly.

The species *Glossina palpalis*, which is the transmitting agent for *Trypanosoma gambiense*, is believed to differ somewhat from the variety *Glossina morsitans*, which transmits the parasite of a trypanosomatic infection of horses, due to *Trypanosoma brucei*, although morphologically the two parasites resemble each other. There is, however, an important difference between the two parasites in that *Trypanosoma brucei* is easily affected by human blood serum, while *Trypanosoma gambiense* is not. Several other forms of trypanosomatic infection occur in horses, cattle, sheep, dogs, and birds which are believed to be transmitted by means of biting flies. The trypanosomatic infection seen in rats, due to infection by *Trypanosoma lewisi*, is believed to be carried from diseased to healthy rats by fleas. McNeal has also found that *Trypanosoma lewisi* is transmitted from diseased to healthy rats by in-

ected lice. One that had been allowed to suck the blood of infected rats had the parasites in their stomachs for some time. He found no evidence that the parasites underwent transformation in the lice.

Relapsing Fever.—Relapsing fever is seen under such surroundings as to make it quite probable that it is transmitted either by fleas, lice, or bedbugs. Karlinski found that the *Spirillum of Obermeier*, which causes relapsing fever, remains alive in the intestinal tract of bedbugs for more than twenty days, while it dies in a short time in lice and fleas. Nuttall found, however, that the spirillum lives only a short time in the body of the bedbug. Though the relation of the bedbug to the transmission of relapsing fever is not definitely established, it is believed to be the most probable transmitting agent.

Filariasis.—*Filaria bancrofti*, the cause of filariasis, is believed to be transmitted through the agency of mosquitoes. After sucking the blood of an infected individual, the parasite undergoes transformation in the body of the mosquito, and it is only after the completion of this transformation that the young worms are transmitted to healthy individuals through the bite of the mosquito.

Malaria.—The idea that mosquitoes may be concerned in the dissemination of malaria was advanced previous to the Christian era. The Roman authors, Varro, Vitruvius, and Columella speak of the relation of mosquitoes to malaria about 100 B.C. Similar ideas have been encountered in various parts of the world amongst peoples living in the rural districts. Such ideas were expressed by the Italians, Tyrolese, and the natives of German East Africa.

Nott, of New Orleans, mentions the mosquito malaria theory in 1848 and speaks of it as if it were a generally accepted fact. The theory has been proclaimed by different scientists in more recent times as practically a new discovery. Laveran was the first (1891) to promulgate the theory. In the same year Flügge brought forward facts to substantiate the theory. This theory was rapidly accepted by others; by Koch and his pupil, Pfeiffer, in 1892; by Manson in 1894; and by Bignami and Mendini in 1896. In 1897 Ross succeeded in demonstrating the course of development of the malarial parasite in the stomach and stomach wall of the mosquito. Ross's discovery was made only after the examination of more than a thousand mosquitoes.

The exact mode of reproduction and the nature of the encysted forms of the malarial parasite in the stomach wall of the mosquito was discovered by MacCallum, of Baltimore, while investigating bird malaria. Later Ross demonstrated that these encysted forms are the fecundated female cells of the parasite. These observations were soon confirmed by others in further studies of the malarial parasite in the mosquito.

The great difficulty experienced by Ross in discovering the malarial parasite in the stomach of the mosquito was due to the unrecognized fact that the malarial parasite develops only in the stomach of certain species of mosquitoes of the genus *anopheles*. When this fact had been recognized the study was much simplified. When other varieties of mosquitoes suck the blood of malarial patients, the para-

site does not find in their bodies the appropriate conditions for development.

The relation of mosquitoes to the transmission of malaria is a most interesting scientific discovery. The malarial parasite undergoes sexual development in the body of certain species of mosquitoes of the genus *anopheles*. No other genus of the mosquito is believed to be capable of serving as the definitive host of the malarial parasite. Even not all species of *anopheles* are believed to be equally capable of serving as the host of the malarial parasites, at least some species are more frequently found to serve in this capacity than others.

When the mosquito sucks the blood of a malarial patient sexual union of the male and female elements of the parasite occurs in the mosquito's stomach. After the female element of the parasite has become fecundated it penetrates into the wall of the stomach and becomes encysted there. In this location segmentation of the parasite occurs with the development of the young forms. The cyst, when fully developed, ruptures into the body cavity of the mosquito and the young parasites finally all lodge in the salivary glands. When the mosquito bites an individual, at this stage, it injects the young parasites into the tissues and brings about the infection.

The development of malaria in a particular locality is dependent upon several important factors, the absence of any one of which insures the absence of malaria. The factors concerned in the development of malaria are: (1) The presence of an infected individual from whom the mosquitoes may derive the parasite; (2) the presence of mosquitoes of the genus *anopheles*, as it is not known that any other genus of mosquito can serve in the capacity of host for the parasite; (3) the presence of small bodies of fresh running water in which the mosquitoes may breed, as in the larval and pupal phases of its life the mosquito is an aquatic animal; and (4) a temperature sufficiently high to permit the aquatic development of mosquitoes, as well as for the development of the parasite in the body of the mosquito. These facts explain the geographical distribution and the seasonal prevalence of malaria. The disease is most prevalent where the climatic conditions are favorable for the rapid breeding of the mosquitoes.

Large numbers of *anopheles* mosquitoes may occur in a locality without the occurrence of malaria, so long as the mosquitoes remain uninfected. When, however, a chronic case of malarial infection is imported into such a locality the disease develops if the climatic conditions are favorable for the development of the mosquitoes and the climate is suitable for the development of the parasites in the mosquitoes.

The introduction of malaria into localities long free of the disease can frequently be traced to infection carried by a recent Italian immigrant. Such outbreaks usually occur where Italian labor is employed in the construction of railroads, digging of trenches, or work of a similar nature. It was believed some years ago that disturbance of virgin soil in these operations was instrumental in the development of malaria. In the light of scientific investigation this hypothesis falls to the ground.

Prophylaxis against malaria may be grouped under the following headings: I. Quinine for the des-

truction of the parasite. II. Measures against mosquitoes; a, destruction of breeding places; 1, by oiling waters; 2, by draining low places; 3, by introducing fish into water; b, by screening houses; c, by fumigating houses.

Certain details of our knowledge of the relation of mosquitoes to the transmission of malaria have been gained through the study of the transmission of a somewhat similar parasite among birds. Bird malaria is transmitted through the agency of mosquitoes of the genus *Culex*. The parasite of bird malaria has proved more amenable to study than the parasite of human malaria.

Yellow Fever.—Yellow fever is also transmitted solely through the agency of mosquitoes, of the genus *Stegomyia*, *Stegomyia fasciata*. This important discovery was made by the late Major Walter Reed and his associates on the commission sent by the United States War Department to Cuba in 1900 for the purpose of studying yellow fever.

As long ago as 1848 Nott, of New Orleans, advanced the theory that mosquitoes are concerned in the dissemination of yellow fever. In 1881 Dr. Carlos J. Finlay, of Havana, again advanced the theory. In subsequent years Finlay sought to produce yellow fever experimentally through the bites of mosquitoes. Although Finlay obtained positive results his experiments were conducted under such conditions that it was impossible to say whether external sources of infection had been excluded in his cases. The theory of the relation of mosquitoes to the dissemination of yellow fever was strengthened through the observation of Dr. Henry R. Carter, surgeon of the Marine Hospital Service, that "the period from the first (infecting) case to the first group of cases infected at these houses (isolated farm houses) is generally from two to three weeks." The experiments of Finlay and the observations of Carter pointed the direction in which new studies should be conducted to throw light upon the subject. Major Reed and his associates followed out these suggestions with great success. The United States Army Commission working in Cuba in 1900 investigated thoroughly the occurrence of bacteria, especially *Bacillus icteroides* of Sanarelli, in the blood of living subjects. The negative character of their bacteriological studies led them to study the modes of transmission of the disease. Two series of experiments were carried on simultaneously, the one attempting to ascertain whether the disease is transmitted by fomites, and the other the influence of mosquitoes on the transmission of the disease.

In a very short time the commission demonstrated that the disease is not transmitted by fomites but that it is transmitted by mosquitoes that have bitten infected individuals. Two members of the commission allowed themselves to be bitten by mosquitoes and both developed yellow fever, the one, Doctor Lazear, succumbing to the disease, and the other, Doctor Carroll, barely escaping the same fatal termination. In a short time other nonimmune persons had the disease transmitted to them through the agency of infected mosquitoes.

The Yellow Fever Commission demonstrated that after sucking the blood of a yellow fever patient, the mosquito is incapable of transmitting the disease to healthy individuals until at least twelve

days have elapsed, and that when once infected the mosquito may transmit the disease as long as fifty-seven days after becoming contaminated.

Although we have not yet discovered the parasite of yellow fever, our knowledge of the fact that it is only transmitted through the agency of mosquitoes has made it possible to eradicate the disease from Cuba after its continual presence for more than a hundred years, and also made it possible to eradicate it from New Orleans in 1905.

The factors necessary to the development of yellow fever in a locality are similar to those enumerated for malaria. In yellow fever, however, we are dealing with a mosquito of a different genus, and hence an insect of somewhat different habits from the anopheles.

The *stegomyia* prefers to breed near human habitations, in such receptacles containing water as old tin cans, water tanks, cesspools, and the like.

One of the most effective measures employed to eradicate the disease in New Orleans in 1905 was the careful screening of all water tanks so as to prevent the mosquitoes from gaining access to them as possible breeding places. In addition to this, all bodies of water not used for drinking purposes were covered with a thin film of petroleum to destroy the larval forms of the mosquitoes. These measures probably had a great influence in eradicating the disease, though, in addition to these, two other measures were also employed, viz., all patients suffering from yellow fever were treated under mosquito netting so as to prevent the infection of other mosquitoes, and all houses and out houses were systematically disinfected with sulphur fumes to kill the adult mosquitoes.

It is evident that the yellow fever parasite passes through a developmental phase in the body of the mosquito, since the insect does not become infective until about twelve days after sucking the blood of a yellow fever patient.

Piroplasmoses.—Diseases in which the red blood corpuscles are invaded by an animal parasite which differs materially from the parasites of malaria have been discovered in cattle, sheep, dogs, horses, and in man. Because of the peculiar appearance of the parasite of piroplasmoses, the distinctive name has been coined for it. In all of these diseases a certain type of tick has been discovered to be the transmitting agent.

Texas Cattle Fever.—Though not infectious to a marked degree, this disease has an important relation to the subject under discussion. The mode of transmission of Texas cattle fever is of a type entirely different from that seen in any of the diseases discussed. The transmitting agent in this disease is the cattle tick, *Boophilus bovis*, as discovered by Theobald Smith in 1891. This insect is believed to be incapable of transmitting the disease directly. The fecundated female tick sucks the blood of infected cattle and then falls to the ground to deposit its eggs. The eggs hatch after twenty to forty-five days, and the young ticks attach themselves to the cattle and carry the infection.

It will be seen that in the transmission of this disease two generations of ticks are requisite to complete the cycle of development of the parasite and permit the dissemination of the disease from infected to healthy cattle.

Although piroplasmoses of cattle is not frequently transmitted to human beings Lingard has found the *Triplasma brevinus* in a herdsman who was suffering from malaria. He regards it as probable that the tick is capable of transmitting the parasite of cattle fever to individuals that are otherwise debilitated.

Other species of ticks are also believed to be instrumental in the transmission of disease among sheep, dogs, and other animals. None of these diseases is, however, infective to man, so far as known.

Spotted Fever of the Rocky Mountains.—This disease is localized along the foothills of the Rocky Mountains in Montana and Idaho. It is believed to be due to a parasite localized in the red blood corpuscles of human beings, and which is transmitted by means of a tick, *Dermacentor occidentalis*, infesting the gopher. While certain details of the nature of this disease and the mode of its transmission are still unsettled, it is of importance in this particular, because the evidence seems to indicate a close similarity in the form of the parasite and in the mode of its transmission to that seen in piroplasmoses of the domestic animals.

In the bacterial diseases which have been enumerated the insects serve in a mechanical way as the transmitting agents of the infection. In these diseases, with the exception of anthrax, the infectious organisms are contained in the circulating blood in relatively small numbers, so that a suctorial insect could not readily become infected. In these diseases, likewise, the infectious organisms are thrown off from the body of the infected person through one or more of the excretory products, so that the insects take up the infectious organisms by becoming soiled with these excretory products.

In the diseases due to animal parasites, and in anthrax, the blood is the principal field of activity of the parasite, and in these diseases the suctorial insects are the transmitting agents. In the diseases due to animal parasites it requires a direct implantation of the infective organisms into the blood or tissues of a healthy individual to assure infection. The suctorial insects are, therefore, adapted both for the purpose of removing the organism from the blood of the infected individual and for the implantation of these organisms into the blood or tissues of healthy individuals.

In the diseases due to the animal parasites we see a most remarkable adaptation to complex conditions on the part of the parasite to bring about the perpetuity of the species. They must contend against not only the adverse conditions of unsuitable soil and climate in their environment, but also the possibility of the absence of either the vertebrate or insect host, both of which are absolutely essential for their perpetuity.

Notwithstanding the complex conditions with which the animal parasites are obliged to contend, we find it a difficult problem to annihilate them. That a definite limitation of their activities is possible when we know all the factors upon which they are dependent for their existence is seen in the success of our efforts to eradicate yellow fever and in our efforts to limit the ravages of malaria.

We see that one after the other of the former suppositions with regard to the probable relation of insects to the dissemination of disease is being

substantiated and presented to us as established fact. In other diseases the agency of insects in the transmission has been surmised, but of the great epidemic diseases those enumerated are the more important ones in which such a relation has been definitely established.

The aetiological factors of smallpox, of scarlet fever, and of measles have not yet been definitely discovered, and for these diseases insect transmitters have been sought but have not been found. Until such time when the aetiological factors of these diseases are definitely known the mode of transmission will probably remain a field for speculation.

3005 THE X RAY

THE X RAY, ULTRAVIOLET RAY, AND HIGH FREQUENCY CURRENTS IN DIAGNOSIS AND THERAPY.*

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The X Ray.—This may be regarded as a form of light, the vibrations of which are so rapid as to make it invisible to the human eye. We become cognizant of its presence when its rays fall upon some substance which slows up the vibrations and renders it visibly luminous. Such substances are said to be fluorescent, and a necessary part of the x ray outfit is a fluorescent screen or a fluoroscope, consisting of a dark box, which may be held to the observer's eyes, and the bottom of which is coated with a fluorescent substance. Barium platinocyanide and calcium tungstate are very commonly used for this purpose.

The property which especially distinguishes the x ray is that it will pass through many substances which are opaque to ordinary visible or invisible light rays. This is not so strange as it seems at first. The different colors, or different wave lengths of ordinary light find different substances transparent to one and opaque to others. A photographer's dark room is fitted with a window of ruby glass, which transmits a sufficient amount of red light to read by, but arrests all the ultraviolet, violet, and other colors at the end of the spectrum which is more actinic or chemically active. A pure violet light placed outside of such a window would be completely arrested, it would contain no red rays to shine through the glass, and the dark room would be in complete obscurity. A great many such experiments might be tried with ordinary light. Daylight and the light from most artificial sources is made up of all the different colors of the spectrum. Some substances like window glass are equally transparent to all of these, and the light traverses them unchanged. Other substances, like colored glass, are transparent to certain wave lengths and opaque to others, and light which has passed through these substances possesses a color corresponding with the wave lengths which are chiefly transmitted. Transparency, or opacity to ordinary light, is due, like color, to differences in chemical composition or molecular arrangement. With the same composition the diamond is perfectly transparent and coal completely opaque to ordinary light.

*Read before the Parent Medical Library Association, Orange, N. J., April 9, 1907.

Transparency, or opacity to the x ray, is largely a matter of density. A piece of black paper is just as transparent as a piece of colorless oiled paper. A sheet of aluminum, one eighth of an inch thick, is very transparent to the x ray, much more so than a piece of glass of the same thickness. Lead of any considerable thickness transmits so little of the x ray that it may be regarded as opaque. Bone is transparent, but casts quite a dark shadow in comparison with the flesh, and the lungs and other air spaces cast very faint shadows. An x ray picture is a chart of the relative density of the portions of the body through which the x ray passes in reaching the photographic plate.

Different Degrees of Penetration.—The radiance from an x ray tube, like that from a source of ordinary light, is made up of different rates of vibration. X rays of different wave lengths have different degrees of penetration. The less penetrating rays are practically all absorbed by the skin, and if an x ray tube has so low a degree of vacuum that it gives out these rays almost exclusively the flesh of the hand will appear black and the bones may not be visible. A tube with an extremely high degree of vacuum may give out almost exclusively highly penetrating rays to which both the bones and flesh are very transparent. Neither the bones or the flesh will present sufficient contrast with the bright background to make a good picture.

A tube with a medium degree of vacuum gives out rays of all degrees of penetration and produces a picture in which beautiful detail and contrast are combined. It is important to be able to recognize this quality of radiance and to be able to secure it by regulating the degree of vacuum in the tube.

Measurement of the Quality of the Radiance.—This is effected in two ways: First, by direct observation with the fluoroscope and such a test object as the human hand, which is very dangerous, indeed, or a radiometer like the author's, which consists of different thicknesses of lead foil weighing an ounce to one hundred square inches. The number of thicknesses of lead through which one can see holes cut out of heavy sheet lead gives the degree of penetration of the ray. This should be between three and nine for different purposes. Second, the quality of the radiance may be measured indirectly by noting either the resistance of the tube, as indicated by the spark which it will back up at the induction coil, or the number of milliampères of current which the resistance of the tube will allow to pass from one pole of the coil through the tube to the other pole. A medium degree of vacuum has a resistance equal to that of a spark about three inches long in the open air. If the current will flash across six or eight inches between the poles of the induction coil, in preference to passing through the tube, the vacuum is too high.

Regulation of the Degree of Vacuum and Hence of the Quality of the X Ray.—It is absolutely essential that the tube be provided with a regulator, by means of which gas may either be liberated inside of the tube or admitted to it from without. X ray tubes usually develop a higher and higher vacuum in consequence of repeated use. This is due to the dissemination of metallic particles inside the tube. These are driven from the electric terminals by the

powerful current and absorb a great many molecules of gas. A powerful current passed through the special regulator of the tube, liberates these absorbed molecules of gas, and lowers the degree of vacuum for the time being.

Another favorite type of regulator has a small palladium or platinum tube leading from the x ray tube and sealed at its outer end. This metal tube is heated red hot by an alcohol lamp, the metal becomes porous and allows hydrogen gas from the alcohol flame to enter the tube.

Importance of the Proper Quality of X Ray in Therapeutics.—The least penetrating rays are arrested and absorbed by the skin. They produce a therapeutical or a pathological effect dependent upon the condition of the skin and the distance, intensity, duration, and frequency of the application. These soft rays, as they are called, are useful in treating eczema, psoriasis, ringworm of the scalp, and some cases of lupus and epithelioma. In some cases the tube may advantageously be regulated so as to produce only soft rays. They are the rays which produce x ray burns, if the exposure is too great. These rays, which would be absorbed by the skin and would cause an x ray burn in case of over exposure, may be arrested by interposing a piece of sole leather between the x ray tube and the patient. I use such a shield when making x ray examinations and in x ray treatment, especially about the face. This has reference to cases in which the tube has a medium degree of vacuum and is giving out rays of various degrees of penetration and in which the rays which are desired are those which will penetrate the flesh and produce a picture or an effect upon the deep tissues.

Rays of medium penetration are beneficial in cancer, tuberculosis, leucæmia, colitis, rheumatism, neuralgia, glandular swellings, and similar conditions.

Rays of very great penetration are of little or no use for therapeutical or radiographic purposes, but over exposure to these will produce a dermatitis or even a periostitis.

The Dosage of the X Ray.—After securing the proper quality of x ray it is necessary to be able to measure the amount of x ray that it is safe to apply in radiography and the amount required to produce therapeutical results with safety. The x ray produces no sensation at the time, so that we do not have that as a guide. The effects are produced days or even a week or two after the exposure, and they are cumulative. Thirty minutes' exposure produces practically the same effect, whether given at one time or distributed through a week. It really takes three weeks for all the effect to pass away, and if the maximum dose is applied there should be no further exposure until the expiration of this time.

There are several methods of dosage. One may depend simply upon experience. He may know that with a certain strength of current, and the vacuum of the tube in such a condition, an exposure of a certain number of minutes at a certain distance will produce a certain effect. This method was the only one open to the original workers with the x ray, and they learned by sad experience upon themselves or their patients how to properly regulate the dose.

Better methods are based upon a change in color which certain chemical substances undergo after

exposure to the x ray. One of these test apparatuses which I now pass around is the Holzkecht's chromoradiometer, and I believe it is the only one of its kind in America. A chemical tablet is placed upon the surface of the body and exposed to the x ray at the same time. When the x ray is turned off this tablet is compared with the test colors of the scale and if it corresponds with the one marked 1 H it means that 1 Holzkecht unit of x ray has been absorbed. A longer exposure will indicate 2, 3, 4, etc., up to 7 H. The latter is the largest dose that can be applied without causing destruction of the skin, and it should not be repeated inside of three weeks.

Another similar apparatus is that of Sabourand and Noire which I also pass around to-night. It consists of a tiny barium platinocyanide screen which is held midway between the patient and the tube during exposure to the x ray. The original color is a beautiful apple green, which gradually changes to orange. There is a single test object with which it may be compared from time to time, and if the barium platinocyanide has changed to exactly this shade of color the maximum dose of x ray has been applied.

Kienbock uses little pieces of photographic paper, very accurately sensitized, which are exposed at the same time as the patient, and developed for an exact length of time in a standard solution. The shade to which the paper turns indicates the amount of x ray applied.

The author employs all of these methods, but finds them less available for use at every single application of the x ray in diagnosis or treatment than for use as a laboratory method of standardizing his own system of measurement.

The methods just described are means of determining the total quantity which has already been applied. They do not enable us to determine beforehand how long the application must last at a certain distance in order to produce a certain result.

The author's method determines the intensity of the x ray just as a photometer measures the candle power of an electric lamp. If we know from our laboratory records that an exposure of a certain number of minutes to an x ray of a certain intensity at a certain distance is equal to a total quantity of seven Holzkecht units it is a simple matter to calculate the length of exposure required for the application of one or more Holzkecht units.

Measurement of the Intensity of the X Ray. The Author's Method of Dosage.—This consists in finding out to what distance the x ray will carry with sufficient strength to produce visible light in the fluoroscope. The measurement is made before the x ray treatment or examination is begun. The observer holds the ordinary dark box fluoroscope to his eyes while he back away from the x ray tube and the nurse turns the x ray on and off. In this way he finds the greatest distance at which the fluoroscope may be held and still show visible fluorescence when the x ray is turned on, and darkness when the x ray is turned off. This distance expressed in yards gives the intensimetric numbers. If it is five yards the intensity of the x ray is said to be 5 Tousey. This is a suitable strength for most x ray treatments. Three applications a week at a

distance of nine inches from the patient to the anti-cathode or central disk of the tube, each application lasting from three to five minutes, have been made by the author in the successful treatment of inoperable recurrent carcinoma, psoriasis, etc. An intensity of 12 to 15 Tousey is required for x ray examinations and not less than 10 Tousey for treatment of a minute or less.

The effect of the x ray upon the human body has a depressing influence on every tissue which it penetrates. Some tissues, like the retina of the eye, the essential cells of the testis, the white blood cells, and most tumors, and other morbid tissues, are especially susceptible and may be destroyed by exposures from which less susceptible tissues receive no perceptible injury. The cumulative effect of the x ray is of great importance in this connection. The applications may be of such a strength and frequency that the more susceptible tissues do not completely recover from one application before the next one is made, while the less susceptible tissues do so. The effort of the radiologist is to regulate the dose as to produce just this effect. We then see a tumor or a gland or an area of psoriasis, or of ringworm of the scalp, disappear apparently by absorption and without ulceration or injury to the skin.

The x ray worker must especially guard himself against repeated mild or severe exposures of the hands, several cases of cancer having been brought about in this way. And the cumulative effect upon the testicular cells is sure to produce sterility if the x ray worker makes a practice of standing where the direct rays will shine upon him.

High Frequency Currents and Ultraviolet Ray Vacuum Electrodes.—The possession of an induction coil powerful enough for x ray work enables us to use a recently discovered and wonderfully effective form of electricity. These high frequency currents as ordinarily applied in the treatment of different diseases have a tension of a great many thousand volts and a strength of two or three hundred milliamperes. These figures are greatly in excess of anything which could possibly be used under the old forms of galvanic or faradic currents. The reason that currents of this power produce no muscular contraction, or disagreeable sensation, or dangerous results, lies in the enormous frequency of their alternations. The current is an oscillatory one or forms back and forth surgings through the body of the patient at the rate of a few million times a second. The motor and sensory nerves are entirely unable to respond to such rapid stimuli just as the eye cannot perceive the most rapid rays in the solar spectrum, the ultraviolet rays, and just as the ear cannot detect the most rapid of sound vibrations. The best example of the latter occurs in the case of two people, one of whom has his ears fairly pierced by a shrill noise which another person cannot hear at all.

The high frequency current is produced by charging Leyden jars with the powerful secondary current from an x ray coil, and discharging the Leyden jars through coils of wire called solenoids, or resonators, according to their form and arrangement. The application of these currents to the patient is interesting, and is accomplished in various ways. One method is by means of a glass vacuum

tube which is exhausted until it contains about 0.001 of atmosphere. This is a Geissler tube and is of the same nature as the Moore electric light tubes, many yards long, which are used for lighting certain stores in New York. The stem of the vacuum electrode has a leading-in wire and is screwed into a metallic handle connected with the high frequency apparatus by a wire. When the current is turned on the tube fills up with violet or lavender or bluish light which is greatly increased when the glass bulb is applied to the patient. A meter interposed between the high frequency apparatus and the electrode shows the strength of the current, and this is further evidenced by the shower of beautiful violet sparks which pass to the patient when the electrode is held at a distance from the skin. In some high frequency applications the patient holds a metallic handle connected with one pole of the apparatus while the glass vacuum electrode is connected with the other pole. Other apparatuses are unipolar, the only connection being with the vacuum electrode.

The beneficial effect is due to several different factors. *First*, there is the electric current itself with its well known stimulating, resolvent, and anodyne effect. It is, of course, more concentrated near the electrode, but a tiny shower of violet sparks may be obtained from any other part of the body if some one else touches the patient during the application. It is very pretty to have the patient hold a vacuum electrode in the palm of the hand, and then to run your finger nail lightly over the dorsum of the hand and see the violet light and tiny sparks produced. *Second*, there is a considerable production of ozone upon the surface, and the odor of this is perceptible upon the hand, for instance, after a minute's application, and will remain for several hours unless washed off. Some of this very active form of oxygen is carried into the tissues by the current, and a further amount is produced in the tissues by electrolysis. Tiny vacuoles or spaces are produced in the tissues, and these are full of ozone. *Third*, there is the effect of the light, not only the visible violet or blue light in the tube, but also the invisible ultra-violet rays, the presence of which may be demonstrated by means of some fluorescent substance such as Willemite. The latter is a whitish rock which becomes a beautiful green under the influence of ultraviolet rays. *Fourth*, there is the effect of heat, and this can be regulated from a degree which is scarcely perceptible to one which cannot be borne for more than a few seconds at a time.

Therapeutical Indications for the Application of High Frequency Currents by Vacuum Electrodes.—

1. *Local Conditions.*—Among these are warts and epitheliomata which can often be cured by a single application of a prolonged shower of sparks, an anæsthetic effect having previously been obtained by holding the vacuum electrode in contact with the skin. Other local applications are made for psoriasis of the scalp, eczema, neuralgia, neuritis, sciatica, Rigg's disease of the gums, sprains, inflammations, colitis, hæmorrhoids, etc.

2. *Constitutional Conditions.*—Rheumatism, gout, diabetes, and arteriosclerosis are among those which have yielded in a marvelous manner to this treatment in the author's practice. Tuberculosis also has been very much benefited.

To obtain a constitutional effect the vacuum electrode should be passed over about one quarter of the surface of the body for about fifteen to thirty minutes, three times a week. The surface to which I make the application includes the region of any local manifestation of the disease, and very often along the spine and over the distribution of the great sympathetic nerve in the abdomen.

The principal other methods of applying high frequency currents are by the autoconduction cage and the autocondensation couch.

The Autoconduction Cage.—The currents from the high frequency apparatus are passed through a large spiral of wire inside of which the patient stands, or sits, or reclines. The effect upon him is produced in a manner similar to the magnetizing effect produced by an electric current upon a bar of iron or a compass needle by an electric current passing through a coil of wire surrounding it. This is the application with which Moutier and others have obtained such wonderful results in high arterial tension from arteriosclerosis and other causes.

The Autocondensation Couch.—Two large metallic sheets may be placed beneath an insulating mattress, one beneath the patient's shoulders and the other beneath his hips. They are connected with the two poles of the high frequency apparatus and when they are charged each one produces an induced charge in the nearest portion of the patient. This is done in the same way that the outer coat of a Leyden jar is charged when the knob connected with its inner coat is touched to one pole of a static electric machine. No current passes directly from the apparatus to the patient, but currents are induced in the patient surging back and forth synchronously with those in the apparatus.

There is a slightly different type of autocondensation couch in which the patient grasps handles connected with one pole of the high frequency apparatus, while he lies upon an insulating mattress beneath which is a metal sheet connected with the other pole. This produces a similar effect.

Autocondensation has the same properties as autoconduction, but is usually regarded as producing somewhat less effect.

I may mention a single case showing the wonderful promptness of the effect of high frequency currents in some cases.

CASE.—The patient, recommended to me by Dr. Rushmore, of Tuxedo, was Mrs. C., sixty-six years old, and a delicate little woman, weighing about ninety-five pounds, who had suffered so severely from sciatica and from anterior crural and spinal neuritis that she had been practically confined to the house for two years. Her husband, the vice-president of the Board of Directors of one of our great hospitals, came to see me beforehand to ask whether there was any possibility of injury and whether there was sufficient probability of benefit to make it desirable. He knew what a painful effort it would require for her to get into the carriage and come to my office. She came that same afternoon and after the second treatment she went shopping, the first time she had been inside a store for seven months. Treatments were given three times a week, and after the fourth treatment she went to her son's wedding in Massachusetts, and after the seventh and last treatment she found herself without an ache or a pain, and now after the fifteen months there has been no recurrence.

Electric Light Therapy.—I have brought with me

for demonstration to night some of the lamps which are used for treatment. The different colored rays, red, blue, and violet, and the invisible ultraviolet rays at one end, and the invisible heat rays at the other end of the spectrum, all have therapeutical effects. They are produced in different proportions by different types of electrical lamps and so these different lamps have different uses.

The distinctively ultraviolet ray lamps are all arc lamps, and have electrodes of iron or some other metal instead of carbon. The one that I show to-night is the Piffard modification of the Görl lamp. A Leyden jar charged by the secondary current of an x ray coil is discharged across a series of gaps between metallic electrodes. A lens of quartz crystal is over the end of the lamp and enables us to make pressure upon the skin. The red coloring matter of the blood is opaque to the ultraviolet ray, and the tissues must be blanched either by pressure or by the use of adrenalin in order to make the application effective. Glass is opaque to this form of light, and I shall show you a very pretty experiment in which a pair of spectacles is interposed between this lamp and a piece of Willemite. Where the ray shines directly upon the Willemite the latter presents beautiful green fluorescence, but where the light has to pass through the glass the Willemite looks a dirty white.

Such a light is allowed to shine upon a patch of lupus and has a curative effect, but much weaker than the x ray.

Marine Searchlights yield some ultraviolet rays, but mostly heat and visible light rays. Their uses are practically the same as those of incandescent lamps.

Incandescent Lamps in Therapeutic Use.—The one which I shall exhibit to-night contains a single powerful bulb surrounded by a parabolic reflector. It is held at a distance of eighteen inches and produces intense heat rays and all of the visible rays of light. The latter may be restricted to individual colors, red, blue, etc., by the use of different colored bulbs or screens. Its primary effect is rubefacient, and it is excellent as an anodyne and to promote circulation and perspiration. Painful cases and cases of a chronic inflammatory character are the chief indications for its use.

Electric Light Baths.—These are excellent for rheumatism, and consist of a Turkish bath cabinet lined with a number of incandescent or arc lamps. Free perspiration is produced and probably accomplishes the greater part of the beneficial effect.

50 WEST FORTY-SIXTH STREET.

THE MEDICAL MAN AFLOAT.

BY H. SHERIDAN BAKETEL, M. D.,
New York.

Some time since, on the occasion of the publication of *Mercurial Medicine*,
Concord, N. H.

In the spring, when the fancy of the average young man is said to turn to thoughts of love, the fancy of the average young practitioner just out of the hospital, and the recent graduate who cannot afford the time a hospital course consumes, turns to the very serious and practical thoughts of future livelihood.

I desire to call the attention of this class of men to an opportunity which offers a "living"

from the start, and which has many advantages quite unknown in any other avenue of medicine—that of a ship's surgeon. All transatlantic and many of the coast liners sailing out of New York carry surgeons, whose business it is to guard the health of the passengers and crew.

Unfortunately, with one exception, vessels of foreign register carry medical officers of their own nationality, but with this handicap to American medical men, there are over forty berths on ships open to our graduates.

Of the transatlantic liners, the American Line, the sole line under the American flag, has four ships sailing out of New York for Southampton, and four out of Philadelphia for Liverpool, carrying American surgeons. These vessels are extremely popular with the travelling public, and offer the surgeon excellent opportunities for clinical work as well as for earning a very comfortable stipend. The Holland-American Line has four large ships running between New York and Rotterdam, which carry American medical men, although the company is distinctly Dutch.

Furthermore, American physicians are employed on these ships: Atlas Line to West Indian and Central American ports, twelve; Bermuda Line to Hamilton, one; Panama Railroad Line to Colon, four; Red D Line to Puerto Rico and Venezuela, four; the New York and Puerto Rico Line to San Juan, four; the Sloman Line to Brazil, four, and the Lamport and Holt Line to Brazil, two.

There seems to be among the medical profession a very general misconception as to the professional attainments of the surgeon on steamships. The idea is broadcast that a ship's doctor is usually a man who failed to make good in practice ashore, or whose habits are such as to disqualify him for independent medical work.

It is unfortunate that such a belief is prevalent, because, as a matter of fact, the average steamship surgeon is as well qualified as the average physician ashore, and indeed many of them are men of the highest scientific qualifications. In the first place, the number of men desiring to go to sea as surgeons is so great that steamship companies are enabled to take their pick. The doctor aboard is not the social butterfly he is generally believed. While here and there there may be found a man who devotes much time to social amenities, the majority only see the passengers at the table over which they preside, and occasionally on the promenade deck. He leads practically the same kind of life as his confrère ashore.

The larger vessels seldom carry fewer than 1,500 people on each trip, and in the busier season 2,500 would be nearer an average number. Each one of these persons can call on the surgeon at any time, day or night. His ailments are the same at sea as on shore, augmented by the troubles peculiar to the sea. If anything, he is more particular at sea than when ashore, and as a result the doctor listens to more tales of woe in one trip than he would in six months ashore.

The surgeon's duties are confined to certain lines not unlike those of the general practitioner. The bulk of his work is with the medical sick, but he gets quite a bit of surgery, from two to half a dozen obstetrical cases a month, some gynecology, oph-

rhinology, and laryngology. With so many persons depending on one medical man, it is easy to see that his labors are as varied as those of the physician in private practice. A day's work taken from the surgeon's log on a recent transatlantic trip will give a fair idea of what the doctor at sea has to do.

At three o'clock in the morning the doctor was called out of bed to see a steerage passenger in labor. The stewardess, who at one time had been a nurse in an English hospital, had allowed matters to progress considerably before sending for the surgeon. As a result, the woman was speedily delivered of a healthy nine-pound boy. The doctor had just comfortably ensconced himself on a settee for a nap until the first bugle call, when he was summoned to attend a sailor who had scalded his leg and foot while preparing to swab one of the decks. It was breakfast time before the sailor's needs had been attended to. At nine o'clock the round of visits commenced. In the forward port hospital was a steerage passenger ill with pneumonia, showing a temperature of 104° F., a steward with acute nephritis, a fireman with epididimitis, and a young boy with a septic hand, which he brought aboard. In the after hospitals, devoted to women, were various cases. A woman suffering with acute mania demanded considerable attention. A young woman with acute oophoritis, an old lady with facial neuralgia, a child with laryngitis, and another with a hard bronchial cold took up some of the surgeon's time. At 10.30 o'clock came the inspection. For an hour the captain, purser, surgeon, and chief steward thoroughly inspected the ship from stem to stern. Every part of the vessel from the first cabin to the third class, and from the saloon to the fireman's forecabin, was gone over, and matters of ventilation, cleanliness, and order were taken up, and nothing which did not meet the approbation of the officers escaped their attention. After inspection, the surgeon made his cabin calls, occasioned chiefly by seasickness. Then followed the surgery hour, where twenty-two of the third cabin passengers and members of the crew asked for medical advice. The cases were mostly of a minor nature; coughs, colds, sprains, cuts, and the like, made up the list. Many asked for an "opening medicine," with the result that black draught was liberally given by the hospital steward. The passing of sounds added to the variety of life on one steerage passenger, while another enjoyed the sensation following urethral irrigation. During the afternoon, the surgeon had an opportunity to get a two-hour nap. Then came the evening hospital calls, and at 8.30 o'clock the evening surgery hour. At this time, it was necessary to reduce a hernia and fit a truss. A bad case of varicose ulcer was treated and a couple of stitches were taken in the scalp of a pugnacious Irishman, who had decried England's greatness in the hearing of a loyal Britisher. A fireman, overcome by the heat in the stoke hole, and another with suppression of urine ended the labors of the surgeon for the night.

Such was a day's routine, and happy was the medical man when, on reaching port, he was able to land every person on the ship. Two went to the hospital, but both were "out of the woods" before the vessel again turned its prow homeward.

From this brief résumé, it will be seen that the

surgeon of the big transatlantic liner is no drone. His working hours are long, and much of his leisure time is taken up in the study and perusal of medical literature, of which he usually has a generous supply. The surgeon's library is ample, and up to date, and his medical and surgical equipment are the best.

The remuneration of the ship's surgeon depends entirely upon the size of a vessel, its destination, number of passengers, the length of the trip, and the condition of the weather. Most of the lines employing American medical officers pay the surgeon about \$720 per year, besides all living expenses. In addition, most lines allow the doctor to send bills for the treatment of all ailments not contracted aboard ship. As a result the income of the doctor at sea is far above the reputed average of physicians' income ashore, \$700.

The surgeons on the American and Holland America lines are said to average about \$2,500 and living expenses, while the average on the coastlines above mentioned is about \$1,500 and expenses. On the big ships of the White Star Line, like the Adriatic, Baltic, Cedric, and Celtic, all of which carry two medical officers, the chief surgeon collects on an average £800 per year. An added advantage is that there is not one cent's worth of expense for office rent, books, instruments, the keeping of horses or automobiles, telephone, and the innumerable necessities which take so large a part of the income of the practicing physician.

Again, sea life is less strenuous than life ashore. Night calls, and they are infrequent, can be made without stepping into the air. There are no long drives, no jealous confrères, no backbiting patients. Sea practice is as near ideal practice as can ever be found in this life.

The young medical man who loves old ocean, and is on the lookout for an opening, can do no better than to accept a ship's surgeoncy (if he can get it), with the feeling that he will not lose caste, for the medical profession has no more high-minded, earnest, and hardworking representatives than those who go down to the sea in ships.

ACUTE LYMPHATIC LEUCÆMIA CLINICALLY SUGGESTING A MYELOGENOUS ORIGIN.*

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The recent discussions of leucæmia have been most concerned with reference to the origin of the blood changes in the disease. In studying the nature of the condition, many factors obscure the opinion as to genesis. Probably the chief cause of the extreme unsettled state of opinion lies in "the imperfection and instability of the knowledge of histogenesis and interrelations of the different forms of leucocytes, in diseased states even more than in health. Our knowledge is still defective and considerable confusion has arisen from the multiplicity

* Read before the New York Pathological Society May 22, 1907.

of names given to like cells and a like name to dissimilar cells" (11). Whereas the blood picture at present unquestionably is of most diagnostic import, yet the clinical features are at times too striking to be ignored. Of late it has become a woeful habit of leading clinicians in their writings to rely solely upon microscopical findings, not only in their diagnosis, but in their deductions of aetiology. It is not the purpose of this paper to deprecate the value of the laboratory, but to beg for a proper consideration of the clinical symptoms.

At present there are two schools of diverse opinion regarding the origin of the leucocytes, typical of the disease and in consequence regarding the true nature of the disease. First, that represented by Ehrlich (2) and his followers, especially Lazarus (21), Pincus (22), etc.; second, that championed by Pappenheim (23), Grawitz (24), Moschcowitz and Wolff (5, 6, 7).

Ehrlich and his followers believe that there are two forms of leucæmia, totally distinct in origin: (a) Lymphatic, due to primary disease of the lymph glands; (b) myelogenous, due to primary disease of the bone marrow. They believe that the lymphocytes of the first form and the myelocytes of the other form are totally distinct, and that it is not possible for the cells nor the disease of one form to be changed into those of the other. The second school opposed to that of Ehrlich considers the bone marrow as the birthplace, pathologically, of all cases of leucæmia, lymphatic and myelogenous. The question of granular myelocytes and nongranular large lymphocytes has been extensively discussed by Kelly (8), Reed (9), Emerson (10), Brownrigg (11), Fowler (12), and others. Numerous cases of lymphatic leucæmia, with slight or no change in the lymph glands, have been reported.

The case under consideration can be added to this class, and possibly may give additional weight to the preponderance of opinion that the disease is single in origin. Unfortunately in this case a post mortem examination was not allowed, and hence the changes in the bone marrow could only be inferred by clinical deduction; could the post mortem examination have been done, possibly Neumann's opinion that the bone marrow in all cases is primarily involved would hold good here.

Case. The opportunity of studying this case was afforded in the medical service of the Washington Heights Hospital. R. E. L., aged thirty years; male; white; United States credit man; married. He was admitted March 20, 1907, died March 31, 1907.

Clinical diagnosis: Acute lymphatic leucæmia.

The patient was brought in by ambulance complaining of "weakness and nose bleed." His family history was negative; father, aged fifty-six; mother, aged fifty-two; six brothers and two sisters alive and well.

Personal history: He was born in New York and always resided here, with the exception of eleven years spent in Ohio. He stated that his business was a very severe tax upon his nervous system. His habits were not good. He was always indoors and had no exercise. Though he smoked moderately, he averaged one glass of whiskey a day, and used to drink heavily. His meals and sleep were regular.

Previous illnesses: As a child he had measles, mumps, and whooping cough. Otherwise he denied all diseases, with the exception of malaria, which he had fifteen years ago while living in Ohio, but admitted gonorrhœa and chronic syphilis. For the past six

months he had been suffering from general debility.

Physical examination: For two months the patient had not left bed. He was very weak, his skin was very pale, he had had a recent epistaxis, and his bowels were constipated. He had dyspnoea and palpitation. His bowels were inclined to constipation, his stools had been of normal consistency. His appetite was very fair. The weakness became so marked that on March 14th a physician was consulted. On March 15th he was lost by epistaxis eight ounces of blood; his nose was unplugged. During the next twenty-four hours he had frequent recurring attacks of epistaxis, during each

attack he lost from one to two ounces of blood. About this time he had noticed dark patches on the thighs and one foot; these were evidently subcutaneous hæmorrhages. On March 19th he vomited about three ounces of a grayish brown fluid. On March 20th, at 4 a. m., patient had a slight hæmorrhage from the nose, and at 8 a. m. a very severe nasal hæmorrhage. When first seen by the ambulance surgeon the patient was very restless, and when placed in the erect position he fainted. On this day he was brought to the hospital.

Physical examination on March 21, 1907: The patient was fairly well nourished. His musculature was flabby. He appeared weak, his skin was sallow, eyes protruding, scleræ of a pearly hue, pupils dilated, conjunctivæ blanched. The mucosæ were very pale, there were slight hæmorrhages from the gums, which were covered with decomposing blood, and the tongue was heavily coated. The nose showed blood clots from a recent hæmorrhage. Of the glands of the neck only one was palpable, and this belonged to the upper part of the posterior chain on the right side, was about the size of a large pea, and of firm consistency. The search for all other superficial lymph glands was negative. The tonsils were not enlarged, the thyroid gland appeared normal. There were several small subcutaneous ecchymotic areas on the upper part of the right arm, also one on the back of the left hand; these were of recent occurrence. Four or five dark spots on the legs appeared like old ruptured purpuric vesicles. The heart was not enlarged, there was a blowing systolic murmur heard at the apex. The vessel walls showed no sclerosis, the pulse was 84, regular, and easily compressible, and of 130 mm. tension. The lungs showed nothing abnormal. Neither the liver nor spleen were palpable. Both patellar reflexes were markedly exaggerated. There was moderate ankle clonus. Perception of heat and cold were not very keen. On admission his temperature was 100.4° F., the respirations 22.

On the day of admission, March 20th, the blood examination showed: White blood cells, 120,000; red blood cells, 1,500,000; hæmoglobin, 15 per cent.; index, 0.5. The differential leucocyte count showed: Polymorphonuclear leucocytes, 9 per cent.; large lymphocytes, 78 per cent.; small lymphocytes, 9 per cent.; transitional leucocytes, 3 per cent.; myelocytes, 1 per cent. Quite marked poikilocytosis, no nucleated red cells.

March 21st: On this day patient was placed upon arsenic and iron, which medication was maintained throughout, and on a milk diet. The patient spoke of how well he felt and only by persuasion could be kept in bed. The temperature, normal until 6 p. m., when it reached 100° F. (rectal). Blood examination: No actual count made. The differential count showed: Polymorphonuclear leucocytes, 6 per cent.; large lymphocytes, 78.5 per cent.; small lymphocytes, 14 per cent.; transitional leucocytes, 1.5 per cent.; no eosinophiles nor myelocytes.

March 22nd: Patient complained of hunger and his diet was increased. The temperature, normal all day; the pulse had ranged during the past two days from

70 to 88, respirations from 20 to 24. The urine had shown amber color, alkaline reaction, specific gravity was 1.022, and a trace of albumen, triple and amorphous phosphates, and a few epithelium cells. Blood examination was practically the same as the day previous. In a fresh drop the red cells quickly massed together; this could even be distinguished with the unaided eye by the mottled appearance of the blood when spread out upon a slide. The fibrin formation was very rapid, and the individual strands were very coarse.

March 23rd: The temperature, pulse, and respirations were normal, there were no new evidences of hæmorrhage, neither the spleen nor any lymphatic glands, with the exception of the one in the right cervical chain, were palpable. The patient's pallor was somewhat accentuated.

March 24th: Patient complained of hunger in spite of a liberal diet. Blood examination: White blood cells, 71,875; red blood cells, 1,720,000; hæmoglobin, 15 per cent. The differential leucocyte count was: Polymorphonuclear leucocytes, 15.3 per cent.; large lymphocytes, 68.4 per cent.; small lymphocytes, 8 per cent.; transitional leucocytes, 8 per cent.; myelocytes, 0.3 per cent. No nucleated red cells were seen, poikilocytosis was slightly less marked. There was degeneration of the nuclei and cytoplasm of the small and large lymphocytes.

March 25th: Marked constipation. The urine was yellow, slightly cloudy, acid, gravity 1.015, no albumin, no sugar, large amount of indican, urea $\frac{1}{2}$ per cent., hyalin and granular casts, amorphous urates, bacteria, polynuclear, and quite a few large lymphocytes.

March 26th: The pulse, temperature, and respirations were normal. The patient was apparently comfortable.

March 27th: The gums bled slightly. The patient complains of a throbbing in the head, otherwise no developments; he felt drowsy and slept the greater part of the day.

March 28th: On this day, at six a. m., the patient's temperature was 101.2° F.; pulse, 122; respirations, 20. During the day his temperature ranged from 100.2° to 101.8° F. at six p. m. This was the first time since admission that the patient has shown any temperature above normal. He reported feeling sleepy, was very nervous, and complained of extreme soreness of the gums, from which there were slight hæmorrhages. At this time he was passing from 30 to 40 ounces of urine in twenty-four hours. His appetite was good. Blood examination: White blood cells, 25,100; hæmoglobin, 20 per cent. (through error the red cells were not counted this day). The differential leucocyte count was: Polymorphonuclear leucocytes, 13.5 per cent.; large lymphocytes, 75 per cent.; small lymphocytes, 4.5 per cent.; transitional leucocytes, 6 per cent.; myelocytes, 1 per cent.; polynuclear eosinophiles, 1 per cent.; large mononuclear eosinophiles, $1\frac{1}{2}$ per cent.

March 29th: The temperature ranged from 99° to 101.2° F., pulse from 108 to 120, respirations 24. Patient acted in a dazed manner, was very restless, slightly delirious at times, urinated involuntarily. He had hæmorrhages from the nose and gums. He complained of soreness in the thighs. For the first time tenderness was manifest over the femur and tibia, and the spleen was now palpable, although the enlargement was very slight. The urine was amber, slightly cloudy, flocculent precipitate, acid, gravity 1.010, no albumin, no sugar, small amount of bile pigment, 0.7 per cent. urea, no indican, uric acid crystals, squamous epithelium, polynuclear leucocytes, and large lymphocytes, a moderate number of red cells and a few granular casts. Blood examination: White blood cells, 44,000; red blood cells, 940,000; hæmoglobin, 20 per cent.

March 30th: Patient appeared to be in a much more weakened condition. He was in a constant condition

of delirium and stupor. The gums bled continuously, his face was cyanotic, and he showed tenderness over the spleen. Pressure over the femur and tibia and the splenic area would even arouse him from stupor. He showed his first signs of air hunger this day, although it was not marked. He urinated involuntarily, was slightly nauseated, and would take only a slight amount of nourishment. The temperature varied from 102° to 103.4° F., the pulse from 106 to 120, the respirations from 22 to 26.

March 31st: After a restless night, patient complained of extreme thirst, his breathing became more and more difficult, he became gradually worse, but remained conscious almost to the end. The temperature three hours before death dropped to below 94° F.

Here we had a case, the blood picture of which was that commonly called acute lymphatic leucæmia. Clinically, the only symptoms of import which were evident until shortly before death were numerous small hæmorrhages, loss of strength, constipation, and an appearance of anæmia. Daily examinations failed to elicit any enlargement of the spleen or of the lymphatic glands, save the one gland of the posterior cervical chain. The patient was under our observation eleven days. Not until the ninth day, that is, two days before death, was the spleen palpable or tender. On the next day there was soreness in the thighs, and for the first time evidence of tenderness upon pressure over the tibia and femur.

In the absence of any enlargement of the lymphatic glands and the presence of the distinct, though slight, enlargement of the spleen, the soreness in the thighs, and the tenderness over the spleen and long bones, which was manifest even in stupor, strongly suggested that the original lesion productive of the blood changes was located in the bone marrow and the spleen. Unfortunately these clinical deductions could not be corroborated by a necropsy.

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Tenderness Over the Gallbladder Region, especially if accompanied by colicky pain, usually means a pathological condition of that organ. But an inflamed retro-cæcal appendix extending high up, hydronephrosis, acute pancreatitis, and an inflammatory condition at the pyloric end of the stomach are also to be kept in mind.—*American Journal of Surgery*.

Therapeutical Notes.

The Dosage of Artificial Blood Serum.—It is the custom at the present day, after a severe hemorrhage or prolonged surgical operation, to give an injection of normal salt solution either subcutaneously or in the veins. Blanchet (*Le Médical*, May 4, 1907) calls attention to the fact that an excess of serum would be injurious, both on account of the water and the salt. He reports four cases of death (two by oedema and two by anuria) after daily injections of a large quantity of the salt solution. It is an error to think that the quantity of blood lost (which is generally exaggerated) must be equaled in quantity by the serum. He finds that 100 or 200 grammes at a time, daily, is sufficient. He prefers to use isotonic sea water.

Chlorosis in Infancy.—Marfau suggests the use of the following formula in young infants with severe forms of anaemia (*Journal des praticiens*, February 2, 1907):

R Ferri et potassii lactatis	5.0 grammes.
Syr aurantii rubri sat.	5.00 grammes.
Aque destillatæ,	100.0 grammes.

M. One or two teaspoonfuls daily.

The protoxalate of iron is preferred in this formula by Leenhardt. Under fifteen months of age, thirty centigrammes (in two doses) may be given daily, in a spoonful of coffee and cream, or in sweetened water. From fifteen months to eighteen months the dose is 40 centigrammes, for eight or ten days. No digestive troubles are produced. The diet should be nutritious, and broths, or soups, or meat juice to invigorate the child and enable it to assimilate the iron.

Treatment of an Attack of Gout.—Le Gendre (*La Médecine moderne*, March 20, 1907) states that when in the presence of an attack of gout we should not yield immediately to the demands of the patient that he shall have colchicum, because it is better to allow the uric acid to have time to settle. In checking the access too suddenly, we expose the patient to visceral manifestations, such as interstitial nephritis. Topical application may be made of sedative solutions, such as one of morphine associated with atropine, or camphor and menthol (2 parts of the former to 3 parts of the latter). Salicylic acid, or the salicylates, may be employed without danger. They facilitate elimination by transforming uric acid into salicyluric acid. Diuresis should be favored by the drinking of vegetable infusions to which sodium bicarbonate may be added. If the attack be prolonged, the extract of the seeds of colchicum may be ordered (5 to 10 grammes in twenty-four hours), or the tincture of the seeds (1 gramme, or 53 drops daily). Colchicum is a cardiovascular sedative and a chologogue; but it is also a dangerous depressant to the heart. Le Gendre has entirely abandoned colchicum in spite of the convenience of its use. He does not give colchicum in the interval between the attacks as a rule. When there is gout, or a retention of the products of urinary excretion, this remedy may be given in small doses, but it should not be prescribed frequently, nor at the time when the prodromes announce the attack impending.

Treatment of Malignant Pustule.—Barlach (*Wochenschrift für Dermatologie und Syphilis*, April 5, 1907) and *Annales thérapeutiques (Bulletin de l'École)*, following the method of Lejars, uses the thermocautery, but does not remove the pustule. He simply draws a deep gutter around the group of vesicles by successively inserting the fine cautery point deeply into the skin, and when the pustule is thus isolated, he opens it with a crucial incision. Subsequently he does not use the cautery. Then at a distance of five or ten centimetres from the pustule, he makes a second circle by injecting iodine repeatedly under the skin. He uses the ordinary tincture of iodine of the codex (12 parts of iodine dissolved in 100 parts of 90 per cent. alcohol), of which he injects a few drops at each place, using altogether a Pravaz syringeful. In severe cases, he repeats this injection on the following day. If there should be much oedema present at the time, he makes free incisions sufficiently numerous to relieve tension. Compresses of sublimate gauze are placed upon the pustule for a dressing. Occasionally, he gives injections of camphorated oil, if needed. The results of this mode of treatment are excellent. The oedema, which usually is so great, either does not appear or quickly subsides. The general condition improves rapidly, and the danger is considerably diminished. The treatment should be instituted as early as possible to get the best results.

Treatment of Diabetes.—Dieulafoy does not approve of the rigorous method of diet which excludes all starches and sugars, on account of the danger of rapid emaciation, and especially that of infection with tubercle bacilli, which always threatens the diabetic patient. He recommends that the patient shall abstain from desserts, pastry, and preserves. In preference, he allows eggs; fish without sauce; meats, broiled or roasted; herbaceous vegetables; and gluten bread. Occasionally, potatoes or peas or similar farinaceous vegetables are permitted. The gluten bread may occasionally be laid aside and toast substituted (especially crust). Beer and milk are permitted, and also coffee and tea, but saccharin should be used to sweeten the latter rather than sugar. The hygiene of the diabetic comprises the care of the skin and exercise. Baths, frictions, douches, and massages are indicated. The skin should be stimulated, but not irritated. Exercise is important in order to hasten the destruction of muscle sugar, and for this purpose he recommends walking and gymnastics. Profuse sweating and fatigue are to be avoided; because, after overexertion, diabetic coma may appear. The medication he prefers consists of three remedies: Antipyrine, arsenic, and alkalies. He gives them as follows: For one week, the patient takes 30 centigrammes of antipyrine and 20 centigrammes of sodium bicarbonate in a cachet, after each meal. During the following week, the cachets are discontinued, and after each meal is substituted a tablespoonful of a solution composed of 80 grammes of distilled water containing 3 or 4 centigrammes of sodium arsenate. These two remedies are given alternately, week after week, for several months. At the same time the patient takes, with his meals, alkaline waters, which can be taken with wine (not sweet) or without. Chalybeate waters may be given in appropriate cases.

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THE FILARIA PHILIPPINENSIS.

In 1906 Ashburn and Craig reported the discovery of a new species of filaria peculiar to the Philippine Islands (*American Journal of the Medical Sciences*, September, 1906). The same authors have had an opportunity to study four more cases of infection in Filipinos (*Philippine Journal of Science, B, Medical Sciences*, March, 1907). These studies confirm the original description of the embryos as found in the circulating blood of the human host; they are 0.32 mm. long, actively motile, and sheathed, and show no periodicity.

By experiments with *Culex fatigans* Wied, the authors have been able to demonstrate the metamorphosis of this embryo into a form capable of being inoculated into another human host. In from fourteen to fifteen days the development is so complete that the worm is found in the labium of the mosquito. The sheath of the embryo is lost in the stomach of the insect; the worm then penetrates the wall of the stomach, and reaches the thoracic muscles, where the principal part of the metamorphosis takes place. In this situation the worm increases decidedly in length and in breadth, a well marked intestinal canal appears which is divided into oesophagus and intestine, there is a well developed anus, and there is a distinct mouth. From the thoracic muscles the fully developed worms pass to the labium of the mosquito, where they are usually found in pairs, and from the tip of which they sometimes protrude. A curious circumstance concerning the development of this parasite is that the mosquito

manages to get forty or fifty times as many embryos when it bites an infected individual as it is possible to obtain by a needle prick.

NEW YORK'S MILK SUPPLY.

Only those who have actually come in contact with the milk traffic of a large city have any idea of its immensity and complexity. New York's problem, by reason of its physical configuration as well as its immense size, is much more intricate and difficult of solution than even the professed expert believes. Not only does the purely commercial problem present its many difficulties, but when to these are added the sanitary requirements so ably maintained by our Health Department, it is no wonder that absolutely ideal conditions are deemed impracticable.

The report of the specially appointed Milk Commission just made to Mayor McClellan is all the more interesting at this juncture by reason of the high standing of the commissioners and of their practical acquaintance with the situation as it exists. The keynote of the report is the recommendation of increased inspection at the sources of supply. This is as it should be. The danger of contracting tuberculous disease from milk is considered by the commission as overstated and negligible, particularly in view of special legislation now in progress. The specific recommendation of the commission is for a hundred new inspectors for the country districts. Their work would be with the producers and their mission would be the education of the farmers and the bringing about of standard and modern methods of milk production.

In the regulation of the city traffic twenty-five additional inspectors, five additional bacteriologists, and five additional chemists are recommended, and such additional clerical force as shall be found necessary. Score cards are suggested for rating the dairies, and the report says that labels showing the name of the farm and creamery from which the milk comes, should be used on cans and bottles. This of course is impracticable. Only stores in which proper sanitary conditions exist should be allowed to handle milk, the report says, and score cards are recommended for the stores as well as the farms.

An interesting and practical suggestion is the recommendation that skimmed milk may be sold. There is no reason why skimmed milk should not be sold if it is sold as such. Such milk should be plainly labelled "skimmed milk." It is urged, too, that milk stations for the distribution of pasteurized and modified milk to the poor should be provided to as great an extent as possible, and the education of poor people as to the care of milk in the home is suggested. We are glad to note that pasteurization

is not recommended as a "cure-all." That pasteurization is sometimes useful no one will deny, but that it should be advocated as a general process to render uninspected milk saleable is monstrous.

The commission advise that the Board of Health should, according to circumstances, require efficient sterilization or pasteurization of all milk which it finds unsafe for consumption as raw milk, on account of a suspicion of the presence of tuberculous or other disease in the cows or insanitary conditions at the dairy or a consistent high bacterial contamination. But in every instance milk so heated should be rapidly cooled to at least 40° F. and be put, after sterilization or pasteurization, into sterilized containers under aseptic precautions. The pasteurization of milk should be done only a few hours before its delivery to the consumer, and the container should be marked with the time and date of pasteurization and the degree and the duration of temperature employed for the purpose. The Board of Health should make frequent bacteriological examinations of all pasteurized milk, and should destroy such milk as contains more than 50,000 bacteria to the cubic centimetre. The report of the commission is an enlightened, intelligent document, and the carrying out of most of its provisions will go a long way toward making the milk supply of New York what it should be.

THE PERSISTENT OCCIPITOPOSTERIOR POSITION.

In the March number of the *Bulletin of the Lying-in Hospital of the City of New York* Dr. James A. Harrar considers this subject on the basis of 1,446 cases. He explains that by the term persistent occipitoposterior position he means a vertex presentation in which the occiput does not turn forward spontaneously and delivery is accomplished with the face to the pubes or after some obstetrical manœuvre.

There are two situations of the foetal head, says Dr. Harrar, in which an attempt at manual rotation is practicable. One of them is above the brim (though it is rarely that operative intervention is called for in that stage of labor), and the other is the middle of the pelvic canal. In other situations, with the head fixed in the brim, fixed behind the ischial spines, or bulging on the perinæum, unless the head is proportionately small, such rotation is attended with great difficulty and with danger to both the foetus and the maternal soft parts. It is most frequently on the pelvic floor that spontaneous anterior rotation of the occiput occurs, and there are rare cases in which rotation may be seen to take place when the head is quite on the perinæum and

distending the vulva. Delay at the "come-aster" means a large head with extension.

Manual rotation, whether followed by the use of the forceps or not, is usually practised in the following manner: Under light chloroform anæsthesia, the left hand (in a right occipitoposterior position) or the right hand (in a left occipitoposterior position) is passed into the vagina. While an assistant makes pressure on the fundus of the uterus and so holds the head against the hand in the vagina, flexion is secured by upward pressure on the region of the anterior fontanelle; then the occiput is pressed forward and the sinciput backward by a twisting movement of the hand, which has grasped the sides of the head. At the same time the operator's other hand pushes the anterior shoulder toward and across the median line. "The assistant continually maintains sufficient pressure on the fundus to prevent the child from slipping upward and away from the vaginal hand, and also aids the operator in pushing the anterior shoulder to the opposite side."

Dr. Harrar questions the propriety of early manual rotation, preferring to wait to see what the natural forces may accomplish. If it is attempted, however, the external assistance is of great importance. In cases in which the head is rather closely held in the pelvis, and the uterus is tightly contracted on the child, a useful manœuvre is a combination of manual and instrumental rotation. The head is rotated manually to a transverse position, then the rotation is completed with the forceps, a wide sweep of the handles being employed.

PARAGONIMIASIS.

While paragonimus infection is common in the Far East, imported cases are found in Holland, Germany, and the United States. Henry B. Ward reported two cases in 1894 (*Report of the Zoologist, Nebraska State Board of Agriculture, 1895*). Musgrave has seen seventeen cases in Manila since early in the year 1906. Of these seventeen cases, eight have come to autopsy, and Musgrave (*Philippine Journal of Science, B, Medical Sciences, March*) contributes an exhaustive study of the infection based upon this material. Eleven of the patients were between twenty-five and thirty-five years of age. The disease is more common in men than in

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Musgrave divides the cases clinically into the generalized, the thoracic, the abdominal, and the cerebral. In the generalized form the parasite is found in a great many situations simultaneously. The course may be acute or chronic. Usually the acute cases are complicated by some secondary infection, most commonly by tuberculous disease or amœbiasis. In the thoracic form the parasite is found in the lungs, the pleura, the pericardium, or the heart.

Cough and pains in the chest are the most prominent symptoms. The sputum contains the ova of the trematode in large numbers. Bronchopneumonic patches and bronchiectasis are the usual lesions. Abdominal paragonimiasis is usually much diffused, involving many of the abdominal organs. In a person coming from an endemic area with cirrhosis of the liver, prostatic hypertrophy, chronic epididymitis, lymphadenitis, or chronic appendicular inflammation of doubtful ætiology the possibility of this infection should be carefully considered. When intestinal ulcerations are present the ova will be found in the stools, and abdominal pain of a dull, aching character, with rigid abdominal walls and tenderness on pressure, will point to the true nature of the disturbance. Cerebral paragonimiasis is frequently indicated by Jacksonian epilepsy.

Paragonimus lesions may be nonsuppurating, tuberclelike, suppurating, or ulcerative. The characteristics of the lesions are their dull, bluish slate color, without evidences of pigmentation; their resemblance to necrotic abscesses, with definite walls of varying thickness which appear to be made up of layers; their contents, which resemble anchovy sauce and contain adult parasites and their ova. As a rule, there is no evidence of inflammatory reaction about the lesions. It is generally supposed that infection takes place through the gastrointestinal tract, though the lungs are more frequently affected than other organs. Musgrave is convinced that the spread of the infection is by the lymphatics, as originally pointed out by Katsurada. The worms bore their way through the intestinal wall and subsequently reach the lungs through the lymph vessels. While infection by this path is proved, infection through broken or sound skin cannot be excluded.

The diagnosis is made by finding the ova in the sputum, in the fæces, in the scrapings from ulcers, or in fluids and tissues removed at operations. The course of the disease is usually chronic. The prognosis is bad as to recovery, particularly if the patient remains in the region in which the infection is endemic, but death is usually caused by some intercurrent disease. No satisfactory means of prevention can be recommended until the life history of the parasite is worked out. There is good reason for forbidding the use of uncooked food, particularly vegetables, fish, and shell fish, and unboiled water. The sputum, fæces, and discharges from skin ulcerations of infected individuals should be burned. The destruction of as many lower animal hosts as may be discovered may assist in eliminating the disease. In one of the cases observed the cough disappeared and the general condition of the patient improved considerably under large doses of potassium iodide.

EXPRESSION OF MILK FROM THE BREAST.

In our issue for June 1st, under the heading of A Remarkable Mammary Infection, we commented on a case reported in *Lyon médical* for April 21st by Plauchu and Rendu. That case proved fatal. A member of our staff has since called our attention to an article published in a previous number of the same journal (for March 31st) by Trillat and Latarjet, who report two cases of puerperal mastitis of exceptional gravity and give a résumé of Plauchu and Rendu's case. One of their own cases also was fatal. Expression had been resorted to in all three of the instances.

Trillat and Latarjet remind us of the frequency with which the *Staphylococcus pyogenes aureus* is found in abundance in the galactophorous ducts, and they seem to imply that in the three cases which form the subject of their observations, in not one of which was any uterine source of infection discovered, the gravity of the mammary trouble was due to staphylococcus infection in consequence of traumatism inflicted in the performance of expression. Their inference seems to us not at all untenable, and their observations, we think, should emphasize the necessity of the utmost gentleness in the manual expression of the contents of the milk ducts. From traumatism produced in such a simple procedure, given the presence of a pathogenic micro-organism, general infection may readily proceed, with disastrous consequences.

PUNCTURE IN CEREBROSPINAL MENINGITIS.

No curative effect, but simply the alleviation of symptoms, is alleged by Schultz, of the Posen City Hospital, to be the result of puncture of the brain in the hydrocephalic stage of epidemic cerebrospinal meningitis (*Deutsches Archiv für klinische Medizin*, lxxx, 5, 6; *Berliner klinische Wochenschrift*, May 13th). He has found that the intellect is cleared, that the appetite is improved, that the cramps disappear, and that the sleeplessness and vomiting are arrested. One would think that such a manifold improvement of serious symptoms would exercise a favorable influence on the final outcome.

NARCOLEPSY.

This curious condition has recently been investigated by Friedmann (*Deutsche Zeitschrift für Nervenheilkunde*, xxx; *Berliner klinische Wochenschrift*, May 13th). Although the attacks greatly resemble those of *petit mal*, he regards the trouble as not really of an epileptic nature. The patient knows perfectly well that he has had a paroxysm and that in the course of it he has not wholly lost consciousness. The attacks are apt to occur under certain definite circumstances. They vary in fre-

quency, and as many as a hundred or more have been observed in a single day. Many patients are able to suppress them by an exertion of the will. In but one of the cases observed by the author was the affection followed by true epilepsy, and then only after the lapse of several years. Bromine has absolutely no effect on the condition.

Special Articles.

THE CENTENNIAL OF THE COLLEGE OF PHYSICIANS AND SURGEONS.

This past week has been a memorable one in the history of the College of Physicians and Surgeons of the City of New York. One hundred years ago a charter was granted to the college, and not only in the buildings on West Fifty-ninth Street, but throughout the entire grounds of Columbia University, which the school forms, not an attachment to, but, as President Butler well said, an "integral part" of, festivities in honor of the anniversary were in progress in the early part of the week.

On Tuesday the college buildings were thrown open and the work in the various departments was subject to inspection by the alumni and their friends. Addresses by Dr. John G. Curtis and Dr. William H. Welch were given, and the splendid opportunities of the present time shown in contrast to the times when "Andy rang the gong," and the "anatomical and pathological material was preserved in ice cream freezers."

On Tuesday evening a notable gathering took place in Delmonico's. After the dinner Dr. T. M. Cheesman, president of the Alumni Association, made a welcoming address and Dr. L. Bolton Bangs announced the winner of the Alumni Association Prize. President Butler then gave an inspiring address. He said in part that "at the present time, living in an age of unexampled activity, men were apt to overlook the course that had been run and often did not stop and think of the meaning of it all. The world that the founders of the school knew was a world not only without electric lights and without illuminating gas; it was a world that did not know even the sulphur match. During the past hundred years more advance had been made in the sciences which went to make medicine what it was than in any other. Chemistry was just beginning to be; physics had only begun to learn, and the biological sciences hardly existed. The methods of cure that those who built so well for us were compelled to use were the products of their natural unaided intuitions and their native skill." He commented on the relation of the medical school with the university, which was in the minds of those early founders. Those pioneers had built wisely, and it really was a misfortune that the distinction between the bachelor of medicine and the doctor of medicine, which in Dr. Bard's day they had attempted to maintain, as it was maintained in other departments of knowledge, should have been set aside, and that the medical profession by conferring the degree of doctor of medicine on the young and the untried had allowed a degree to lapse which deprived the medical profession of more special

distinction in the university. Thin veils sometimes concealed solid facts, and he felt that perhaps the profession of the country had lost ground in dropping out a distinction which was promulgated even by the founders of this medical school. Other consequences which arose might have been gains, however. Certainly the association with a university was one of the great gains which had come about in the educational institutions of this country.

Dr. Butler dwelt upon the need of the bringing into active life of the old relation of preceptor and pupil. Personality was the greatest teaching force to-day, and anything that could bring the student into close contact with the teacher, with the living voice of the master, was to be reached for. This was one of the problems of medical instruction, and the old relation of master to pupil should be maintained at any cost.

Dr. Samuel W. Lambert, dean of the school, spoke of its future. Two special needs were emphasized—first, the need of meeting a new educational demand. This was the training of men to take their place in the ranks of leaders in the progress of municipal, State, and national medicine. Preventive medicine was the watchword of the future, as Dr. Butler had already emphasized, and the college needed the facilities to train its students in this broad and important field of sanitation. A second and even more pressing need was for a university hospital. The medical schools of this city had been "shopping" for their clinical material for at least a century, and it was to be regretted that most of the opposition to the use of patients as clinical material really came, not from the patients themselves, who rather liked it, but really from the members of the board of trustees. Public sentiment must be so educated that the notions that every ambulance surgeon was a brute and every hospital superintendent's only duty to keep down his death rate, should be eradicated. These beliefs, with the idea that patients objected to being used as clinical material by the medical student, should be overcome if the best was to be obtained in the way of teaching material.

The Reverend Dr. Aked gave a very bright and stimulating address; Dr. Darlington spoke of the work of the Health Department; and Mr. Rives, chairman of the Board of Trustees of Columbia University, made a few closing remarks.

News Items.

The Commencement Exercises of the Philadelphia School for Nurses were held on Monday, June 3rd. Diplomas were awarded to eighty-eight nurses.

The Institute for Mechanotherapy was opened at the German Hospital and Dispensary, in the city of New York, on the afternoon of Wednesday, June 12th.

The Richmond, Va., Academy of Medicine and Surgery. At a meeting of this academy held on Tuesday evening, June 11th, Dr. Douglas Vanderhoof read a paper entitled *Theory and Therapeutic Value of Opsonins*.

Gifts to Jewish Charities.—The will of Louis Josephthal, filed for probate recently, leaves \$5,000 to Mount Sinai Hospital to found a bed in his memory; \$2,500 to the Montefiore Home for Chronic Invalids; and \$1,000 to the Ethical Society.

The Clinical Society of the Elizabeth, N. J., General Hospital.—A meeting of this society will be held at the hospital, on the evening of Tuesday, June 18th. Dr. Joseph

F. Winters, of New York, will read a paper entitled *The Etiology of Rheumatism: Its Treatment and Dietetic Cure.*

Commencement of the Dental Department of Temple College. At the annual commencement exercises of the Dental Department of Temple College the degree of Doctor of Dental Surgery was conferred upon eighty-six candidates.

Pennsylvania College of Dental Surgery Commencement.

The annual commencement exercises of this college were held on Saturday, June 1st. Professor George W. Warren delivered the address. The degree of Doctor of Dental Surgery was conferred upon nearly fifty candidates.

Philadelphia Municipal Hospital Statistics:

	Received	Discharged	Died	Remaining
Internal medicine	168	114	50	76
Surgery	44	69	5	92
Other diseases	44	16	20	21

Reunion of the Spanish-American War Nurses.—The reunion of the Philadelphia Branch of the Spanish-American war nurses was held on Thursday, June 6th. Dr. Anita Newcomb McGee, who had charge of the Red Cross work during the Russo-Japanese war, was the guest of honor.

Commencement Exercises of the Samaritan Hospital Training School for Nurses were held on Wednesday evening, June 5th. Miss Elizabeth Stell, Miss Anna Burkle, Miss Ellen Currey, Miss Meeda Lehman, Miss Jessie Rowe, Miss Catherine Lewis, Mrs. Sarah Vaughn, and Miss Ida MacDonald composed the class.

Cornell University Medical College.—Colonel Gorgas, of the Isthmian Canal Commission, delivered an address to the graduating class of this college, at the ninth annual commencement on Wednesday, June 12th. His subject covered the scientific side of the eradication of malaria and yellow fever from the Canal Zone.

The Medical Society of the County of Richmond, N. Y.—The programme for a meeting of this society, held on Wednesday evening, June 12th, included a paper on Practical Points in the Diagnosis and Treatment of Diseases of the Skin, by Dr. L. Duncan Bulkley, of New York, and the exhibition of Abdominal Corsets.

Prizes Awarded at the Centennial Anniversary of the School of Medicine (College of Physicians and Surgeons) of Columbia University.—Wilbur Ward and H. W. Schulte received awards of fellowships, valued at \$500 each; A. B. Wadsworth was awarded the Alonzo Clark scholarship, valued at \$600 a year.

Foreign Personal.—Dr. I. Boas, of Berlin, the well known specialist in gastrointestinal diseases, editor of *Archiv für Verdauungs Krankheiten*, and author of works on the stomach and intestines, has been honored by an appointment of Professor in the University of Berlin. American translations of his works on the Diseases of the Intestines, and, more recently, the Diseases of the Stomach, have appeared.

The Elmira, N. Y., Academy of Medicine.—At a meeting of this academy, held on Wednesday, June 12th, the following programme was presented: Dr. R. P. Bush, Horseheads, N. Y., Care of Pregnant and Lying-in Women; Dr. S. M. Seafuse, Elmira, N. Y., Pathology of the Antrum of Highmore; reports from members attending American Medical Association meeting.

A Tribute to Dr. Albert Vander Veer, of Albany.—At a notable gathering of the friends and former pupils of Dr. Vander Veer, at a dinner, held at the Hotel Ten Eyck, on May 2nd, a loving cup was presented to Dr. Vander Veer, and there were numerous toasts in his honor. The tribute was well deserved. Not only is Dr. Vander Veer a great surgeon; he is also a good fellow.

Charitable Bequests.—The will of the late Dr. Clarence T. Gardner, of Providence, R. I., provides a bequest of \$4,000 to each the St. Joseph's Hospital and the Lying-in Hospital, to be used for establishing a free bed at each of the institutions to be known as the 'Dr. Gardner free bed.' By the will of Urias Wasserman, the Jewish Hospital in Philadelphia receives \$500 and the Jewish Foster Home and Orphan Asylum receives \$200 upon the death of the widow.

A Painful Complication.—A writer in the April number of *Lippincott's Magazine* tells the following story of Mark Twain, who once received a letter from his brother, who complained that he was afflicted with a boil and the jumping toothache at the same time, and inquired if he had ever heard of a worse combination. 'No,' wrote the sympa-

thetic 'Mark,' 'and I can imagine only one that might be worse—that would be to have inflammatory rheumatism and St. Vitus's dance at the same time!'

Pennsylvania's Pure Food Law.—Governor Stuart signed the Pure Food bill, which was passed at the recent session of the Pennsylvania State Legislature, on June 1st. The bill provides for the punishment of those who sell adulterated food or confectionery. The bill defines adulteration in the same manner that the Federal Food and Drugs Law of 1906 defines it. A retailer cannot be held liable for the sale of adulterated or misbranded goods if he can produce a guarantee, signed by a person residing within the United States, to the effect that the article is not adulterated.

The Medical Society of the County of Kings, N. Y.

The seventy-eighth meeting of the *Section in Pediatrics* will be held on Tuesday evening, June 18th, with the following programme: Infantile Scorbatus, by Dr. John Lovett Morse, Harvard Medical School; discussion by Dr. Charles Gilmore Kerley and Dr. Henry N. Read; History of a Case of Infantile Scorbatus, by Dr. E. Le F. Swan; Presentation of a Case of Ichthyosis Simplex, by Dr. George F. Little; Typhoid Fever in Infancy and Childhood, by Dr. L. C. Ager.

Scientific Society Meetings in Philadelphia for the Week Ending June 22, 1907.—*Monday, June 17th*, Northeast Branch, Philadelphia County Medical Society; Medical Society Woman's Hospital. *Tuesday, June 18th*, North Branch, Philadelphia County Medical Society. *Wednesday, June 19th*, Philadelphia County Medical Society (business meeting, open to members only); Association of Clinical Assistants of Wills Hospital; Franklin Institute. *Thursday, June 20th*, Section Meeting, Franklin Institute; Northwest Branch, Philadelphia County Medical Society.

Personal.—At the annual commencement of the Western University of Pennsylvania, held on June 7, 1907, the degree of Doctor of Science was conferred on Dr. William Seaman Bainbridge, of New York.

Dr. Frederick E. Beal, lecturer on Clinical Medicine at the New York Polyclinic Medical School and Hospital, will spend his summer vacation investigating the Bad Nauheim system, under the special direction of Professor H. Newton Heinemann, who is located there. Dr. Beal will also visit Vienna, where for over two years he was an assistant at Neusser's clinic of internal medicine.

New Hospital for the Jefferson Medical College.—The Jefferson Medical College's new hospital, a handsome fire-proof structure, located at Tenth and Sansom streets, Philadelphia, adjoining the building of the Medical College, was formally dedicated on Friday, June 7th. William Potter, Esquire, president of the board of trustees; Dr. J. Chalmers Da Costa, Professor of Surgery, and Dr. William H. Welch, Professor of Pathology in Johns Hopkins University, made addresses. There was a large audience present, including many distinguished physicians from various parts of the United States, Canada, and Europe.

Medical Department of Temple College Commencement.

—At the commencement exercises of the Temple College, held on Saturday, June 1st, the degree of Doctor of Medicine was conferred upon J. Morris Carter, Linwood S. Corson, George R. Rogers, Carlton N. Russell, and Elizabeth O. White, of Pennsylvania. The degree Graduate in Pharmacy was conferred upon Ulysses G. Rowbotham, Roy M. Sellers, and Joseph P. Spiegle, of Pennsylvania, and Frances Nicholas and Anna Pusis, of Russia. The degree of Pharmaceutical Chemist was conferred upon Rose Koss and Sara White, of Russia.

The Tri-State Medical Association of Virginia and the Carolinas.—At the annual meeting of this association, recently held at the Jamestown Exposition grounds, officers were elected as follows: President, Dr. Stuart McGuire, of Richmond; vice-presidents, Dr. Southgate Leigh, of Norfolk; Dr. C. E. Register, of Charlotte, N. C.; and Dr. C. M. Rees, of Charleston; secretary and treasurer, Dr. J. Howell May, of Waynesville, N. C. It was decided that all future meetings of the association shall be held in the third week in February. The next meeting will be held at Charlotte, N. C.

Philadelphia Medical Club.—The Philadelphia Medical Club held a well attended reception at the Bellevue-Stratford Hotel, on Friday evening, June 7th. Dr. Joseph D. Bryant, president of the American Medical Association; Dr. Herbert L. Burrell, the president-elect of the American

Medical Association; Dr. Isaac C. Gable, president of the Medical Society of the State of Pennsylvania; and Dr. Alexander Marcy, Jr., president of the New Jersey State Medical Society, were the guests of honor. Dr. H. H. Wood, of Wurzburg; Professor Gustav Killian, of Freiburg; Dr. A. K. ... of ... Dr. G. H. S. ...

The Eastern Long Island Hospital.—After a year's endeavor the association having the work in hand has completed its labors and the institution will be opened at Greenport, on Saturday, June 22, 1907, with appropriate exercises. The Misses Wood, of Greenport, have donated the use of the building and grounds, and they have also donated \$3,000 additional to be used for a bed in the hospital, to be known as the Holy Trinity Parish bed, named for the Holy Trinity Episcopal Church of Greenport. The hospital building was the mansion of the former cotton king, Daniel Sully, and was bought by the Misses Wood several years ago. John S. Templeton, of Chicago, has contributed \$1,100, and Edward M. Higgins, of Chicago, \$500. There are many smaller contributions which have been received, the total of which is nearly \$5,000.

Philadelphia Personals.—Dr. A. C. Abbott, of Philadelphia, received the honorary degree of Doctor of Science, at the annual commencement of the University of Maryland, on May 31.

Dr. Henry B. Nightingale has been appointed surgeon to the Philadelphia Charity Hospital.

Dr. James S. Boyers, of Decatur, Indiana; Dr. Homer E. Smith, of Norwich, N. Y.; Dr. H. I. Marsdin, of Somerset, Penna.; Dr. Fred. Stauffer, of Salt Lake City, Utah; Dr. O. B. Manosmith, of Lorain, Ohio; Dr. Ed. L. Miller, of Johnstown, Penna.; Dr. H. D. Walton, of Cincinnati, N. Y.; Dr. William F. Kunkle, of Williamsport, Penna.; Dr. D. C. Louchery, of Clarksburg, W. Va.; Dr. William J. Rideout, of Freeport, Ill.; Dr. R. P. Higgins, of Cortland, N. Y.; Dr. George Hawley, of Baldwinville, N. Y.; and Dr. James Jackson, of Hemet, Cal., are registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

The American Society of Tropical Medicine.—The meeting of the American Society of Tropical Medicine, which was held in the amphitheater of the Philadelphia Polyclinic Hospital, on Friday evening, June 7th, was well attended. Dr. J. H. White, of the United States Public Health and Marine Hospital Service, who so successfully conducted the prophylactic and hygienic measures at New Orleans during the yellow fever epidemic of 1905, delivered an address on the prophylaxis of tropical diseases, with special reference to yellow fever. Remarks were made in discussion by Dr. Rudolph Matas and Dr. Halsey, of New Orleans; Dr. Snow, of San Francisco; Dr. Abraham Jacobi, of New York; Dr. Milton D. Rosenau, of the United States Public Health and Marine Hospital Service; Dr. Allen J. Smith, Dr. J. J. Kinyou, and Dr. Judson Daland of Philadelphia. An interesting exhibition of specimens illustrating various tropical diseases was provided by the secretary of the society, Dr. John M. Swan.

Alumni Association of the Jefferson Medical College.—The annual banquet of the alumni association of the Jefferson Medical College was held at the Bellevue-Stratford Hotel, on Saturday evening, June 1st. About 300 members and guests were present at the dinner. Judge Sulzberger, Dr. John H. Gibbon, Professor Martin G. Brumbaugh, Rev. Arthur W. Warner, Dr. H. C. McCormick, Dr. Charles S. Barnes, Dr. P. H. Moore, and Mr. Charles Turner Sands responded to toasts. The following officers were elected: President, Dr. J. Chalmers Da Costa; vice-presidents, Dr. I. P. Stritmather, Dr. Louis Jurist, Dr. A. A. Eshner, Dr. Laurence Flick; chairman of the executive committee, Dr. P. Brooke Bland; recording secretary, Dr. Alfred Heineberg; corresponding secretary, Dr. Charles S. Barnes; treasurer, Dr. Randle C. Rosenberger. To the list of vice-presidents were added representatives from every State in the Union, those from Pennsylvania being Dr. James G. Groff, of Doylestown; Dr. Samuel L. Wolf, of Wilkes-Barre; Dr. William S. Foster, of Pittsburgh; Dr. Harry B. Casselburg, of Hazleton. Delaware is represented by Dr. Joseph M. Martin, of Lewes; and New Jersey by Dr. Daniel Strout, of Camden.

The American Surgical Trade Association held its sixth annual convention in New York, as the guests of the manu-

facturers and the Greater New York Trade Association, at the Hotel Astor, on June 12th, 13th, and 14th, at which there was an attendance representing the wholesale and retail dealers in every section of the country. Papers of various professional and commercial import were presented and discussed, among them being a private communication from Dr. Roswell Park, of Buffalo, setting forth his views with reference to the question of the physician or surgeon patenting an instrument or appliance of his invention, the doctor taking the position that while it would be in some respects highly desirable for the inventor to protect the sales privilege in order to insure a sufficiently high standard of manufacture, it would be in the main highly undesirable to do otherwise than is the custom, based upon what is understood to be the sense of the code of ethics, which permits the manufacturer, into whose hands the inventor places his idea, to patent and protect the article as he sees fit. On the other hand the doctor conceded that there is in many instances a great lack of care shown in the manufacture of important instruments by dealers, whose ambition is directed more toward financial gain than mechanical efficiency, a condition which the association is strenuously endeavoring to correct. Another paper of much interest to the general physician was one by H. E. Bown, of the Columbus Aseptic Furniture Company, setting forth some excellent reasons why the average physician should keep a sufficient supply of thoroughly aseptic furniture of an up to date character and maintain his office in a modern and generally cleanly manner, in order to be always prepared to give his patients the best service in his power. In Mr. Bown's opinion it would mean a larger and more appreciative practice for the physician to be equipped in this way, and would afford him personally a great deal more satisfaction than can possibly be felt if his general office equipment is of an indifferent character. A series of entertainments was provided by the New York Association, which included a theatre party for the ladies, an excursion to Coney Island, a beefsteak dinner, and, finally, a dinner at the Hotel Astor.

Society Meetings for the Coming Week:

MONDAY, June 11th.—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Hartford, Conn., Medical Society.

TUESDAY, June 12th.—New York Academy of Medicine (Section in Medicine); Medical Society of the County of Kings, N. Y.; Tri-Professional Medical Society of New York; Clinical Society of Elizabeth, N. J.; General Hospital; Buffalo Academy of Medicine (Section in Pathology); Ogdensburg, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine.

WEDNESDAY, June 13th.—New York Academy of Medicine (Section in Genitourinary Diseases); New York Society of Dermatology and Genitourinary Surgery; Woman's Medical Association of New York (New York Academy of Medicine); Medicolegal Society, New York; New Jersey Academy of Medicine (Jersey City); Buffalo Medical Club.

THURSDAY, June 14th.—New York Academy of Medicine; German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society.

FRIDAY, June 15th.—New York Academy of Medicine (Section in Orthopaedic Surgery); Clinical Society of the New York Postgraduate Medical School and Hospital; East Side Physicians' Association of the City of New York; New York Veterinary Society.

Infectious Diseases in New York:

For the purpose of the Department for the following statement of new cases and deaths reported for the two weeks ending June 8, 1907:

	June 8, 1907	Deaths
Scarlet fever	1	0
Smallpox	1	0
Measles	1	0
Whooping cough	12	0
Diphtheria	17	17
Tuberculosis	16	1
Total	28	18

The Health of Philadelphia.—During the week ending June 1, 1907, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Diphtheria	44	9
Scarlet fever	28	0
Whooping cough	27	0
Measles	44	2
Chickenpox	8	6
Consumption	67	1
Smallpox	29	2
Acute suppurative peritonitis	60	66
Law the Foundation of State Medicine	37	41
Diagnosis of Diseases of the Prostate	1	0
Acute suppurative peritonitis (Local, Spreading, Diffuse and General)	23	31
Law the Foundation of State Medicine	12	0
Diagnosis of Diseases of the Prostate	1	1

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 11; diarrhoea and enteritis, under two years of age, 18; puerperal fever, 2. The total deaths numbered 470, in an estimated population of 1,500,595, corresponding to an annual death rate of 16.21 in a thousand population. The total infant mortality was 110; under one year of age, 87; between one and two years of age, 23. There were 41 still births, 26 males and 15 females. The temperatures were moderate; the total precipitation was 1.02 inches; there were three thunder showers on the 27th of May.

The Mortality of Baltimore.—The report of the Health Department for the week ending June 8th, showed a total of 155 deaths, as compared with 170 the corresponding week of last year, 187 in 1905, and 159 in 1904. The annual death rate in a thousand of population was: Whole, 13.71; white, 12.59; colored, 19.64. The principal causes were: Whooping cough, 1; diphtheria, 1; consumption, 28; cancer, 14; apoplexy, 10; organic heart diseases, 17; bronchitis, 2; pneumonia, 6; diarrhoea, 4; Bright's disease, 11; congenital debility, 13; lack of care, 1; old age, 2; homicide, 1; accidents, etc., 9. The nativity of those who died was: United States, whites, 91; foreign, 28; colored, 34; unknown, 2. Eight deaths occurred at Bayview Asylum, 24 in hospitals, and 10 in other institutions. Fifteen coroner's inquests were held. The following number of cases of infectious diseases were reported, as compared with the corresponding week of last year:

	1906.	1907.	1906.	1907.
Diphtheria	22	12	Measles	29
Pseudomembranous			Mumps	3
Scarlet fever	8	1	Whooping cough	17
Typhoid fever	23	8	Chickenpox	2
			Consumption	15

Statement of Mortality of Chicago for the Week Ending June 1, 1907, compared with the preceding week and with corresponding week of 1906. Death rates computed on United States Census Bureau's figures of midyear populations—2,107,620 for 1907, 2,049,185 for 1906:

	June 1, 1907.	May 25, 1907.	June 2, 1906.
Total deaths, all causes	643	641	465
Annual death rate in 1,000	15.91	15.86	11.83
Sexes			
Males	375	376	278
Females	268	265	187
Ages			
Under 1 year of age	113	134	80
Between 1 and 5 years of age	63	65	51
Between 5 and 20 years of age	62	47	45
Between 20 and 60 years of age	285	262	205
Over 60 years of age	120	133	84
Important causes of death			
Apoplexy	11	13	9
Bright's disease	54	42	41
Bronchitis	11	17	16
Consumption	70	76	60
Cancer	21	23	26
Cardiac	8	13	10
Convulsions	12	8	6
Diphtheria	62	40	29
Heart diseases	6	2	0
Ischaemia	37	30	24
Intestinal diseases, acute	11	15	7
Measles	24	24	19
Nervous diseases	116	158	62
Pneumonia	20	11	20
Scarlet fever	12	12	4
Suicide	1	2	4
Typhoid fever	49	37	33
Violence (other than suicide)	3	3	6
Whooping cough	115	115	80
All other causes			

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

June 8, 1907.

1. The American Medical Association, Its Aims and Interests. President's Address at the Fifty-Eighth Session, By JOSEPH D. BRYANT.
2. The Relation of the Clinical Laboratory to the Practitioner of Medicine. Oration on Medicine, By JAMES B. HERRICK.
3. Acute Suppurative Peritonitis (Local, Spreading, Diffuse and General). Oration on Surgery, By WILLIAM H. WATHEN.
4. Law the Foundation of State Medicine. Oration on State Medicine, By SAMUEL G. DIXON.
5. Diagnosis of Diseases of the Prostate. By EDGAR G. BALLENGER.
6. The Diagnosis of Pyelonephritis Based on the Abnormal Retention and the Delayed Excretion of Methylene Blue, By EDWIN BEER.
7. Meningococcus Septicemia. Demonstration of the Meningococcus in the Blood Smear, By CHARLES E. SIMON.

1. President's Address.—See editorial page 1082.

2. The Relation of the Clinical Laboratory to the Practitioner of Medicine.—Herrick admonished his hearers that we should not look on the laboratory as a short cut to a diagnosis. The laboratory diagnosis is not yet of machine like accuracy. The time has not yet come, and the author expresses the hope that it will never come, when a diagnosis can be made without the exercise of brain power. Anamnesis, physical and laboratory findings are to be studied and compared and a result reached that not only gives a name to the disease, but gives us a conception of the disease as it exists in the particular individual, with all that such a comprehensive diagnosis implies in the way of prognosis and hints as to therapy.

3. Acute Suppurative Peritonitis.—Wathen observes that we should operate as in peritonitis as soon as a surgical diagnosis has been made, and should avoid purgation and opium before and after the operation. The intestines should be exposed and handled as little as possible, adhesions should not be separated, and the peritoneal cavity should not be irrigated or sponged. Drainage should be established from the bottom of the pelvis. Before closing the abdominal wound hot horse serum or saline solution should be poured into the peritoneal cavity to stimulate leucocytosis.

4. Law, the Foundation of State Medicine.—Dixon, in his oration on this subject, states, among other remarks, that so long as the medical service is made subordinate or inferior to the strictly military service in our own army, so long will repetitions of the disgraceful slaughters of Camp Alger and Chickamauga be of common occurrence in our military operations. In all matters pertaining to the health of the troops the medical staff of an army should be the authority, and in all councils of war their voice should be of equal authority with those of the combatant officers. The author speaks of the skill of the medical officers of our army making the present occupation of Cuba by our forces possible without frightful loss of life. He reminds us of the great achievement of our medical officers in Panama. The author advocates the establishment of a Department of Health, with a secretary of health at its head who should have a seat with the President's advisers, and who would make it one of his urgent duties to keep legislation of this character under close scrutiny, and to see to it that no member voted wrongly for lack of accurate information and definite explanation as to the merits of a question. The fact that medicine has become a great science and that preventive medicine is one of its most important branches imposes on the government the solemn duty

of exercise, a wise use of food, and the health of the people. But as the majority will ill.

5. The Diagnosis of Diseases of the Prostate.—Ballengier remarks that the prostate gland is without doubt the cause of the majority of obscure urinary and sexual symptoms, and should always be examined where there is any uncertainty as to the diagnosis. Among the factors which tend to perpetuate a chronic or recurrent gonorrhœa a nidus of infection or irritation in the prostate is the most frequent cause. It is in this variety of prostatic inflammation that the largest number of errors are made in the diagnosis. Palpation, pus, and proteid are the three things to rely on in reaching a conclusion as to the condition of the prostate. By palpation through the rectum, the gland, if diseased, may be found enlarged, nodular, irregular, boggy, or apparently normal. Pus in the secretion expressed from the meatus or found in the urine or fluid voided after massage, when the urethra and bladder are excluded as possible sources, is positive proof that the prostate is inflamed. Proteid in the fluid passed after massage is equally as reliable as pus in the diagnosis of prostatitis.

6. The Diagnosis of Pyelonephritis.—Boer states that there is no differential diagnostic sign between simple pyelitis and pyelonephritis. Pyuria from the upper urinary tract may be due to either of these conditions. By the use of methylene blue test it would seem that a differential diagnosis may be made. Methylene blue is deposited in the parenchymatous abscesses and may be stored in these for years. A late discharge of methylene blue, bound to the pus, is indicative of the rupture of such parenchymatous abscesses into the pelvis of the kidney, and is consequently diagnostic of pyelonephritis.

MEDICAL RECORD

June 8, 1907.

1. The American Medical Association, Its Aims and Interests. By JOSEPH D. BRYANT.
2. The Eustachian Tube, Its Anatomy and Its Movements; With a Description of the Cartilages, Muscles, Faciæ, and the Fossa of Rosenmüller. By W. SOHIER BRYANT.
3. Leprosy in the Philippine Islands and the Present Methods of Combating the Disease. By VICTOR G. HEISER.
4. A New Blood Test. By MAX EINHORN.
5. Some Effects of Spirit and Drug Taking on the Upper Air Passages. By T. D. CROTHERS.

2. The Eustachian Tube, Its Anatomy and Its Movements.—W. Sohier Bryant remarks that the physiological function of ventilating the tympanic cavity is accomplished mainly by the dilator tubæ or levator palati. The mechanism which allows the opening of the tuba auditiva is the backward pressure of this muscle on the angular process of the alar cartilage, which swings backward, upward, and inward on its superior attachment, dragging with it the floor of the tube and forming a triangular ostium. The author gives a description of the anatomy and the movements of the Eustachian tube. It opens during act of swallowing or gaping. It opens partially during phonation, in proportion to the movement backward of the velum palati, which is greatest with the letters K, T, EE, etc., and least with M and N. The act of swallowing, or an act which raises the soft palate and applies it to the posterior pharyngeal wall, is accompanied by movements of the ala tubæ in proportion to the palatal movement.

3. Leprosy in the Philippine Islands and the Present Methods of Combating the Disease.—Heiser writes that a study of the history of the war waged upon leprosy during the past few centuries shows that isolation offers the only method which has been consistently

successful in eradicating or at least greatly reducing the number of victims. Even now, at the very beginning, a study of the statistics of the Philippine Islands will show that leprosy has already decreased to the extent to which the policy has been put in practice. In the Philippines, for the year ended August 31, 1904, there were 3,623 cases; for the year ended August 31, 1905, 3,580; for the year ended June 30, 1906, 3,494; for the quarter ended September 30, 1906, 3,473; and for the quarter ended December 31, 1906, 3,225. A study of the history of leprosy in Hawaii shows that until isolation was carried out the number constantly increased. In 1866 there were 105 lepers; in 1894 there were 915; in 1903, 874; in 1905, 858; and in 1906, 828. For the twenty years preceding 1900, isolation was not very rigidly enforced, and it was not until after American occupation that the practice began to be systematically carried out; the above figures show that the disease has declined rapidly since that time. The present capacity of the Cullion Leper Colony is about 800. The actual number on the island January 1, 1907, was 546. In addition to these, 219 are segregated in the San Lazaro Hospital, Manila. The remaining are distributed throughout the various provinces as shown in a table. Undoubtedly, the simplest and easiest method of stamping out the disease and protecting the public would be to segregate all lepers at the colony. The conclusion of the Germany Leprosy Conference of 1897, and also, more recently, that of Kolle and Black, was that the initial lesion is a small ulcer in the nasal mucous membrane. If this is true, it is quite possible that many of the cases in which the source of infection is so difficult to understand may be explained upon the hypothesis that they came in contact with lepers who were not known to have the disease. Whatever may be the views of well informed persons with regard to the communicability of leprosy, and however widely eminent medical men may differ upon this question, yet the incontrovertible fact remains that every leper who is capable of giving off leprosy bacilli to the media which surrounds him is at least one centre of infection, and the utter hopelessness of successfully eradicating the disease so long as the exact mode of transmission is not conclusively proved will be apparent to all. Prophylactic medicine should not be permitted to be turned by a few sentimentalists from its march to a goal which offers the magnificent victory of the eradication of this plague from the face of the earth, and the saving of hundreds of innocent victims who are now sacrificed annually to this most loathsome disease.

4. A New Blood Test.—Einhorn has simplified the Adler blood test. He prepared an aloin paper and a benzidin paper. Aloin paper was made by saturating ordinary filter paper with a solution of aloin in seventy per cent. alcohol; the benzidin paper by moistening filter paper with a saturated solution of benzidin and glacial acetic acid, and drying it. In preparing the paper, as well as in making the test, it is of importance to avoid contact with the fingers, as a drop of perspiration causes a similar reaction. In handling the paper it is best to use an ivory tipped forceps, or protect the hand by means of a towel. A piece of benzidin paper is immersed in the solution to be examined and a few drops of hydrogen peroxide are added. The piece of paper is placed on a piece of white porcelain and is examined for the development of a blue color. In the presence of blood a green or blue color arises in a few seconds to a minute. Regarding the sensitiveness of the reaction, it is greater if we allow more time for its occurrence. In dilutions of 1 part blood to 500 parts of water a distinct reaction occurs in between thirty to sixty seconds. In dilutions of 1 to 2,000 a trace of blue

the reaction does not seem advisable, as after thirteen minutes the benzidin paper with hydrogen peroxide alone without blood will yield a blue color. For practical purposes it will be best to wait but one minute for the occurrence of the reaction. If after one minute there is no trace of blue, then the test must be considered negative. In examining for blood in stomach contents too great a sensitiveness is not important, but rather a certainty that the test will indicate only blood. The longer we wait for the reaction the more substances besides blood may cause it. Benzidin paper can be used for testing for blood in stomach contents, urine, and feces.

5. Some Effects of Spirit and Drug Taking on the Upper Air Passages.—Crothers observes that the effects of spirits and drugs on the upper air passages are very marked and common, and yet they do not attract attention. It is always a question whether these effects are due specifically to any one cause or combination of causes or are the results of general conditions, one intensifying the other; thus low vitality, sudden changes of temperature, reflex irritations, and congestions in distant parts, may all combine to produce disturbances: (1) The direct irritant action on the bronchial, pharyngeal, and nasal membranes, with thickening, anæmia, and congestion; (2) the reflex irritant action from gastritis and other disturbances and irritations to other parts; (3) organic changes and paralysis of nerve tracts, cirrhotic states of the liver, kidneys, and mucous membranes generally. In his experience of nearly thirty years in the constant study and care of spirit and drug neurotics, it is an exception to the rule to find persons who have used spirits and drugs, and do not suffer from catarrh and subacute inflammations of the throat and nose. It is always an interesting question whether these inflammatory changes preceded the spirit and drug taking as exciting and predisposing causes, or followed as a natural result. Many persons have a history of nasal and throat congestions due to direct irritation, followed by exhaustion and debility, for which spirits and narcotics have been found most agreeable remedies. Alcohol and tobacco seriously impair and finally destroy the vocal powers. These effects are due to both local and constitutional changes in the bloodvessels and nerve filaments and absorbents. Probably one of the most dangerous and seductive drugs is cocaine, which has come into very common use. The paralysis resulting from the constant use of this drug in the nasal passages extends down to the throat and larynx. The changed tone of the voice registers this inflammatory condition. The hearing is also affected, and profound anæmia of the nasal passages is often a symptom of the use of this drug. Tobacco is another irritant and narcotic to the upper air passages. Like cocaine, its effects are direct and in chronic conditions, where the system is thoroughly infected, it is an active cause of disease of these membranes. One of the worst forms in which it can be used is the cigarette, and this is due specifically to the combustion taking place in close proximity to the mouth, where all the gases and products come in immediate contact with the mucous membrane. In the case of the pipe and cigar, many of these poison products are condensed and deposited in the stem of the pipe and body of the cigar, and only a small part is carried into the mouth. Morphine and other forms of opium have no specific direct effect on the upper air passages, except that of a narcotic, and these effects are followed by anæmia and general pallor of the face and eyes. The senses are diminished and low forms of subacute inflammatory states of the membranes follow. They are thickened, and fibrinous deposits come on. The control of the voice is weakened and general conditions of exhaustion appear. Other drugs have a similar effect, only more pronounced, on the constitution.

BRITISH MEDICAL JOURNAL.

May 25, 1907.

1. Heart Disease in Relation to Pregnancy and Labor, By G. F. BLACKER.
2. Effects of Diet on the Development and Structure of the Uterus, By M. CAMPBELL.
3. A Case of Sudden Death at the Climacteric, By E. PRATT.
4. A Note on the Use of the Blunt Hook, By J. E. GODSON.
5. A Case of Extrauterine Pregnancy in which Unusually Early Rupture of the Gravid Sac in the Tube Occurred, By J. N. STARK.
6. On the Microorganism Isolated from Acute Rheumatism, and Its Relation to Other Members of the Streptococcus Group, By E. W. A. WALKER.
7. A Case of Retropharyngeal Fibroma, By N. B. ODGERS.
8. Epithelioma of the Larynx in a Young Man, By H. BARWELL.

1. Heart Disease and Pregnancy.—Blacker states that the old idea that the heart normally hypertrophies during pregnancy is not proved beyond the possibility of a doubt. It is probable that in some cases hypertrophy of the heart is the chief change which occurs, while in some there is dilatation rather than hypertrophy, and in others there is hypertrophy of the left ventricle and dilatation of the right side of the heart. It also appears certain that in some healthy women, at any rate, neither dilatation nor hypertrophy of the heart occurs during pregnancy. There are no characteristic or important changes to be met with in the pulse of pregnant women. On the whole, the evidence is in favor of the view that the blood pressure is raised above the normal. The rise takes place gradually during the second half of pregnancy, reaching its maximum at the close of the same. During the second stage of labor there is a further marked rise, with a sudden fall to below normal immediately after delivery. The normal mean is reached again by the fifth day of the puerperium. There are no important changes in the blood itself. The two special dangers of heart disease associated with pregnancy are failure of compensation and the occurrence of degenerative changes in the heart muscle with consequent cardiac failure. As a rule the compensation is sufficient and there are no symptoms. If they do arise they are the ordinary symptoms of uncompensated heart disease. Abortion is probably more frequent in cases of heart disease than in healthy women, due to failure of the systemic circulation with resultant small hæmorrhages in the soft decidua of the uterus. Sudden cardiac failure due to degeneration of the heart muscle does occur in pregnancy, but it is uncommon. Death from cardiac failure during labor is very uncommon. It may be the result of apoplexy, embolism, or heart failure, and is undoubtedly favored by the rise in the blood pressure which takes place during the second stage of labor. The heart may give out in one of three ways after the birth of the child, (a) immediate cardiac failure due to over distention of the right side of the heart with resultant paralysis; (b) failure due to accumulation of the blood in the large abdominal veins in consequence of the rapid fall in the blood pressure; and (c) cardiac failure some days after delivery, from degenerative changes in the heart muscle and failure of the heart to recover from the shock. The danger and the death rate depend mainly on the condition of the heart muscle and not so much on the nature of the valvular lesion. In bad cases of heart disease complicating pregnancy the patients should have absolute rest in bed. In many cases the correct treatment is to relieve the strain on the heart by the induction of abortion or premature labor. During labor the risk of cardiac failure must be guarded against; post partum hæmorrhage should be encouraged where there are signs of over distention of the heart, or the patient should be actually

bled. It is not right to say that a young woman who has heart disease should never marry. Cardiac failure will probably occur sooner or later, whether she becomes pregnant or not. It is true that if she marries she should not have children, and if she does have a child, she should not nurse it. Although the mortality in these cases is as high as twelve per cent., yet the majority do perfectly well.

2. Diet and Uterine Development.—Campbell has studied the effect of various diets on the development and structure of the uterus in rats. He concludes: 1. The use of a nonphysiological diet, such as exclusive flesh, rice, or porridge, induces in the great majority of cases a modification in the structure of the uterine mucous membrane. This modification consists in a diminution in the number of the large connective tissue type of cells, which appear to be important constituents in a physiologically active mucosa. 2. The structural change is most profound in animals fed from weaning on an exclusively ox flesh diet. In such animals the development of the uterus is also most interfered with. 3. These structural changes are associated with sterility. The writer suggests that the falling birth rate in England may be due to the great increase in the consumption of meat, which is almost seventeen times as great as it was in 1850, and that the food factor should be considered in dealing with this great question.

6. The Microorganism of Rheumatism.—Walker discusses the present status of our knowledge as regards the microorganismal cause of rheumatic fever, and gives the reasons, for and against our accepting the diplococcus of Poynton and Paine, the streptococcus of Beaton and himself, as the specific cause. From the clinical standpoint acute rheumatism is a disease *sui generis*, and is, therefore, doubtless due to a single definitive infective microorganism. But before this can be regarded as established the whole question must be reinvestigated *ab initio*. First, it must be shown that the microorganism can by suitable methods be obtained from a long series of cases, which must be chosen with due regard to their acuteness and their freedom from suspicion of complications; and, secondly, it must be clearly demonstrated that the organism itself is a distinct and definite variety of streptococcus.

LANCET.

May 25, 1907.

1. Abdominal Tumors Associated with Disease of the Testicle, By W. OSLER.
2. Lesions of the Trigeminal Nerve, By J. H. PARSONS.
3. Torsion of the Testis, By H. M. REYNOLDS and R. J. HOWARD.
4. On Hypopharyngoscopy, By P. H. HALD.
5. Two Cases of Pulmonary Regurgitation, By D. B. LEES and V. Z. COPE.
6. Acute and Chronic Appendicitis: Their Medical and Surgical Treatment: A Critical Essay, By ST. R. BONNET.
7. Sanitary Authorities and Sanitary Officers: A Criticism of the Present Mode of Administering the Public Health Acts in England, By J. H. GARRETT.

1. The Testicles and Abdominal Tumors.—Osler states that not infrequently the diagnosis of an obscure affection of the abdomen is determined by an examination of the testicles. The nature of a peritonitis or of an abdominal tumor may be cleared up by finding a tuberculous orchitis, or a syphilitic gumma of the testicle may disclose the nature of a growth of the liver. Two very common events in connection with malignant disease of the testicle are the influence of trauma (which in some series of cases is as high as 50 per cent.) and the very rapid generalization. Following an injury the tumor may appear in a few months; it should be borne in mind that the course may resemble an acute orchitis. The generalization is, in the majority of cases, through the lymphatics, and may take

place very early. The abdominal tumors in malignant disease of the testicle fall into two groups: (1) The tumor is a secondary involvement of the lymph glands, (2) the tumor is primary involvement of the retained testis in a monorchid or a cryptorchid.

2. Lesions of the Trigeminal Nerve.—Parsons thinks that there is good evidence to believe that ophthalmic herpes is dependent upon definite lesions in the Gasserian ganglion, which is morphologically a dorsal root ganglion. The frequency of a febrile onset is striking, and though herpes febrilis does not manifest the same accuracy of distribution, according to nerve supply that is found in herpes zoster, it is yet probable that the causal lesion should be referred to the peripheral sensory nerves and most likely to their ganglia rather than to their terminations. Herpes zoster is the outcome of an intense and concentrated attack upon certain dorsal root ganglia. Herpes febrilis and the parerptic affections of the cornea (and possibly of other parts of the body) may reasonably be regarded as a less acute, more widely diffused attack of a similar nature. In herpes zoster parts only of an individual ganglion are likely to be destroyed. In the parerptic forms we must predicate less destruction of tissue and abolition of function, but finer localization, often combined with wider diffusion, of partial derangement of tissue and disorder rather than demolition of function. Neuroparalytic keratitis is due to irritation of the distal end of the cut or diseased trigeminal nerve.

3. Torsion of the Testis.—Rigby and Howard base their remarks on a study of nine cases of torsion of the testicle, and also on a large number of cases collected from the literature. The condition may occur at any age, but is most common in young subjects. The right testis is the one affected in a slight majority of the cases. The predisposing cause of torsion of the testicle is a congenital abnormality of the attachment of the testis to the spermatic cord, with, perhaps, a voluminous condition of the tunica vaginalis. The exciting cause is not certainly known. In many cases no cause of any kind can be discovered, the condition occurring when the patient is in bed and asleep. The onset of the symptoms is always sudden, and their severity largely depends upon the tightness of the twist. There is usually severe pain in the groin, which subsides in a few days; tenderness persists for a longer period. Vomiting is an early and frequent symptom, but is not constant, nor is it persistent or distressing. The bowels react to enemata and purgatives. In some cases the general constitutional symptoms are almost absent. If the testis is undescended there is a swelling in the groin the size of a hen's egg or larger. When the testis is in the scrotum, it is swollen and the differentiation of the epididymis is impossible. The cord feels thickened, but a normal sized vas can be felt in it. In the case of the undescended testis the difficulty of diagnosis is to distinguish between torsion of the cord and strangulated hernia, and in both undescended and fully descended testis, between torsion and acute epididymo-orchitis. The result of torsion is usually atrophy of the testis affected; a much rarer condition is gangrene and sloughing of the testis. No fatal case has yet been reported, either with or without operation. Torsion of the undescended testis should be treated by removal of the organ as soon as convenient. In cases with mild symptoms the operation is not one of urgency. Cases of acute torsion in the fully descended testis which cannot be untwisted, should be treated expectantly unless the symptoms are very urgent, as recovery is possible without marked atrophy, and, if atrophy does occur, the patient is no worse off than if orchidectomy had been performed. But should suppuration appear imminent the testis should be removed at once.

LA PRESSE MEDICALE

May 1, 1907.

Intestinal Occlusion in the Foramen of Winslow. Dangers that Attend the Enlargement of the Foramen in the Space Between the Portal Vein and the Common Bile Duct. By P. DE SILVA RIO BRAN.

Intestinal Occlusion in the Foramen of Winslow.—SILVA RIO BRAN presents an excellent study of this condition, illustrated by twenty diagrams, which represent the anatomy of the parts involved. He considers, first, the distance which separates the portal vein and the common bile duct; second, the relations between the common bile duct and the hepatic artery; and, third, the collateral branches of the portal vein and of the hepatic artery at the level of the space between the portal vein and the common bile duct. The dangers of enlargement of the foramen of Winslow into this space are: (1) Injury to the portal vein; (2) injury to the hepatic artery or its right branch; (3) the hæmorrhage from the necessary section of the numerous vessels, both arteries and veins, which even when not dangerous, is always troublesome. He considers duodenal detachment to be a preferable procedure as more simple and less dangerous than enlargement of the foramen of Winslow.

May 4, 1907.

1. Pathogeny of Orthostatic Albuminuria. Its Origin Frequently Tuberculous. By ANDRÉ CHALIER.
2. The Actual Cautey. The Instrumentation. By P. DESFOSSES and ALFRED MARTINET.
3. The Gastritis in Congenital Stenosis of the Pylorus. By R. ROMME.

1. Pathogeny of Orthostatic Albuminuria.—Chalier reviews the literature on this subject from the time when the condition was first noticed by Dukes and later denominated postural albuminuria by Stirling down to the present time. He is inclined to believe that it is due to a pretuberculous inflammation of the kidneys.

2. The Actual Cautey.—Desfosses and Martinet describe and picture various instruments used from the time of Ambroise Paré down to the modern electro-cautey.

May 8, 1907.

1. Therapeutical Properties of the Finely Granular Electric Colloid Metals. By HENRI ISCOVESCO.
2. Concerning the Structure of the Nervous Cell During Its Various Functional Conditions. By A. POLICARD.

1. Therapeutical Properties of Finely Granular Electric Colloid Metals.—Iscovesco says that the finely granular electric colloid metals give the best of results in all the infectious diseases; that they can be employed in the form of intravenous injections, particularly in serious cases, or in the form of intramuscular injections. In the latter case the doses should be a little larger. That these substances should always be isotonic and stabilized, because if not stabilized, it is instantly precipitated by the serum of the blood and therefore produces no result. The injection should also be sterilized. In the majority of cases each injection is followed by a febrile reaction, but very frequently the therapeutical result can be obtained without such reaction. The initial dose for an adult is given as 5 cm., and if this produces neither the reaction nor the therapeutical result desired a larger dose on the following day is indicated. The intramuscular injection is painless, and does not give rise to local trouble.

May 11, 1907.

1. The Lumbar Injection of Stovaine. By LEON KENDIRJY.
 2. Treatment of Infectious Ulceration of the Cornea with Oxygenated Water. By J. D.
 3. The Mode of Action of Balsam of Peru in Wounds. By R. ROMME.
- 1. The Lumbar Injection of Stovaine.**—Kendirjy

states that this form of anæsthetization has won an intermediate place in surgical practice between general and local anæsthesia.

LA SEMAINE MEDICALE.

May 1, 1907.

1. Treatment of Aneurysms of the Limbs Due to Gunshot Wounds. By F. LEJARS.
2. The New Organization of the Medical Service of the German Army in the Field.

1. Treatment of Aneurysms Due to Gunshot Wounds.—Lejars deals entirely with arteriovenous aneurysms, and describes the various methods which may be employed in different cases, including extirpation of the aneurysm en masse, ligation of both artery and vein, suture of the two vessel wounds, ligation of the vein and suture of the artery, and excision of the wounded part of both the artery and the vein, and circular reunion of the severed ends of the vessels.

May 8, 1907.

- The Operative Procedure for Appendicitis, By LE BEC.
BERLINER KLINISCHE WOCHENSCHRIFT.

April 20, 1907.

1. Cancer of the Stomach and Its Surgery. By W. KAUSCH.
2. A Quick Demonstration of Tubercle Bacilli in the Urine by Animal Experiment. By A. BLOCH.
3. Does Cacao Influence the Assimilation of the Nitrogenous Substances and Fat of Food? By V. GERLACH.
4. A New Forceps. By N. BÖRMA.
5. A Case of Malignant Exophthalmic Goitre Combined with Symptoms of Pseudoleucæmia. By CARO.
6. The Manner in Which Complements are Made Inactive in Saltless Media. By H. SACHS and Y. TERUUCHI.
7. Arsenic as a Poison and as a Remedy. By TH. A. MAASS.

2. A Quick Demonstration of Tubercle Bacilli in the Urine by Animal Experiment.—Bloch alleges that a positive demonstration of tubercle bacilli may be obtained in from nine to eleven days after the injection of animals with (1) pure cultures of tubercle bacilli; (2) urinary sediment from kidneys previously supposed to be sound, with a diagnosis of renal tuberculosis on the other side established clinically and microscopically; (3) urinary sediment from patients who presented the clinical symptoms of urogenital tuberculosis, but in whom tubercle bacilli had not been found; (4) urinary sediment from patients in whom the symptoms of a urogenital tuberculosis were not marked, but who showed in the sediment occasional rods which were persistently acid and could therefore not be looked upon as tubercle bacilli. Negative evidence was obtained in cases in which injections were made of the urine from one kidney when there was a positive diagnosis of tuberculosis of the other, and from injections of smegma bacilli in pure culture floated in a salt solution and in the urinary sediment of a gonorrhœal cystitis.

3. Does Cacao Influence the Assimilation of the Nitrogenous Substances and Fat of Food?—Gerlach's experiments seem to show that the assimilation of nitrogen is decreased, and that of fat increased by the use of cacao.

5. Malignant Exophthalmic Goitre with Symptoms of Pseudoleucæmia.—Caro reports a case of this nature and states that the combination was not accidental, but that the pseudoleucæmic condition was the result of the exophthalmic goitre. The achylia gastrica, which is frequently met with in blood diseases, is likewise to be considered a sequela. He also points out the highly toxic properties of the condition present, which may produce fatal poisoning through increased resorption under hyperpyretic temperatures directly as the result of an operation. The urine of patient with exophthalmic goitre obtains through this very toxic properties

which, in small quantities, may prove fatal to guinea pigs.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT

June 22, 1907.

1. The Ætiology of Rhachitis, By ESSER.
2. Concerning the Practical Signification of the Reaction Power of Milk, By REICHE.
3. Concerning the Anatomical and the Development of the Alveolar Reticulum, By LUTHER.
4. Concerning the Operative Treatment of Femoral Hernia, By FABRICIUS.
5. The X Ray Treatment of Basedow's Disease, By FREUND.
6. Laryngitis Membranoulcerosa Fusibacillaris, By REICHE.
7. A Case of Drug Exanthem with Unusual General Symptoms, By GREGOR.
8. Artificial Silk Joint Ligaments, By LANGE.
9. The Hæmatoblasts as Producers of Alexin, By OBERHILL.
10. A Final Word in Regard to the Determination of the Coagulability of the Blood, By SCHWAB.
11. Ernst von Bergmann, By ANGERER.
12. D. J. Mendelejew.
13. Professor Paul Krabler, By UFFENHEIMER.
14. The Climate of Teneriffe and Its Indications, By PEIPERS.

1. **Ætiology of Rhachitis.**—Esser asserts that in all cases of rickets which he has examined, whether the children were born of rhachitic parents or not, there was a history of over feeding, and he is inclined to consider over feeding a very prominent factor in the production of the disease. Such chronic over feeding is easier and more common when the children are fed artificially than when nursed at the breast, and he recommends as the simplest means to prevent the disease the avoidance of over feeding by a proper regulation of the food.

4. **Operative Treatment of Femoral Hernia.**—Fabricius sutures Poupart's ligament to the inner margin of the horizontal ramus of the pubic bone, an operation sometimes difficult to perform without incision of the upper margin of the processus falciformis minor and even of the fibres of Poupart's ligament at its insertion into the tuberculum ossis pubis, but efficient in obliterating the funnel and in making as firm an attachment for Poupart's ligament as possible.

5. **The X Ray Treatment of Basedow's Disease.**—Freund reports five cases of exophthalmic goitre in which very favorable results were obtained from the use of the x rays. He alleges that in this disease the x ray meets the causal indication. It always acts favorably on the bodily weight and on the nervous symptoms while it causes the cardiac trouble, the goitre, and the exophthalmos to disappear. The soft, vascular, and compressible goitres furnish the most favorable prognosis, and the symptoms retrograde the quicker the more recent they are.

6. **Laryngitis Membranoulcerosa Fusibacillaris.**—Reiche reports a case of this nature which is of particular interest because the inflammation was exclusively localized in the laryngeal mucous membrane.

7. **Drug Exanthem with Unusual General Symptoms.**—Gregor reports a case in which two doses of chloral hydrate of two grammes each produced in a man, forty-two years of age, an extensive exanthem accompanied by high fever, hæmorrhagic bronchitis, conjunctivitis, and somnolence.

June 22, 1907.

1. The Action of Priessnitz's Application in Inflammation, By SCHADE.
2. Further Researches in Regard to the Blood Pressure and the Cardiac Hypertrophy in Persons with Aortic Sclerosis, By BITTORF.
3. Clinical and Experimental Studies in Regard to the Excretion of Agglutinin in the Urine of Typhoid Patients, By VON HÖSSLIN.

4. In Regard to the Question of the Contrary Behavior of *Widal's Reaction* in Typhoid Fever, By GENKEN.
5. The Investigation of the Heart with the Pelvis Raised. An Aid in the Diagnosis of Heart Diseases, By STERN.
6. Concerning the Nature of the Epithelial Proliferations Produced by B. Fischer with "Scharlachoele," By JORES.
7. High Degree of Eosinophilia of the Blood in a Case of Malignant Tumor of the Right Lung, By KAPPIS.
8. A Case of Dermoid Cyst with Abrasion of the Intestinal Wall by a Projecting Tooth, By KROPH.
9. Simplification of von Bylick's Instrumental Pelvic Examination, By JILIANI.
10. Concerning Digitoxin and Digalin, By KILIANI.
11. Manchots' New Procedure in the Administration of Phosphorus to Children, By POSTERNAK.
12. The Plan of an Imperial Apothecaries' Law, By SPÄT.

1. **The Action of Priessnitz's Application in Inflammation.**—Schade says that the action of Priessnitz's application, or of the reactive hyperæmia produced by it, is to increase the centrifugal lymph movement and so scatter the products of inflammation in a short time from the threatened part toward the periphery, and render them harmless by distribution in the mass of circulating blood or otherwise.

3. **Excretion of Agglutinin.**—Von Hösslin states that agglutinin, particularly that of typhoid, cannot pass through healthy kidneys. It is excreted by the kidneys, together with albumin and in about like proportions with the latter.

4. **Ehrlich's Diazo Reaction, Bacteriæmia, and Widal's Reaction in Typhoid Fever.**—Genken says that diazo reaction and bacteriæmia follow a parallel course in typhoid fever, and the diazo reaction is present in that period of the disease in which Eberth's bacillus is present in a living condition in the blood. The elimination of the bacilli from the blood, or their agglutination as it approaches completeness, brings about a decrease in the intensity of the diazo reaction or causes it to completely disappear, although the fever is maintained, and the patient is in a well marked typhoid condition, while Widal's reaction increases and sometimes becomes very marked. In cases of typhoid fever which had been treated with salol, calomel, and tannalbin, this parallelism could not be demonstrated, as a typical diazo reaction was wanting when bacteriæmia was present.

5. **Examination of the Heart with the Pelvis Raised.**—Stern suggests as an aid in the diagnosis of cardiac diseases the examination of the heart when the patient is lying on his back with the pelvis elevated. He states that in this manner a control of the results of percussion and auscultation in other positions may be obtained, that the percussion of the right margin of cardiac dulness is increased in certainty, that the diagnosis of the true acoustic character of impure systoles is in many cases facilitated, frequently rendered possible, and that the diastolic murmur of mitral stenosis complicated with insufficiency is often clearly distinguishable.

7. **High Degree of Eosinophilia of the Blood in a Case of Malignant Tumor of the Right Lung.**—Kappis's case is sufficiently described by the title. Particular interest is attached to it because of the statement of the writer that no similar case has heretofore been recognized.

8. **Dermoid Cyst with Abrasion of the Intestinal Wall by a Projecting Tooth.**—Kroph removed a dermoid cyst of the right ovary of a married woman, thirty-five years of age. A tooth projected from the tumor and had penetrated the intestine so that when the adhesions between the tumor and the intestine were broken up an opening as large as a bean was revealed through the intestinal wall.

ARCHIVES OF THE ROENTGEN RAY.

June, 1907.

1. On the Measurement of the Intensity of the Röntgen Rays. By WERTHEIM SALOMONSON.
2. Lymphadenoma and the X Rays. By J. HALL EDWARDS.
3. On the Radiotherapeutical Treatment of Diseases of the Hair. By ROBERT KIENBÖCK.

1. On the Measurement of the Intensity of the Röntgen Rays.—Salomonson divides the measurements in two classes. I. Direct methods; (1) by observation of the fluorescence produced by their impact; (2) by the phosphorescence produced by x rays; (3) by the action of the rays on photographic preparations; (4) of some chemical action produced by the rays; (5) of the ionizing action; (6) of the photoelectric action; (7) of the thermal action. II. The indirect methods; (1) of the intensity of the current passing through the focus tube; (2) of the time integral of the current passing through the focus tube; (3) of the energy absorbed by the primary circuit; (4) of the energy of the cathode rays; (5) of certain other physical constants; (6) of the penetration of the rays. The most trustworthy of these are (1) the photometric estimation of fluorescence; (2) the photographic method; (3) the ionization method; (4) the indirect methods. At the present time we have no means of measuring the energy of the Röntgen irradiation in such a way that the results have only one meaning, and cannot be explained in more than one way, nor is it at all probable that we shall ever be able to do so. Even in the case of light we are unable to give a complete expression of its energy in C. G. S. units, and with our present knowledge this would appear to be still more impossible in the case of the x rays. For practical use Kienböck's quantimeter is, in the author's opinion, the most suitable. According to Kienböck, the tint No. 1 on his scale corresponds to an exposure of thirty minutes to a standard Scheiner lamp at a distance of 30 centimetres. Tint No. 2 will correspond to $2 \times 1,515$, or about 3,000 R. S. M. K. We are thus in a position to measure the strength of the Röntgen rays, the intensity of illumination, and the exposure, by means of a photochemical process, and to express them in terms which are independent of variations of sensitiveness in the photographic plate.

ARCHIVES OF PÆDIATRICS.

May, 1907.

- The Weight of Breast Fed Infants. By J. P. CROZER GRIFFITH and J. G. GITTINGS.
2. Hydrancephalocoele and Spina Bifida. By B. K. RACHFORD.
3. Carbolic Acid Poisoning by Rectal Injection. By G. N. ACKER.
4. A Case of Measles Superimposed on Scarlatina. By P. J. EATON.
5. Acute Nonsuppurative Encephalitis in Children. By I. A. ABT.
6. A Case of Congenital Hydronephrosis. By D. J. M. MILLER and C. Y. WHITE.

1. The Weight of Breast Fed Infants.—Griffith and Gittings divide their subject into (1) the birth weight and the causes influencing it; (2) loss and gain in weight in the first two weeks of life and the influences which affect them; and (3) the question whether the initial loss is physiological. The conclusion as to the first proposition is that a greater birth weight is to be expected in the children of multiparæ than in those of primiparæ, the difference ranging from two to twelve ounces. In general, the robustness and health of the mother may affect the initial weight of the infant. As to the second proposition the minimum weight is usually reached on the third or fourth day, and the initial weight is regained by the tenth to the fourteenth day. The average loss for the first day is four ounces, for the second day two ounces. From four to five ounces are usually regained by the end of the seventh day.

Boys usually lose less than girls and regain the original weight more quickly. The average loss in the children of primiparæ is greater and the period before it is regained longer than in multiparæ. As to the third proposition, while the initial loss of weight cannot be entirely prevented, it may be lessened by giving milk from a wet nurse until the mother's secretion has been established. No artificial food should be administered during the first few days of life.

2. Hydrancephalocoele and Spina Bifida.—Rachford reports such a case which was fatal on the twenty-fifth day. The cranial tumor protruded from the occipital region, its dimensions being four by four and a half cubic centimetres. The spinous processes were separated from the sixth dorsal vertebra to the sacrum, the cord being thus exposed, and gradually being covered with an inflammatory exudate. The child lost one pound four ounces the first nine days of life, took very little food, and its temperature was usually subnormal, except when artificial heat was applied. The lower extremities became completely paralyzed, and death followed convulsive seizures of the head and extremities. The spinal cord had become a soft, degenerated mass. The cranial tumor consisted of the elongated and degenerated occipital lobes of the cerebrum, a small cerebellum, two and a half ounces of blood stained fluid, and an organized clot the size of a walnut. There were four or five supernumerary spleens, the other viscera being normal. The influence of artificial heat upon the temperature during the last few days of life was remarkable, the temperature being increased in a few hours to 107° or 108° F., and rapidly falling to 92° F., when the heat was discontinued. This was probably due to the malnutrition of the nerve centres, which caused the inhibitory centres to fail to restrain the thermogenic centres.

4. Measles Superimposed on Scarlatina.—Eaton notes in the case reported the absence of preliminary enanthema, the appearance of the rash of measles upon the scarlatinal background, the double desquamation, and the absence of complications. As to the enanthem or eruption on the mucous membrane the author remarks that from the period of infection to the time of appearance of the enanthem there are no symptoms. When this appears the patient begins to feel ill, the eruption being in discrete spots, rose red, with minute bluish white centres on the normal mucous membrane. This becomes diffused, the points gradually coalescing. It is a pathognomonic sign of measles, though the characteristic exanthem may not be apparent for several days.

5. Acute Nonsuppurative Encephalitis in Children.—Abt quotes the following as the pathological conditions in this disease: 1. Cerebrospinal meningitis of the cellular type, secondary to cerebritis. 2. General non-septic cerebritis affecting all parts of the cerebrum, but especially the motor areas of the cortex. There are perivascular round cell infiltration, dilatation of the lymph spaces, and areas of neuroglial infiltration. There are also occasional plasma cells. 3. Degeneration of many of the ganglion cells of the cortex. 4. Degeneration of fibres arising from the large pyramidal cells of the cortex. 5. Diffuse degeneration of many fibres passing through both internal capsules. 6. Inflammation of the cerebellar tissues, but with changes less extreme than in the cerebrum. 7. Degeneration of many descending fibres of the pons and medulla. 8. Degeneration of the chief descending tracts and sometimes in the ascending tracts of the cord. 9. Slight cytoplasmic degeneration of ganglion cells of the anterior horns. The conclusions as to the results of the disease are: 1. A small proportion of cases die as early as the first day, or may linger to the second or third week. 2. If this disease occurs simultaneously with an acute infectious disease death may result from either.

3. Improvement may occur in a few days, and all signs of disease be absent after six or eight weeks. Hemiparesis or epilepsy may be a resulting consequence.
4. Most of the cases with an initial flaccidity subsequently develop the spastic type of hemiplegia.

REVUE DE MEDECINE

May, 1907.

1. The Erotism of Puberty. By C. FÉRE.
2. Yaws and Syphilis as Spirillar Diseases. By De BEURMANN and GONGEROT.
3. The Diagnostic Value of the Eosinophile in Dermatology. By L. LAMS.
4. Tuberculous Articular and Visceral Rheumatism. By H. ALFENSTADT.

1. **The Erotism of Puberty.**—Féré discusses the influence of puberty in producing sexual desire towards one's immediate relatives, and the tolerance which is often extended toward such perverse desire from motives of consideration for the offender on the part of the relative thus approached. The author believes it quite possible so to discipline the reflexes that the sexual desire may be held in abeyance until it may be legitimately exercised, that is, in the married state. Continence during the period of development of the genital organs is more rational, and is followed by better consequences, from a physical standpoint, than is incontinence.

2. **Yaws and Syphilis, the Spirillar Diseases.**—De Beurmann and Gongerot affirm that yaws (*Treponema*, Ger.; *Pian*, Fr.) is very common in tropical regions, and that its pathogenic agent is a spirillum quite similar to the spirochaeta of syphilis. Conclusions from a comparative study of the respective points of the two diseases are as follows: 1. Further investigation of the clinical manifestations of yaws is desirable, the determination of the presence or absence of cutaneous lesions in addition to papilloma, also of lesions of the mucous membranes and viscera. The exact nature of the lesions must be verified by the isolation of the spirillum, and by successful inoculation of apes. 2. The bacteriological diagnosis of yaws and syphilis, based upon the morphology of the two parasites, is not possible. The only effective diagnostic measure consists in the inoculation of the spirillar lesion in apes. The initial lesions of the two diseases differ, syphilis showing induration, and yaws the muriform papilloma. Clinical resemblance long supported the idea of the identity of these two diseases. It is now known that they are quite distinct, notwithstanding the similarity of their spirilla.

3. **The Diagnostic Value of the Eosinophile in Dermatology.**—Lams understands by the term eosinophilia a condition of the blood which is characterized by an increase in the oxyphile white blood corpuscles. The dermatoses and parasitic diseases are those in which eosinophiles are found in greatest number in the blood, but they are found in many other diseases, especially during the period of convalescence. In scarlatina they continue to increase after the fourth or fifth, and begin to diminish after the third week. In vaccinia they number about 20 per cent. of the leucocytes, at the end of typhoid fever 8 or 9 per cent., at the end of acute articular rheumatism 5 to 10 per cent. They number from 8 to 15 per cent. in chronic appendicitis, and in the convalescent period of whooping cough. Their numbers vary at the beginning of tuberculosis and in leucæmia, as many as 80 per cent. having been observed in the latter. In various neoplasms they are present in small numbers, also in asthma, in leprosy, in nephritis, and in blenorhagia. In the parasitic diseases they form a point of diagnostic interest in hydatid cyst, in tænia, ankylostomiasis, trichinosis, the various intestinal worms, in filariasis, and other parasitic diseases. There is also a toxic eosinophilia which has been observed from the injection of tuberculin, from

the use of camphor, benzine, sodium salicylate, nuclein, phosphorus, picric acid, potassium iodide, mercury, etc. In syphilis the number of eosinophiles is very variable and is not regarded as a diagnostic or prognostic means of information.

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June, 1907.

5. Tuberculin Immunization in the Treatment of Human Tuberculosis. By F. L. TRUDEAU.
6. Chronic Pancreatitis and Gallstones with a Clinical Study of Various Diseases. By F. A. AVERA.
7. The Role of the Adrenal Gland in the Pathogenesis of the So Called Hysterical Affections of the Abdomen. By L. E. LA PETRA.
8. The Most Frequent Hernia in Childhood and Its Significance. By M. COLEMAN.
9. The Bacteriology of the Blood in Typhoid Fever. By W. COLEMAN and B. H. BUTTON.
10. The Influence of Iodine Preparations on the Vascular Lesions Produced by Adrenalin. By L. LOEB and M. S. FLEISHER.
11. So Called Hysterical Affections of the Abdomen. By G. P. LA ROCQUE.

1. **Tuberculin Immunization.**—Trudeau states that the specific treatment of tuberculosis by tuberculin is based on the principle of artificial immunization. Experimental work has shown that immunity may be produced in animals to a certain degree. The difficulty with artificial immunity in general is that there is little evidence that one attack will protect from another. The part played by antitoxines, antibodies, agglutinins, bacteriolysins and opsonins is as yet imperfectly understood, but it may be taken for granted that they are all factors in the attempt to protect the body against bacterial infection. If tuberculin is used by the clinical method, it is observed that infinitesimal doses, methodically increased, result in a well marked degree of toxine immunity, which is shown by increased toleration to larger doses of toxine. The two most important factors in obtaining results are the length of time over which the treatment is extended and the dose of toxine the patient can be made to tolerate. Reparative changes are necessarily produced slowly and antitoxic or antibacterial immunity is also slowly induced. Not much permanent benefit can be expected from treatment lasting only a few months, especially if a fraction of a milligramme is the highest dose reached when the treatment is discontinued.

3. **Spontaneous Glycosuria.**—Barringer and Roper give the following summary of the data which they have gathered: 1. Fifty per cent. of a group of spontaneous glycosurics showed alimentary glycosuria due to saccharin material at the end of five years, and included all the diabetics and probable diabetics. 2. Of the authors' seventeen cases of this disease reexamined between 1895 and 1906, 58 per cent. gave the sugar reaction, eight patients being attacked with diabetes. 3. In two of the authors' cases they were able to trace the phases of disturbed sugar metabolism from the first appearance of sugar to the development of possible diabetes. 4. From the experiments of an insurance company 37 per cent. of a group of spontaneous glycosurics showed alimentary glycosuria within one year of the initial discovery of sugar. The foregoing facts are explained by dividing spontaneous glycosuria cases into two types: 1. A class essentially diabetic from the beginning, in which sugar recurs and which at the end of five years has become distinctly diabetic. 2. A harm-

less class in which sugar does not recur after the first weeks and does not show glycosuria except during the first few weeks. These patients do not develop diabetes, and the glucose test enables one to distinguish the two provisional types at an early date.

4. Infantile Scurvy.—La Fetra observes that this disease has been recognized less than twenty years. It was formerly called acute rickets, but it was usually complicated with ulcerative stomatitis. Barlow gives the following as its chief features: 1. Predominance of lower limb involvement with (a) immobility, knee flexed, thigh rotated outward, pseudoparalysis, (b) excessive tenderness, (c) general swelling of the lower limbs due to subperiosteal hæmorrhage, (d) skin tense and shining, but seldom pitting and without local heat, (e) thickening of the shaft of the bone, (f) liability to fracture near the epiphysis. 2. Swelling of the gums ranging from sponginess to minute transient ecchymoses. 3. Tendency to hæmorrhage into the skin, subcutaneous tissues, mucous membranes, or viscera. 4. Definite and rapid improvement upon antiscorbutic diet. In treating this disease the cause must be removed. Devitalized food must be discontinued, and we must substitute fresh milk, fruit juice, beef juice, raw egg albumen, and purée of potato. Sterilized milk may be desirable under certain conditions, but better is fresh cows' milk which is produced under ideal hygienic conditions.

5. Fracture of Vertebrae.—Nicoll thinks there is too much tendency to look upon severe injury as necessarily fatal, and so to decline to operate. The author's recent experience with two cases of spinal fracture led him to inquire into (1) the degrees of injury to the spinal cord which may be assumed to exist with different degrees of injury to its bony envelope, and (2) the cases as they appear clinically. With regard to an operation when it seems indicated the following points are suggested: 1. Nothing is gained and time is lost by a small incision. 2. No more bone should be removed than is essential for the proper exposure of the cord and the reduction of the dislocation. 3. If the membranes are intact an aspirating needle will demonstrate the presence of blood beneath, and the membranes should not be incised needlessly. 4. The membranes should be closed, if possible, with a fine catgut or silk suture. 5. Drainage should be provided if there is oozing. A rubber tissue drain may be used for twenty-four hours. 6. Immediate external urethrotomy should be performed and continual drainage provided for the bladder.

7. Cerebrospinal Syphilis.—Spiller and Camp state that the diagnosis between cerebrospinal syphilis and multiple sclerosis is sometimes very perplexing, since they vary in their symptomatology according to the locations of the lesions. The spinal symptoms in the two diseases may be very similar. It is held by some writers that while syphilis may cause areas of disseminated sclerosis, it does not produce the same symptom complex as does true multiple sclerosis. The difficulties in diagnosis have been alleged as the cause of the comparative infrequency of multiple sclerosis in America. It is probable that many cases, especially those of the *formes frustes*, are overlooked by superficial examination, but there is also danger that much will be called multiple sclerosis that is some other disease.

10. The Influence of Iodine Preparations on the Vascular Lesions Produced by Adrenalin.—Loeb and Fleisher performed three series of experiments as follows: 1. A comparative investigation with various iodine preparations, including iodipin and potassium iodide. 2. The potassium iodide was used both subcutaneously and intravenously. 3. The various substances were used in varying quantities. 4. Bromipin was also tried in order to determine whether the effect of the iodine preparations was a specific one. 5. Potas-

sium sulphocyanide was tried to see whether it could be used as a substitute for potassium iodide. The following conclusions were reached: 1. The arterial changes produced in rabbits by the injection of adrenalin cannot be prevented by the iodine preparations. In the authors' experiments the latter produced no good results. 2. If large doses of iodine preparations were used, the arterial changes from adrenalin were more marked than when adrenalin was used alone. Iodipin probably acts less strongly than iodide of potash. 3. Injections of potassium sulphocyanide in moderate doses did not increase the arterial lesions from adrenalin; on the other hand, it seemed to have a preventive influence upon the adrenalin action. The experiments were not extensive enough to warrant a positive conclusion upon this point. 4. Iodipin has no advantage over bromipin in preventing the lesions from adrenalin, and in none of the authors' experiments were the lesions less marked than when adrenalin was used alone.

Proceedings of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-second Annual Meeting, held in Washington, on Tuesday, Wednesday, and Thursday,

May 7, 8, and 9, 1907.

The President, Dr. FRANCIS P. KINNICUTT, of New York, in the Chair.

(Continued from page 1005.)

THE OPSONINS IN MEDICINE.

A Review of the Experimental Basis of the Opsonic Phenomenon.—In this paper Dr. E. L. OPIE, of New York, said that the blood serum was necessary in a certain sense for phagocytosis, and, in the absence of opsonins, phagocytosis was ineffectual. The majority of bacteria were susceptible to opsonins. Some bacilli, however, were subject to phagocytosis just as well in an indifferent medium, such as salt solution. Saprophytes required blood serum in order to undergo phagocytosis. Virulent bacteria resisted phagocytosis unless an immune serum was present. There was a definite progress in the phenomenon of phagocytosis on the injection of bacteria; first, a lessened and later an increased phagocytosis. Diminution of the opsonic power of the serum antedated infection, and was its cause. That each bacterium formed a specific opsonin had been disputed. A fatal dose of a microorganism, such as *Staphylococcus aureus*, when injected into the peritoneal cavity of an animal, produced a certain amount of fluid, which would be found to have lost its power to opsonize the *Staphylococcus aureus* and other bacteria. This was not due to the antagonistic action of the fluid, because if it was mixed with blood serum the opsonic power of the serum was increased. The fluid produced by a sterile inflammation of the peritoneal cavity had the power of opsonizing *Staphylococcus aureus*. If, however, the fluid was purulent, it had no power to produce phagocytosis. The presence or absence of opsonins was no accurate measure of infection. In the normal progress of an inflammatory reaction from serum to pus the opsonic power of the fluid was lost.

The Opsonins in Tuberculosis.—Dr. EDWARD R. BALDWIN, of Saranac Lake, N. Y., said that it was impossible to distinguish between the opsonic and the agglutinative functions of the blood serum. He had not acquired a technique that would prove the specificity of opsonins. The opsonic index was no guide to the administration of tuberculin in pulmonary cases.

The Opsonic Index in Certain Acute Infectious Diseases.—Dr. LUDVIG HEKTOEN, of Chicago, said that in pneumonia the opsonic index for the pneumococcus was

below the normal before and above the normal after the crisis. In fatal cases it remained low after the crisis. The streptococcus opsonic index in normal adults was low, with individual variations. In beginning scarlet fever it was below normal; as the acute symptoms subsided, the opsonic index increased. It returned to normal soon after, and remained normal during convalescence. In case there was a new infection, the opsonic index fell again, and rose as improvement occurred. Scarlet fever patients were susceptible to the action of the streptococcus. The opsonic index of scarlet fever patients to the pneumococcus, the staphylococcus, and the *Bacillus pseudodiphtheria* was normal. The opsonic index to the streptococcus in measles and pneumonia was normal. In diphtheria the opsonic index to the diphtheria bacillus was below normal at the beginning and above normal later. Anti-diphtheria serum had no influence on the opsonic index in normal persons. The streptococcus index in diphtheria was fluctuating and indicated some streptococcus infection. In cases of otitis media, in which the *Bacillus pseudodiphtheria* was found in the pus, the opsonic index was low during the discharge, but increased as the discharge lessened. In typhoid fever and paratyphoid fever there was a true opsonic stimulation to phagocytosis. The opsonic power was specific, both for the *Bacillus typhosus* and the *Bacillus paratyphosus*, i. e., each bacillus absorbed the opsonin peculiar to itself. The typhoid and paratyphoid opsonins were distinct from the agglutinins. A high opsonic index was marked at the time of regression of the symptoms. If there was a relapse the opsonic index fell. A high opsonic index during convalescence was of relatively brief duration. Hektoen was of the opinion that the opsonins were specific, and that the opsonic index had a diagnostic and a prognostic significance.

A Summary of the Studies on Opsonins Carried Out at the Rockefeller Institute.—Dr. E. R. SCHORER, of New York, spoke of the opsonic index in cases of erysipelas and its relation to treatment with killed streptococci. The normal opsonic index was subject to considerable variation, as shown by using the blood from the five fingers of the same hand. The limits of error lay between 0.5 and 1.7. Pooled serum was essential to obviate this error. The author had not been able to demonstrate any relation between the clinical phenomena of the disease and the opsonic index. In a composite chart it had been shown that the opsonic index was below normal at the beginning of the disease, and that it rose for three days, and then during the period of improvement fell as recovery took place. At the time of desquamation the opsonic index was high as a rule. Erysipelas did not present a favorable condition for treatment with bacterial vaccines, because it was a general infection. With a small dose, say, 25,000,000 streptococci, there was a rise in the opsonic index for about a week; with a larger dose, say, 50,000,000, there was first a fall of the opsonic index, and then a fluctuation. Dr. Schorer compared the results of treatment with bacterial vaccines, with antistreptococcus serum, and with local applications. The duration of the disease when treated with bacterial vaccines was about equal to its duration when treated with antistreptococcus serum and about two days shorter than when treated with local methods. He had found that there was no relation between the temperature, the other symptoms, and the opsonic index. He had found that little in the way of indication in the individual case could be obtained as to the progress of the disease by the observation of the opsonic index.

A Summary of the Studies on Opsonins Carried Out at the Johns Hopkins Hospital.—Dr. J. F. HARKER and Dr. RUFUS I. COLE, of Baltimore, said that in studying the opsonic immunity of the staphylococcus

no opsonin could be obtained by the action of that organism. The opsonic power of the rabbit immunized with staphylococcus was destroyed by heat. The authors confirmed the statement that the opsonins were specific and were not destroyed by heat. In fifteen cases of gonorrheal arthritis they had got the impression that treatment with injections of gonococcus gave better results than the ordinary treatment applied to a group of similar cases. In cases of joint, bone, and glandular tuberculosis treated with tuberculin R., the impression was that the course of the disease was distinctly influenced by the vaccine; the patients did very well. They could not form a judgment of the value of the treatment in cases of acute infectious disease. They considered that the opsonic index was not a satisfactory guide to the administration of bacterial vaccines. Negative phases, they believe, had no de-

A Summary of the Studies on Opsonins Carried Out Under the Auspices of the Commission for the Investigation of Respiratory Diseases of the New York Board of Health.—Dr. HERMAN M. BIGGS, Dr. WILLIAM H. PARK, and Dr. NATHANIEL B. POTTER, of New York, were of the opinion that there was a considerable degree of specificity of the normal opsonins. Among the difficulties of applying the method of Wright and Douglass for the determination of the opsonic index were the difficulty of counting the bacilli, the variability of stock cultures, and the difficulty in getting a pure culture of the organism with which the patient was infected. The determination of the opsonic index every two or three days gave erroneous information. As it was impossible to get the opsonic index on the day of treatment, careful observation of the clinical conditions was as satisfactory a guide for the administration of bacterial vaccines as the opsonic index. The variation of the normal opsonic index was quite large. The cases that received most benefit from the treatment by bacterial vaccines were those of repeated boils and staphylococcus abscesses. Cases of frontal and ethmoidal sinusitis at first received benefit, but later relapsed. In eight cases of gonorrheal erythritus treated by bacterial vaccines there was no benefit, nor was any harm done. Cases of chronic sinuses, due to multiple infection, received no benefit. The treatment of disease by bacterial vaccines was, in the opinion of the authors, by no means revolutionary.

Dr. POTTER said that the method of estimating the opsonic index was open to many errors. The oscillation of the opsonic index was great. He had found that there was no difference in the opsonic index dependent upon the locality from which the blood was drawn. Squeezing of the part made no difference. The source from which the corpuscles were obtained was very important—whether they came from a normal or a diseased individual. The patient's leucocytes could not consume as many individual organisms as the leucocytes of normal individuals could. In a case of chronic acne treated by the x rays there had been a great rise in phagocytic activity on improvement. There was a liability to error in making the bacterial emulsion. There was a liability to error in counting the slides of 9.8 per cent. on the average, with a maximum error of 34 per cent. In general, the impression made upon the speaker by the opsonic work was that there was a promising future for the treatment of disease by bacterial vaccines.

Dr. CHARLES E. NORTH, of New York, exhibited a series of charts illustrating the variations in the opsonic index obtained in ten different laboratories. Although the same serum and the same culture were used in each case, the charts showed great variation.

Dr. T. MORGAN ROTCH, of Boston, said that in the cases in which his assistants had studied the opsonic index spinal puncture, the administration of antitox-

ines, the inoculation of specific bacteria, and the nature of the infection, whether it was acute or subacute, had all affected the opsonic index.

Dr. L. F. BARKER, of Baltimore, said that the method of determination of the opsonic index did not yet give comparable results, and was, therefore, insufficient. He thought that the method had suffered from too much exploitation at the beginning. We were undoubtedly dealing with one form of immunity, and he, therefore, feared for the pessimism that would arise on account of the variability of the reaction. We should separate the determination of the opsonic index from the therapeutic use of bacterial vaccines, and should not criticise both of these alike. The most important feature of the entire subject was that it had attracted the attention of clinicians to the work on immunity.

Dr. G. W. ROSS, of Toronto, was unequivocally in favor of the methods which Wright had advanced. The technique was very difficult, however, and required the utmost patience and skill. In the majority of cases the opsonic power was low during infection and rose during improvement. Furthermore, cure of the infection was, in a majority of cases, associated with increase of opsonic power. There was a possibility of error of at least ten per cent. In chronic infections there was usually a low opsonic power, which increased as the condition improved. The treatment was of distinct value in cases of chronic tuberculosis, empyema, furunculosis, sloughing abdominal wounds, etc. It was undoubtedly a fact that vaccines produced other substances than opsonins, and the speaker would welcome any method of determining the effects of treatment with bacterial vaccines which would lessen the labor entailed by the determination of the opsonic index. At present, however, we were dependent upon the opsonic index for the indications for the treatment by these substances, and until some shorter method was discovered he was quite willing to give the necessary time to its determination.

Dr. G. D. WEBB, of Colorado Springs, confirmed the statements of Dr. Ross.

Dr. E. L. OPIE, of New York, said that the method of determining the opsonic index marked a new era in the study of phagocytosis. It proved that the blood serum was necessary for phagocytosis. Indecision in the application of the method was quite natural.

Dr. WILLIAM H. PARK, of New York, said that he thought Wright had underestimated the power of Nature in the cure of disease. He referred to two cases of acne which did well under treatment with bacterial vaccines, but he reminded his hearers that some cases of acne got well under ordinary treatment.

Dr. NATHANIEL B. POTTER, of New York, said that there was promise of good results in treatment with bacterial vaccines. He referred to the work of Trudeau with tuberculin.

Dr. CHARLES E. NORTH, of New York, said that the limits of variation in the estimation of the opsonic index were 200 per cent. and 25 per cent., with an average of about 50 per cent. The investigations conducted in American laboratories were of no value in relation to clinical conditions.

(To be continued.)

Book Notices.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia, Assisted by H. R. M. Landis, M. D., Assistant Physician to the Out Patient Department

of the Jefferson Medical College Hospital. Philadelphia and New York: Lea Brothers & Co.

This excellent review is now in the ninth year of its publication. Four numbers are issued annually. The first number for the current year contains 272 pages of text and a full index. The quality of the matter is of the highest degree of excellence.

Wellcome's Photographic Exposure Record and Diary. United States Edition. London, New York, Montreal, Sydney, and Cape Town: Burroughs, Wellcome, & Co., 1907. Pp. 261.

Photography has come to be so important in medical illustration and teaching that all possible aids in facilitating the art are valuable. This little pocket book contains much information that is valuable, and some particularly so because seldom obtained from the regular textbooks. It includes photographic tables, explanations, a short treatise upon the various processes of printing and development (unfortunately giving undue prominence to the fallacious system of Mr. Alfred Watkins) and exposure record blanks that should be of decided value to the methodical photographer.

Undoubtedly the book has its greatest merit in its exhaustive treatise upon that most important of photographic subjects, exposure. This is by far the most complete and lucid of any known to the writer. Together with the exposure meter appended, it should make the book an exceptionally useful one to those employing photography.

Du Microbe de la fièvre typhoïde (iléo-typhus) et de la théorie ternaire de Pettenkofer. Par P. I. KOUTASSOW. Recherches microbiologiques, épidémiologiques, et cliniques. Avec microphotographies de microbe de la fièvre typhoïde à différentes périodes de développement. Moscou: I. N. Kuschnerew & Co., 1906. Pp. 45.

The author states that in microscopical examinations of the blood and internal organs of men and animals dead of typhoid fever, there may be found a number of protoplasmic corpuscles as large as white blood corpuscles or larger, and that these will warrant the diagnosis of the disease in its first stage. He considers that the microbe of typhoid fever is an organism as complicated in its morphology as that of paludism, and he describes the methods employed to obtain the various phases of that organism, also the appearances they present. The monograph is illustrated by two plates. The author's experiments were made in Moscow, and his results must be investigated by further experiment.

Les Autoplasties. Lèvres, joues, oreilles, tronc, membres. Par CH. NÉLATON, agrégé à la faculté de médecine, chirurgien de l'hôpital Boucicaut, et L. OMBREDANNE, ancien prosecteur de la faculté, chirurgien des hôpitaux. Avec 291 figures dans le texte. Paris: G. Steinheil, 1907. Pp. 193.

In this volume on the plastic surgery of the lips, cheeks, ears, trunk, and limbs, more than half the book is devoted to descriptions of the many operations devised to remedy lesions of the upper or lower lip, a division that seems somewhat disproportionate when these parts are compared with the rest of the body. The authors have described the more important plastic operations, and in general have indicated their choice of an operation. The work is generously illustrated.

Kokkogene Hautleiden (Furunkel, Erysipel, etc.). Von Dr. S. JESSNER, Königsberg i. Pr. Würzburg: A. Stuber, 1907. Pp. 102.

Dr. Jessner is the author of a collection of small books, called Dermatological Lectures for Practising

- TURNER, L. A., Acting Assistant Surgeon. Granted leave of absence for fourteen days, from June 4, 1907.
- VOGEL, C. W., Passed Assistant Surgeon. Granted leave of absence for seven days, from April 1, 1907, under paragraph 191 of the Service Regulations.
- WARD, W. K., Assistant Surgeon. Granted leave of absence for one month, from June 5, 1907.
- WASDIN, EUGENE, Surgeon. Granted leave of absence for ten days, from June 9, 1907.
- WOODWARD, A. M., Surgeon. Granted leave of absence for one month and four days, beginning June 27, 1907.

Army Intelligence:

Official List of Changes in the Station and Duties of Officers serving in the Medical Department of the United States Army, for the week ending June 8, 1907:

- BILLINGSLEA, C. C., Captain and Assistant Surgeon. Advanced to the rank of captain, June 2, 1907.
- DUNCAN, L. C., Captain and Assistant Surgeon. Advanced to the rank of captain, May 10, 1907.
- FARR, C. W., Captain and Assistant Surgeon. Granted two months' leave of absence, to take effect upon the expiration of his present sick leave.
- FRICK, EUCLID B., Major and Surgeon. Ordered to accompany 3rd Battalion, Engineers, from Camp Columbia, Cuba, to Fort Leavenworth, Kas. Upon completion of this duty, ordered to return to station in Cuba.
- KELLER, W. L., Captain and Assistant Surgeon. Advanced to the rank of captain, June 2, 1907.
- KIEFFER, C. F., Major and Surgeon. Ordered to proceed to Washington Barracks, D. C., and report in person to the commanding officer, General Hospital, at that post, for observation and treatment.
- LOVING, R. C., First Lieutenant and Assistant Surgeon. Granted thirty days' leave of absence.
- SCOTT, GEORGE H., First Lieutenant and Assistant Surgeon. Detailed as a member of the Army Retiring Board, Denver, Colo., vice First Lieutenant S. E. Lambert, assistant surgeon, hereby relieved.
- WYETH, M. C., Major and Surgeon. Ordered to proceed to the Philippine Islands for duty on the first available transport sailing from San Francisco, Cal., after his discharge from treatment at the Army and Navy General Hospital, Hot Springs, Ark.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending June 8, 1907:

- BAKER, M. C., Acting Assistant Surgeon. Detached from the Naval Hospital, Norfolk, Va., and ordered to the Franklin.
- CAMPBELL, F. E., Passed Assistant Surgeon. Detached from the *Constellation* and ordered to the *Washington*.
- HAYDEN, R., Assistant Surgeon. Detached from the Naval Medical School Hospital, Washington, D. C., and ordered to the Naval Hospital, Annapolis, Md.
- LONGBAUGH, R. I., Assistant Surgeon. Detached from the Naval Hospital, Annapolis, Md., and ordered to the Naval Hospital, Mare Island, Cal.
- SHORT, W. H., Assistant Surgeon. Detached from the Naval Hospital, New York, N. Y., and ordered to the Naval Hospital, Philadelphia, Pa.
- SMITH, H. W., Assistant Surgeon. Ordered to duty at the Naval Medical School Hospital, Washington, D. C.

Births, Marriages, and Deaths.

Married.

ADAMS—FOSTER.—In Chestnut Hill, Boston, Massachusetts, on Tuesday, June 4th, Dr. Zabdiel Boylston Adams and Miss Helen Foster.

BAKER—McPHERSON.—In Philadelphia, on Wednesday, June 5th, Dr. Herbert H. Baker and Miss Elizabeth McPherson.

BLAKELY—BURRAGE.—In Brookline, Massachusetts, on Tuesday, June 4th, Dr. David Newton Blakely and Miss Amy Burrage.

BULLOCK—BRUSH.—In Mount Vernon, N. Y., on Wednesday, June 5th, Mr. David Jayne Bullock, of Wallingford, Pennsylvania, and Miss Marion Robertson Brush, daughter of Dr. Edward F. Brush.

COPE—PERKINS.—In Germantown, Pennsylvania, on Sunday, June 2nd, Dr. Thomas Appleton Cope and Miss Carrie E. Perkins.

COGER—TURNER.—In Chicago, Illinois, on Saturday, June 1st, Dr. E. Earl Coger and Miss Mae Turner.

GAINES—LIVINGSTON.—In New York, on Wednesday, June 5th, Dr. John Strother Gaines and Miss Edith Livingston.

HALPERN—LOEWI.—In Philadelphia, on Wednesday, June 5th, Dr. John J. Halpern and Miss Minnie Loewi.

LYSTER—BISSELL.—In Detroit, Michigan, on Tuesday, May 28th, Dr. William John Le Hunte Lyster, United States Army, and Miss Alice Chase Bissell.

OWRE—RIIS.—In Richmond Hill, Queens Borough, N. Y., on Wednesday, June 5th, Dr. Oscar Owre and Miss Kate Elizabeth Riis.

PHELPS—CURTIS.—In Cambridge, Massachusetts, on Monday, June 3rd, Dr. Gouverneur Morris Phelps and Miss Helena Pelham Curtis.

ROME—HUTCHISON.—In Brooklyn, N. Y., on Wednesday, June 5th, Dr. Russell Murray Rome and Miss Lilliah Hutchinson.

SIBLEY—PAGE.—In Brookline, Massachusetts, on Saturday, June 1st, Dr. Benjamin Ernest Sibley and Miss Beulah Page.

SUTTON—ROGERS.—In Brooklyn, N. Y., on Monday, June 3rd, Dr. McWalter B. Sutton and Miss Josephine Leslie Rogers.

TYRODE—CLEMENTS.—In Brookline, Massachusetts, on Saturday, June 1st, Dr. Maurice P. O. V. Tyrode and Miss Helen F. Clements.

ZIMLICK—DAVISSON.—In Germantown, Pennsylvania, on Wednesday, June 5th, Dr. Arthur J. Zimlick and Miss Daisy Davisson.

Died.

ALLEN.—In Shanghai, China, on Tuesday, June 4th, Dr. Young J. Allen, aged seventy-two years.

ARCHER.—In Richmond, Virginia, on Tuesday, June 4th, Dr. Edgar Archer, aged seventy-nine years.

BANKS.—In Norfolk, Virginia, on Tuesday, June 4th, Dr. H. T. Banks, aged seventy-nine years.

BANKS.—In Independence, Missouri, on Saturday, May 25th, Dr. W. M. Banks.

BESSETTE.—In Chicago, on Saturday, June 1, Dr. Joseph C. Bessette.

BINGHAM.—In Kenosha, Wisconsin, on Saturday, June 1st, Dr. John L. Bingham.

BUCKNUM.—In Denver, Colorado, on Saturday, May 25th, Dr. A. M. Bucknum, aged eighty-four years.

CAMPBELL.—In Buffalo, N. Y., on Monday, May 27th, Dr. Robert E. Campbell.

FORMENTO.—In New Orleans, Louisiana, on Tuesday, June 4th, Dr. Felix Formento, aged seventy years.

FECTEAU.—In Natick, Rhode Island, on Sunday, June 2nd, Dr. L. A. Fecteau.

FRANCIS.—In Newport, Rhode Island, on Friday, June 7th, Dr. Valentine Mott Francis, aged seventy-three years.

FUERTH.—In Detroit, Michigan, on Monday, June 3rd, Dr. George F. Fuerth, aged forty-eight years.

KLOMAN.—In Baltimore, Maryland, on Sunday, June 2nd, Dr. William C. Kroman, aged seventy-two years.

McGUIGAN.—In Lynn, Massachusetts, on Monday, June 3rd, Dr. John J. McGuigan, aged forty-three years.

McLAIN.—In Washington, D. C., on Sunday, June 2nd, Dr. John Speed McLain, aged forty-nine years.

TURNER.—In Worcester, Massachusetts, on Wednesday, May 29th, Dr. Charles H. Turner, aged forty-five years.

WEBER.—In St. Louis, Missouri, on Wednesday, May 29th, Dr. Peter J. Weber, aged thirty years.

New York Medical Journal

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NEW YORK, JUNE 22, 1907

WHOLE No. 1490.

Original Communications.

SANITATION IN PANAMA.

By J. EDWARD SCHUBERT, M. D.,
New York.

When the Nicaragua Canal Company inaugurated its work in 1880, so great was the fear of a high death rate among its employees that extraordinary efforts were put forth in the way of prophylaxis. Nor was this fear unjustifiable. The experience encountered on the Isthmus of Panama, where every railway tie represented a death, the demoralizing death rate from yellow fever, pernicious remittent malaria, smallpox, etc., not only among canal employees, but the foreign colonists of Panama and Colon, furnished sufficient grounds for apprehension, and yet the death rate along the line of the canal work from climatic diseases was only seven-tenths of one per cent., a proportion so small as to stagger those who believed that the diseases of the tropics are far more fatal than those with which they are familiar at home. This low mortality was almost entirely due to the policy of the canal company, which placed sanitation in the preliminary stages of the work ahead of all other considerations. Very different was the record established on the Panama route during the French occupation.

According to Wallis, smallpox, yellow fever, and paludal fevers in their infinite varieties and forms are never absent from this intertropical region, where they are truly endemic. Nelson, after an experience of five years at Panama, gives his approval of the statement long made with reference to the isthmus, that it is the grave of the European. It has also been known as the pest house of the tropics, and Bigelow says that "here truly life dies and death lives."

In the contracts let by the old Panama Canal Company, it was necessary to import labor from abroad, and in the effort to supply the demand many laborers were brought from the island of Jamaica, from the British Antilles and Carthagera, and even from the Mississippi valley. The sickness and loss of life among these men engaged at work have been variously stated. Of 7,000 men, the company reckoned that about 1,000 were always in the hospital. From other sources we learn that the sickness and death rate among the laborers were very high. In

Panama and its vicinity thirty-seven engineers out of less than one hundred are said to have died during the months of March and April, 1882. There was one single French engineer who had been able to attend to the work beyond one year and a half, continuously. In September, 1884, it is said, the canal company buried 664 officers and men. The health conditions, as officially reported by the French authorities, do not show the high mortality from diseases due from climatic causes that had been indicated by travelers and other independent observers, but Heffenger declares that it was impossible for him to obtain access to the health records of the Panama Canal Company, and that the impression gained by him, after investigating the matter privately, was that the public reports were garbled and incorrect; but again it is stated that he was informed by leading physicians of Panama that in the first eleven months, during which preliminary work in the canal was under way, sixty-five officers and eight hundred men died of disease. Of laborers brought from the United States during this time, before the end of the second month one half was on the sick list or enfeebled by sickness already sustained. Those of us familiar with the Panama of olden days can well remember the morning and evening death train to famous Monkey Hill, and the foregoing statements as to the fatality of the climate along the Panama route are not at all exaggerated. It has been roughly estimated that in the construction of the Panama Railway every cross tie represented a human life. So thoroughly was the professional mind of America and Europe imbued with these ideas as to the lack of healthfulness of the Panama route that, when the first *Annual Report of the Medical Department of the Nicaragua Canal* was published, a secret commission was sent over from England representing the Colonial Department and certain large contractors to investigate its truthfulness, and before leaving Nicaragua they called upon the writer, disclosed the purpose of their mission and complimented the company upon the results of its thorough sanitation. The comparative results of the death rate at Nicaragua of seven tenths of one per cent. as against a sixty-seven per cent. death rate at Panama was naturally startling.

Then came our experience in Cuba, where Colonel Gorgas, the present efficient head of the Panama Sanitary Department, wiped out yellow fever and made Havana a health resort instead of a pest hole. These two experiences of the American people have

* Read before the American Climatological Association, illustrated by sixteen stereopticon views.



now thoroughly demonstrated the fact that the tropical zones are not necessarily unhealthy nor are their diseases fatal to Europeans. The local conditions at Panama first encountered by the American government were, of course, the same as existed during the French régime, and this is the reason that so much money and time and labor have been spent in sanitary work on the isthmus. One cause of disease was the utter lack of rigid quarantine service, therefore the Marine Hospital Service established quarantine stations at Colon and Panama, thereby preventing the importation of yellow fever, smallpox, and the bubonic plague. These marine officers were all placed under the direction of Colonel Gorgas.

Another cause of the great sickness which existed during the French régime was the condition of filth and rank vegetation which covered the isthmus from one end of the line to the other. City health board laws were unknown or poorly practised in both Panama and Colon. The situation of Colon was so low as not to permit of drainage. The so called Front Street was paved with boards, and back of it a marsh and stagnant pools of water filled with filth unmentionable festered under the tropical sun. The mosquito was king of all he surveyed, and in his industrious manner inoculated one indi-

vidual after another. The streets of Colon and Panama were in many places unpassable, and in all places unsanitary. Sewage was an unknown factor, and the tremendous fall of tide at Panama, showing an average of twenty-six feet twice daily, left bare for some distance from the old walls of Panama dirty coral reefs at very low tide.

Then again, the methods of living of the employees were conducive to ill health. They were mostly paid stated wages, and allowed to buy their own food and live as they pleased. It can be readily understood how under such conditions a small percentage of their money was spent on food and proper lodgings, while the larger part was wasted on drink, women, and gambling. Enlistment on the sick or hospital roll was not compulsory, and therefore various diseases had a thorough hold on the patients before they came under treatment. This was the condition of affairs which confronted Colonel Gorgas when he assumed control of the sanitary work on the isthmus of Panama. Truly it was an enormous work that he had to undertake.

At Colon, Front Street was paved, and the streets at Cristobal and on the beach were improved. Houses of laborers in the back streets of Colon were inspected and in many instances reconstructed.



FIG. 2. Old sea wall of Panama.



FIG. 3. Entrance to Ancón Hospital.



FIG. 1. General view of the Bay of Panama.

In Panama a complete sewage system was installed, and the streets throughout the city torn up and repaved. The main sewer discharge was carried out some distance from the city and discharged over the coral reef in the bay. In Colon some of the lower streets had been raised a few inches from the level, so as to give proper drainage, and a sewage system installed. A street cleaning and garbage cleaning corps was organized, streets were sprinkled, rats were exterminated as far as possible from the city, sanitary inspectors inspected frequently the yards in the rears of houses, native houses were entered, cleaned, and whitewashed, mosquito brigades were formed and continued their warfare until the mosquito is now almost a thing of the past; disinfection brigades, much to the disgust of the natives, entered the houses and cleansed them after the presence of infectious disease, and a sick inspection corps paroled the city discovering the sick and sending them, whether willing or unwilling, to the hospital.

Then was taken up the inspection of water tanks and water supply. In the old days open water tanks abounded and became breeding spots for mosquitoes. The Camocha and Mount Hope reser-

voirs were built, and to-day the water supply of both Panama and Colon is unsurpassed anywhere in the world. During the year 1906 eight hundred and nine vessels were inspected and passed at the ports of Ancon, Panama, Colon, and Cristobal. Ancon and Panama are on the Pacific side, and Colon and Cristobal are on the Caribbean. The very commodious hospital of Ancon, which is beautifully located outside of Panama, was thoroughly overhauled and supplied with mosquito netting for the windows and for the verandas. On Colon beach the Colon hospital was renovated and greatly enlarged, and also protected from mosquitoes. Subsidiary hospitals have been established along the line of work, notably at Miraflores, Bas Obispo, Empire, Paraiso, Las Cascadas, and Gorgona. An ambulance corps service between these receiving hospitals and the main ones at the end of the line has been established on the railway and makes daily trips. In the island of Taboga, situated well down on the gulf of Panama, the old French sanatorium has been remodeled and refurnished and is used as a retreat for convalescents.

We all remember the recent criticism in the newspapers of the treatment of "Uncle Joe" Cannon by



FIG. 2. The tuberculosis and insanity wards at Ancon Hospital.



Colonel Gorgas, but as physicians we should all take our hats off to him for enforcing even among the favored his just though strict sanitary rules in the quarantine service. This somewhat apparent severity exercised by him and his efficient subordinates in every line of sanitary work herein mentioned has borne its fruit, and to-day the American people can point with pride to the wonderful work accomplished in so short a time, whereby Panama has been made a safe and healthful resort and abiding place, not only for its natives and those of the West Indies, but even for the Anglo-Saxon. Yellow fever is now apparently a thing of the past in this region. Malarial fever in its various manifestations, while still present, is so in a much less marked degree than formerly. Tropical and amoebic dysentery under the improved sanitary conditions and water supply should be rarely met with in the future.

An incorrect idea prevails in the States regarding the fatality of the different forms of malarial fever met with in the tropics, and it may astonish many of you when I state that the average duration

of an attack of remittent malarial fever was in Nicaragua four and one half days and in Panama about seven and one half days, in contradistinction to its fourteen days' run under similar treatment in the United States. Laborers along the Panama route are subject to all diseases, outside of the infectious class, that they may contract in construction work in our country, but the bugbears of yellow fever, bubonic plague, smallpox, and pernicious malaria have been, we believe, successfully eradicated. Many unauthorized statements are made from time to time by travelers who fly across the isthmus, fleeing from imaginary disease as a saint would from the devil, and are printed throughout the country as statements of actual facts. I well remember one steamer load of representatives who made a so called inspection tour of the isthmus, but carefully got on board their ship before sundown and slipped out each night to sea lest some of these hobgoblins should catch them. I have been told that one of the former high officers of the government started one day from Panama to Colon, intending to remain there five days and then take a steamer to New



FIG. 5. Ancon Hill and Ancon Hospital.

York, but on the train crossing the isthmus he met a fellow passenger who told him that pernicious malarial fever was much more dangerous to the patient than yellow fever, whereupon he held the steamer that was to sail that day some five or six hours, transacted his business and fled for New York. You all remember a noted writer who spent about eighteen or twenty hours on the isthmus and then wrote a scathing article regarding its sanitary conditions. I will show you in a few moments a picture of the reservoir supplying Colon, which he said did not exist, but which was there at the time of his visit.

In spite of these unqualified denunciations of the sanitary policy of the government and untruths regarding the healthfulness of the isthmus, which we must admit were based upon historical facts of the past, I have no hesitation in stating that to-day America has made of Panama an abiding place for its citizens far more healthy than many of the southern States, and equally so with New York and

The old travelers to the isthmus of Panama have

vivid and burning recollections of the discomforts of the Grand Central Hotel and one or two other hostelries of smaller size and less repute. Comfortable living quarters for foreigners were unobtainable, or, if at all, in small numbers. There was a tendency for the people to crowd themselves into the termini of the canal line. The government has created new towns along the line of work. Hotels have been erected, and at Ancon can be found the Tivoli, of which I will show you pictures, which is as comfortable as any seaside hotel in the United States. These towns have been laid out under sanitary inspection, and the hotels and additional quarters for married and single men have also been built under strict inspection. They are all screened, as are the hospitals. They are located as far as possible on high ground, so that at all times the inmates are in a comparatively cool atmosphere and enjoy the breezes which blow across the isthmus. Large storehouses have been established at Ancon and Cristobal. Cold storage cars have been installed on the railway line, and healthy and palatable food is supplied at a low figure to the consumers.

Finally, so greatly have the conditions been improved by the sanitary methods in vogue that in 1906 only twenty-eight per thousand were on the sick list. The ratio of deaths per thousand was



FIG. 6. Nurses' quarters.

forty-one. The highest mortality was among the blacks, in all probability attributable to their low vital resistance. Yellow fever has been apparently exterminated, but of course sporadic cases may slip through the quarantine. The last case of yellow fever on the isthmus occurred during the month of



FIG. 7. While the house is being prepared for fumigation the setting of the boards is being soaked in bichloride of mercury.

May, 1906. Practically all the quarters of employees, officers, and hospitals have been permanently screened.

The average number of men employed in the Sanitary Department for the year 1905 was 1,842, for 1906, 2,373. The total number of physicians in the Sanitary Department in February, 1907, was 87; the total number of female nurses, 103; the total number of male nurses, 26. There are at present nine hospitals and one sanatorium in existence. The average daily per capita cost for patients is

56 WEST FORTY-SIXTH STREET.

The administration of thyroid extracts or iodides and the application of iodine ointments are only of value in recent cases of soft or parenchymatous goitres, especially in young persons.—*International Journal of Sur-*

PRESIDENT'S ADDRESS BEFORE THE AMERICAN CLIMATOLOGICAL ASSOCIATION.*

By THOMAS DARLINGTON, M. D.,
New York.

It is with a deep and sincere appreciation of the honor you have conferred upon me that I speak to you to-day. The record of this association is an honorable one. The work you have accomplished is a sufficient guarantee of your earnestness of purpose, and it has been your privilege and pleasure to contribute in no small measure to the alleviation of the physical ills of mankind. The duties of this position are a welcome change from the pressure of political life, and I render to you all my most grate-

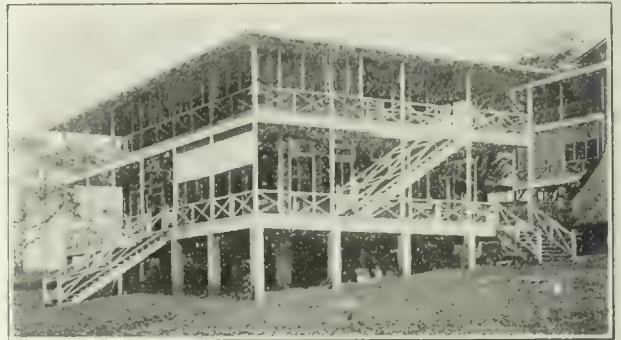


FIG. 8. Receiving hospital, Empire.

ful thanks in selecting me for a position held by so many worthy men.

It is, therefore, in no spirit of criticism that I venture to bring before you suggestions for future achievement, but rather with the purpose of appealing to that spirit of progress which is such a fundamental verity of our profession and which has characterized the efforts of those whom we delight to honor.

As an association, are we not drifting toward specialization in our work? Our tendency has been to



FIG. 9. Bringing out the sulphur pots after fumigation.

focus a large share of our attention upon pulmonary tuberculosis; worthy and important as that subject is, let us not forget that there is other work to be done.

DELIVERED MAY 6, 1907.

Times and manners are not immutable, but it behooves us to occasionally glance backward and refresh our minds with the calm philosophy of the ancients. Socrates quotes the eminent physicians of his time as saying that "they cannot cure the eyes by themselves, but that if the eyes are to be cured, the head must be treated," and then again that "to think of curing the head alone, and not the rest of the body also, is the height of folly. And arguing in this way, they apply their methods to the whole body, and try to treat and heal the whole and the part together."

Metaphorically, may we not apply this to ourselves? The object of our association as stated in the constitution limits us in the letter only; not in the spirit. We have a wide range of subjects for consideration. The profession as a whole is making rapid strides, and even since our last meeting there has been a marked divergence of thought in regard to the treatment of tuberculosis, and in what is perhaps of greater purport, the studies made in reference to serum therapy and the opsonins.

This association has contributed more toward the

the lowest strata of the "submerged tenth" yet the systematic routine of hospital existence, the outdoor life, and good food give us results that are most encouraging. Apparently hopeless cases are being cured, and this is taking place despite climate, not with its aid.

The advantage of curing patients in the climate in which they must afterwards live, and the elimination of that most dreaded complication "nostalgia" are results of prime importance. No climate, however favorable, can avail much if homesickness develops, and the questions of the financial status of the patient and his future life are of too great significance to be overlooked. A contented mind is a therapeutical adjunct of the utmost value, as we have all had abundant opportunity to observe. I wish again to quote Socrates: "That as you ought not to attempt to cure the eyes without the head, or the head without the eyes, so neither ought you attempt to cure the body without the soul."

Another instance, worthy of mention, is the remarkable results attained in the treatment of bone tuberculosis by the same methods. The Sea Breeze

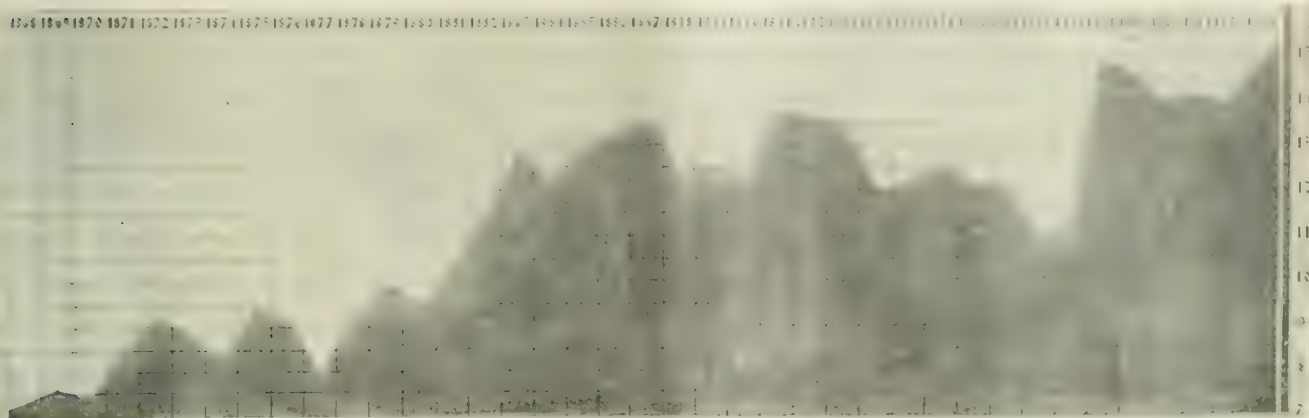


CHART 1. Death rate per 10,000 population in the old city of New York, present boroughs of Manhattan and the Bronx from heart disease, 1868-1906.

elimination of tuberculosis than any other society. In all probability the results of home treatment and of sanatoria located in cities would never have been attained but for your efforts in bringing out the facts relating to the rational and hygienic methods of the treatment of the disease.

There is a growing tendency to promote the virtues of hygienic home methods in the treatment of tuberculosis at the expense of climatic treatment. The latter still has a most important place, but other methods are pushing to the front and must be considered.

The fresh air treatment of tuberculosis is not a formidable rival to the purely climatic cure. Without decrying my own city, it must be admitted that New York has a variable and most trying climate, yet we have a sanatorium for consumptives situated on North Brother Island. This island stands at the junction of the East River and Long Island Sound, near that region very properly called Hell Gate. The climatic conditions at this point are distinctly unfavorable and the patients received are mostly those afflicted with an advanced type of the disease. They are recruited from a class in whom good hygienic surroundings are at discount—in fact, from

Home at Coney Island and the Junior Home on the bank of the East River, almost in the heart of New York city, have shown gratifying results.

A point I wish particularly to emphasize is the question of pulmonary tuberculosis due to the ingestion of infected food and the need of more work along the line of investigation of this mode of infection. The question of infected milk, meat, and other food has received a large share of attention, but less stress has been laid on the possibility of food becoming accidentally infected from contaminated hands. The wide distribution of the tuberculosis bacilli and the number of people suffering from the disease render it extremely probable that direct hand to hand contact with other people, as well as the handling of any articles which may be infected, give us a fruitful source of infection of the food we handle and eat. If typhoid may be carried this way, why not tuberculosis? For the purpose of showing the evident possibilities of infection in this manner I wish to present a report of an interesting case which has recently come under my observation.

In making an investigation as to the cause of several simultaneous cases of typhoid fever occurring in one family in New York city, Dr. George D.

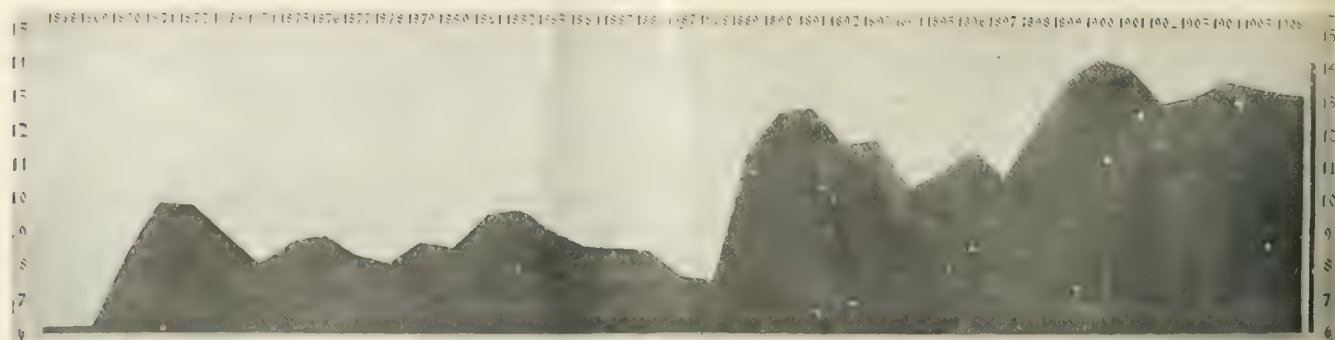


CHART. 2—Death rate per 10,000 population in the old city of New York (present boroughs of Manhattan and the Bronx) from Bright's disease, 1868-1906.

Soper elicited the information that the cook employed by this family had lived in four different families during the period from 1902 to 1907, and in each instance it was discovered that from three to four weeks after the cook had entered upon her duties practically all the members of each household were stricken with typhoid fever. In all twenty-eight cases of the disease were traceable to this source. The board of health removed the cook to the reception hospital for observation. She denied ever having had the disease. Examination of the blood and urine was negative, but the bowel discharges were found to furnish practically pure cultures of the typhoid bacillus. The woman has now been under observation about six weeks. At intervals of a day or two the feces are clear, but this intermission is invariably followed by discharge containing the bacilli in practically unlimited quantity. We do not know for how long a period this condition has persisted nor how many other cases of the disease may have emanated from this source. The mode of infection is clearly indicated by the woman's occupation, and is a sad commentary upon her personal habits of cleanliness. The lesson is one which should be heeded.

Is it not possible for the tubercle bacillus not only to penetrate the intact epithelium but also the entire wall of the gut, all without leaving a recognizable trace of its passage? The acidity of the gastric juice may impair the vitality of the bacilli, but this is offset by the alkalinity of the intestinal secretions. The bacilli are then taken into the lymph channels, the various groups of glands may become affected, and the bacilli find their way into the thoracic duct and so directly into the pulmonary circulation. The frequency of the sites of tuberculous lesions is pertinent. In regular order we find the lung, liver, and brain the most prominent sites of the lesions. Macfayden and MacConkey,

in their researches, speak of the intestines of children as a more important mode of entry for the tubercle bacilli than the tonsils or adenoids.

When the probable frequency of this mode of infection is considered, we may well take cognizance of the accidental food contamination from infected hands.

We have but just begun our fight with this plague and with these new weapons of warfare our chances of success are brightening, but in our efforts for victory in this line we must not be unmindful of the other enemies that assail us.

The questions of climate, fresh air, and proper environment in their relation to other diseases of the thorax are insistently demanding an answer, and the correlated circulatory diseases need further study and elucidation. I wish briefly to call your attention to the existing conditions and the potential possibilities of this association in research along these lines.

The problems are for you to solve; my efforts are merely directed towards suggestions for future work.

We are confronted with the increased mortality from heart and kidney diseases. This increase is particularly noticeable in our cities, and the diseases are mentioned together because of their intimate ætiological relation. The following tables show this increase most graphically, and a mere glance at them should bring us to a realizing sense of its importance.

Without considering the actual number of deaths, I wish to call your attention to the death rates in a number of cities of the United States. The figures given are for the death rate per 10,000 population.

It has been found practically impossible to obtain statistics covering the same length of time in all cities, but the tables presented are sufficiently comprehensive to prove the truth of the contention:

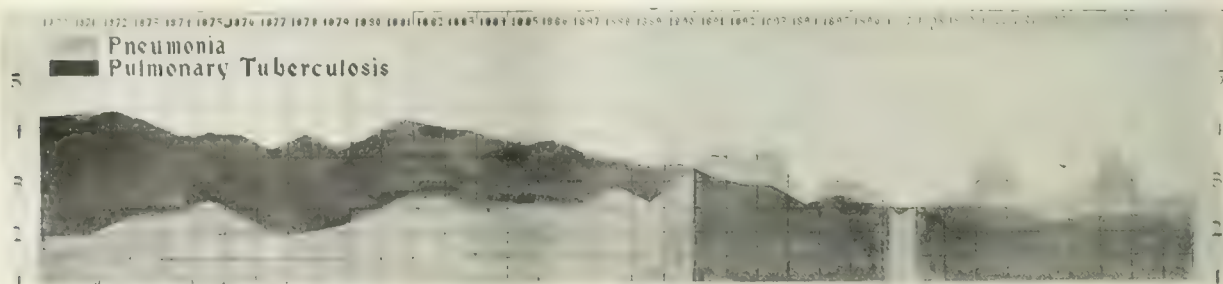


CHART. 3—Death rate per 10,000 population in the old city of New York (present boroughs of Manhattan and the Bronx) from pneumonia and tuberculosis, 1870-1906.

Among the infectious diseases, pneumonia demands attention. The problem is not quite so serious a one as in the case of heart and Bright's diseases. Our knowledge of the etiology of pneumonia has greatly advanced, yet we have only recently made any progress in our attempts at its alleviation and cure. Drug treatment *per se* is assuming less and less importance, and we are doing little else than assist nature in the treatment of this disease. Our hope of specific medication seems to lie without collaborators in the field of serum therapy. In the meantime, are we not too quiescent in our attitude towards general prophylaxis and the methods tending to eradicate the disease?

Pneumonia as a cause of death has been second only to pulmonary tuberculosis. Now it has outranked even that "captain of the men of death," and the chart shows the situation as it exists in New York city.

Computations based upon the latest census reports indicate that there were almost 140,000 deaths from pneumonia in the United States during 1905. If we allow a mortality rate of 20 per cent. we may assume that there were 700,000 cases of this disease during the year.

During the five year period from 1896 to 1900, the death rates from pneumonia and bronchitis collected in various countries and cities are given in the following table:

PNEUMONIA AND BRONCHITIS.	
	Death rate per 10,000 population.
England and Wales.....	22.70
Stockholm	27.40
Berlin	26.70
Paris	31.20
Vienna	16.10
Amsterdam	30.70
Copenhagen	21.30
Bombay	30.60
Calcutta	24.20
Philadelphia	25.10
New York	36.60

During the period from 1881 to 1904, pneumonia increased or remained stationary in all of these places, except Stockholm and Berlin.

In this country, in the ten States where vital statistics are accurately recorded, there was a general increase in the number of cases during the period from 1900 to 1904. In 1905 the number of deaths markedly decreased, while in 1906 an upward tendency in the death rate has again been apparent.

In all of these States, the death rate in the cities has been and is persistently higher than in the rural regions. This condition is not peculiar to this country, for the Registrar General's Report of 1902 states that in England and Wales the city rates were in excess by between 80 and 90 per cent. The etiological factors I have mentioned in connection with heart and Bright's disease are of equal importance here, and in addition, the importance of the constant inhalation of dust, smoke, and other irritating foreign particles merits attention. We must all recognize the value of pure, fresh air in the treatment of pneumonia, but have we sufficiently studied the value of pure, fresh air in its prevention?

The question of climate in its relation to the prevalence of this disease should receive more attention than it has so far. It would be of vast interest to know the exact climatic conditions, temperature, humidity, altitude, and state of the soil in those for-

tunate localities where pneumonia is practically non-existent.

You may remember that the Eskimoes brought back by Commander Peary from the Arctic regions in 1898 practically all succumbed to pneumonia soon after reaching New York, yet the disease is unknown in their home climate.

During a recent lecture, Peary made the statement that during his last trip to the far North none of his party suffered from coughs or colds, yet they lived for many months in a temperature of from 25 to 75 degrees below zero. Since their return to this country they have all suffered from respiratory troubles.

The Medical Commission appointed by the Board of Health of New York city in 1904 for the purpose of investigating the causes of the acute respiratory diseases was composed of eminent men. Much time and scientific effort was expended in the study of these diseases, particularly pneumonia. The scope of the work was extensive and comprehensive, and much valuable information was obtained. The problem, however, was found so intricate that no ultimate conclusions were reached. Much remains to be done to supplement this work, for we are as yet only on the threshold of achievement.

These problems are urgent. We would be but following the object of our association if we devoted more time to this consideration. It is essential that we keep clear of stereotyped methods if we are to fulfill our highest aim and purpose.

In this short outline I have been able to only briefly call your attention to a few vital needs of the times. If I have succeeded in impressing you with the need of renewed efforts along these lines, I shall feel that much has been accomplished, for the record of the American Climatological Association is inspiring indicative of what the future holds in store.

48 WEST FIFTY-NINTH STREET.

HYGIENE IN RELATION TO THE HEREDITY OF DISEASE.*

BY PRINCE A. MORROW, A. M., M. D.,
New York.

I wish to express my appreciation of the honor of having been chosen to preside over a section whose work bears such an important relation to the general work of this association. With the evolution of medicine the Department of Hygiene and Sanitary Science occupies an increasingly larger sphere of influence and value; its domain embraces practically the entire field of preventive medicine. It is in this altruistic field that the most substantial benefits of medicine to humanity find promise of fulfillment.

Hygiene has been defined as the art of preserving health and, since disease is the antithesis of health, sanitary science deals with the causes of disease and their modes of communication. It is recognized that in our present day civilization the most common causes of disease are of bacterial origin and are propagated chiefly by human agency. The work of sanitary science has been almost exclusively directed toward preventing the contact of disease germs with

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the human body or their action upon the environment.

The programme of the sanitary science, which regulates the general trend and direction of sanitary efforts, it embraces the collection of water and milk borne diseases by purification of the water and milk supply; the prevention of air borne diseases, as represented by tuberculosis; the prevention of contact of disease germs with the sick by improvements in hospital construction, or their destruction by providing ample space and sunlight. All of these measures are directed to the improvement or correction of environmental conditions which lie entirely without the control of the individual.

Within the past two decades sanitary science has shown a marked aggressiveness in attacking many infectious diseases which have hitherto defied control. It has not only diminished the death rate of many particular diseases, but it has lowered the general death rate and lengthened the average duration of life.

There is, however, one prolific source of disease which has always remained practically exempt from sanitary intervention. It is to this neglected field I would direct your attention in the remarks I shall make introductory to the scientific part of our programme. The immense volume of disease, and predisposition to disease, which flows through the channels of heredity and to which every organic system of the body sends its tributary, has not received from the medical profession the consideration its importance demands. I have elsewhere stated my conviction that heredity must occupy an important place in any comprehensive system of hygiene. In the further evolution of hygiene its office will not be restricted to the care of the health of the existing population, but will embrace in its objects the health of the descendants. The final service of hygiene to humanity will be the prevention or limitation of that vast mass of disease and misery engendered through hereditary influence.

The tendency has always been to magnify the importance of environment and minimize the influence of heredity in the causation of disease, but it must be admitted that the most powerful predisposing cause of many diseases can be traced to hereditary influence. While heredity does not furnish so rich a mine of ætiological factors as environment, it creates the soil favorable for the germination and development of disease germs, and without which they would be devoid of pathogenic activity. The occurrence of disease, especially zymotic disease, is a question of seed and soil; the germ is the seed and the human subject the soil.

Perhaps the real reason for the neglect of this field of preventive medicine is general ignorance of the laws of heredity and the opinion that its processes cannot be directed or intelligently controlled. Although there is much that is mysterious, hidden, and inexplicable in heredity, much that is apparently capricious, irregular, and even contradictory in its phenomena, there is every reason to believe that its processes are regulated by biological laws as fixed and unchangeable as those which preside over all organic nature. The fault lies not in the laws of heredity, but in ourselves that we do not comprehend them. This assumption would seem to be justified by the experimental application of the law

of heredity to the volume of plants and animal life. For example, the results of the cross breeding of mice and other animals can be determined beforehand with almost mathematical accuracy.

Perhaps the simplest illustration of the relation of heredity to environment is the case of the human body. It is supplied by the progenitors, fashioned by the forces of heredity, and exposed to an environment from which it draws energy, and is at the same time subject to conditions which derange its normal working. If the mechanism is made up of sound material with proper adjustment of its parts to their uses, it will be apt to stand the "wear and tear" of life. If it is defective in material and construction it will be heavily handicapped in the race for life or prove unequal to the demands made upon it.

We cannot consider the human organism apart from its environment and the conditions which are inimical to its healthy working. A strong constitution transmitted by normal heredity, while not conferring absolute immunity against disease germs, often enables the system to dominate their action and throw off the disease. The converse of this is seen in pathological heredity—there is transmitted not only a defective physical organization with an abnormal susceptibility to the invasion of disease germs, but this predisposition is commonly associated with an inability to resist their pathogenic action and recover from their effects. The stronger constitution survives diseases to which the weaker organism succumbs. Experience shows that a hardy constitution constitutes a stronger defensive armor against the attacks of disease than a weak organization, no matter how reinforced and strengthened by favorable hygienic surroundings. The value of a good heredity is manifest in what is termed the life expectancy of the individual. "It is generally understood," says Ribot, "that longevity depends far less upon race, climate, profession, mode of life, or food, than upon hereditary transmission."

Another inheritance from the progenitors may be termed the "biological capital." This hereditary endowment may be sufficient to carry the infant through its intrauterine existence, but prove unequal to the drafts made upon it when separated from the maternal stem and compelled to maintain an independent existence. Millions of children perish soon after birth, because they are constitutionally incapable of surviving under the ordinary conditions of their new environment. Many of them die from native debility, an insufficient vital power, an incapacity for life. They show a diminished capacity of resistance to ordinary infantile diseases not of a serious nature; they succumb to slight causes, or they die without apparent cause.

It is a noteworthy fact that while sanitary science has lowered the general death rate, there has been no diminution in the infant mortality rate, since accurate records have been kept. To-day 25 per cent. of all deaths occur in children under one year of age. Seventy years ago this proportion was only 20 per cent. According to Newman, there are 120,000 deaths of children under twelve months in England and Wales each year, exactly one quarter of the total mortality. Thirty per cent. of infant mortality occurs within the first four weeks, 48 per cent.

within the first three months. The most common causes assigned for this precocious mortality are immaturity, congenital defects, atrophy, debility, etc. While environmental conditions, the lack of care and proper nourishment, may enter as a factor of mortality, the dominant influence must be assigned to the hereditary make up of the individual. It is to be noted that while 17 per cent. of all infants born die in the first year, 42 per cent. of the offspring of alcoholic parents, and a still larger proportion of the offspring of syphilitic parents die within this period. The significance of antenatal influences is not to be measured alone by their effect upon infant mortality, but they render the survivors more susceptible to causes of disease in later years.

All that the infant represents in structure, capacity for life, and power of resistance against disease, whether imparted directly through the germ cells or impressed upon the organism during its intra-uterine existence, comes from the parents. In this sense, all that is present at birth is due to parental influence. But in a scientific sense, congenital is a broader term than inherited; we must recognize that all that is congenital is not inherited, and much that is inherited is not apparent at birth.

We may now inquire what is inherited in the strict scientific acceptance of the term and refer briefly to the general principles upon which the doctrine of hereditary transmission is based.

The many definitions of heredity agree in the essential principle that it is the capacity of transmitting the characters or qualities of the progenitors to the descendants. According to the accepted theory, these characters reside in a small collection of cells, the germ cells, the specialized function of which is the perpetuation of the species. They are distinguished from the somatic or body cells whose function is limited to the maintenance and existence of the body. Heredity further implies the conservation and perpetuation of inherited qualities contained in the germ plasma through successive generations.

Without pursuing the refinements of definition it may be said that the individual transmits to his offspring the qualities received from his ancestors, plus the characters impressed upon his germ plasma by environmental influences and agencies acting through his body cells.

It is asserted that in the strict scientific definition of heredity there are no inherited diseases, only a predisposition to disease may be transmitted by progenitors to descendants. Even syphilis, which has been accepted as the perfected type of an hereditary disease, is excluded, although the particulate elements of the virus pass into the germ cell and are transmitted in full virulence to the offspring. It is alleged, however, that germinal infection is not heredity, that the germ cell serves simply as the vehicle or carrier of the specific virus; further, that a child born with syphilis can transmit it to others, while inherited qualities can be transmitted to one's own offspring exclusively.

In the writer's opinion, a mistake is made in the rigorous application of the principles of physiological heredity to pathological heredity. Just as physiological processes are altered by disease, so the processes of heredity may be modified by the intercurrent of disease elements and take on a character essentially different from normal heredity. Dis-

ease is not a physical trait which may be transmitted to successive generations, but a state or condition of the system, usually of short duration, with no elements of permanency. To say that because syphilis is not susceptible of recapitulating itself in a series of generations, that it cannot be inherited, is to ignore this fundamental quality of disease. Doubtless the germ cells recover from the effects of the disease as the body cells do. All experience shows that many diseased conditions, not necessarily permanent, existing in the progenitors at the moment of conception may be transmitted to the offspring. Certain toxæmic conditions, notably alcoholic intoxication, may poison the germ cells, and the vitiation of the germ plasma may be reflected in the shape of arrests of development, general instability of the nervous system, or other stigmata of degeneration.

If, for example, one or both parents be drunken at the moment of conception, although previously sane and sober, they may produce mentally defective, idiotic, or epileptic children. In cases of acute intoxication the poison permeates the germ cells and causes abnormal nutritional conditions of the germ plasma, which may, however, be of transient duration. Strange as it may appear, an alcoholic heritage is scarcely more likely to come from an habitual drunkard than from an abstainer who may be intoxicated at the moment of procreation for the first time in his life.

The important bearing of these facts upon the physical condition of the progenitors at the moment of conception cannot be too strongly insisted upon. Pinard, the distinguished gynæcologist states:

"In families where by the side of children healthy and vigorous at birth, I have assisted at the birth of a child presenting at the time or later manifest stigmata of degeneration, then when pregnancy and accouchement have passed into physiological conditions, other sound and vigorous children have been born. I have almost always been able to search out and make known to parents the cause of this calamity. In looking over my notes and laying aside all relating to syphilitics and alcoholics, in twenty-three families in which I find among children in good condition the existence of a degenerate, an infirm, or an idiot, twenty-two times I have been able to determine and make known to parents that one of the two was, at the moment of procreation, either sick or convalescent. I have found twelve times convalescence from typhoid fever, five times from the grippe, two times from icterus, one time from acute articular rheumatism, two times from the gout. In only one case was I unable to discover anything. I am absolutely convinced that every pathological state, every physical and mental depression of the generators, one or both, has a manifest influence upon the product of conception and its future development."

With the exception of syphilis, the inherited character of which seems fully established, what we recognize as pathological heredity is not the transmission of disease germs, but a predisposition to disease, a constitutional protoplasmic state which renders the offspring peculiarly susceptible to the disease from which the progenitors were suffering at the time of conception. It is well known that syphilis may create a terrain or soil favorable for the germination of tubercle bacilli, and perhaps other bacilli. It does this by impoverishing the organism and dimin-

ishing the capacity of resistance against the microbial invasion.

I am persuaded that the hoped for extermination of tuberculosis is only possible through the suppression of its hereditary factors. While not disparaging the brilliant results already achieved in the warfare against tuberculosis by the improvement in environmental conditions, yet a too ardent optimism should not be allowed to obscure our judgment as to its limitations. Tuberculosis is not curable except in its early stages; the germs are ubiquitous, and so long as syphilis and alcohol create a soil favorable for their germination new tuberculous units will continue to develop. It is only by suppressing the output of those who are predisposed to tuberculosis that we may hope to bring it under control. The important rôle played by an alcoholic heritage in the genesis of insanity and other forms of degeneracy indicates that the saving hope of the situation lies in the hygiene of heredity.

I have collected from various sources a list of diseases, by no means complete, which are generally accepted as having a hereditary basis. Only a brief reference will be made to the list of nervous diseases transmitted through hereditary influence, and I shall pass over entirely that vast array of disease and degenerative changes due to syphilis, as it forms the subject of another paper on the programme.

Diabetes.—The hereditary character of this disease is well established. Fitz and Joslin give statistics showing that heredity plays a rôle in 23.8 per cent. of cases. According to Senator one fifth of all diabetics seen in private practice, and presumably part of the better class, are most certainly hereditarily disposed to diabetes. The figures of Van Noorden show 18.5 per cent.; while R. Schmitz found hereditary predisposition in 998 out of 2,115 diabetics, a proportion of 47 per cent.

Gout.—Senator declares that if we reckon only the direct transmission of the disease, heredity is demonstrable in 60 per cent. of the cases. Scudamore's statistics give a proportion of 59 per cent. (309 out of 523 cases). In France, the proportion of various observers ranges from 44 to 57 per cent. In England, it is somewhat larger, 50 to 75 per cent.

Heredity is declared to be a potent factor in chronic articular rheumatism. Bannotyne has traced heredity in 5 per cent., and Garrod in 12.8 per cent. of his cases.

Obesity.—The proportion of cases in which hereditary predisposition can be traced varies from 50 to 70 per cent. Anders declared that it was clearly transmitted in 330 out of 543 of his cases.

Myxædema.—In myxædema, as in acromegaly, direct hereditary transmission of the disease has been observed.

Rickets.—Although poor food is held to be the chief factor, direct heredity is held accountable by certain authorities. Ritter found traces of rickets in twenty-seven mothers of seventy-one rickety children.

Hæmophilia.—Heredity plays an important rôle in the ætiology of hæmophilia. Rosin states that females are responsible for its transmission, as they are the conductors; owing to the peculiar mode of its heredity it is safe for a hæmophilic man to marry, but not for a female bleeder.

Leucæmia is also susceptible of hereditary transmission.

Graves's Disease.—Von Leyden and Wolff state that Graves's disease is readily inheritable.

Diseases of the Heart.—While all congenital diseases are not necessarily inherited, heredity, according to Vierordt, is in occasional cases strikingly manifest.

Consanguinity, syphilis, and tuberculosis in the parents have been found to be factors in congenital heart-diseases. All authorities agree that heredity plays an important part in the causation of arteriosclerosis.

Tuberculosis.—The doctrine of the hereditary nature of tuberculosis was based upon the observed fact of its frequent occurrence in successive generations. While germinal or placental conveyance of the tubercle bacillus cannot be absolutely excluded in all cases, the modern view, as formulated by Koch, is that it is not the tubercle bacillus which passes into the offspring, but certain bodily peculiarities which favor the development of the tuberculosis in subsequent years. Leudet, quoted by Kaminer, in an experience of forty-five years, embracing 143 families numbering 1,485 persons, established heredity in about 50 per cent. of the cases.

Tuberculosis of the Skin.—Ledermann says, since in one half of the cases of lupus, tuberculosis in the ascendants has been established, there must be certain changes in the skin which predispose to the reception of the infective bacilli.

Bronchial Asthma.—Salter was able to demonstrate heredity in 40 per cent. of his cases, and Berkart in 16 per cent. Kaminer declares that although the disease is observed in both parents and children, it does not justify its inclusion among the genuine hereditary diseases.

Chronic Nephritis.—While there have been many authentic cases of "hereditary albuminuria" reported, the chief significance of chronic nephritis in the progenitors is its danger to the offspring during foetal life. Braun saw 89 per cent. of his cases end in premature labor. Fellner's statistics show 50 per cent. end in premature labor. The mortality of the children amounted in cases without eclampsia to 34 per cent. Others give even higher figures.

Leprosy.—The observation that so large a proportion of the children of leprous parentage manifest the disease led to the opinion formerly universally held that heredity was the chief factor in its propagation. It is now believed that leprosy in children is in most cases the result of postnatal infection.

Psoriasis.—The most satisfactory explanation of the ætiology of psoriasis is that of Kobner, who assumed an inherited predisposition in the cutaneous tissues. In a large percentage of cases the disease can be demonstrated in the descendants.

Epidermolysis Bullosa Hereditaria.—The name of this disease indicates its hereditary character. In rare cases hereditary transmission has been observed through several generations.

Urticaria.—Among the neurodermias it may be confidently asserted that a predisposition to urticaria is often inherited.

Ichthyosis.—Lesser says that in most cases a direct hereditary transmission from parents to children can with certainty be demonstrated.

Alopecia Prematura.—The tendency to premature loss of the hair undoubtedly runs in certain families.

Scoliosis.—Hoffa declares that heredity is an important factor in lateral curvature of the spine. His statistics show an average of 27.5 per cent. Eulenberg has found hereditary scoliosis in 250 out of 1,000 patients. Some authorities maintain that scoliosis predisposes to tuberculosis.

Congenital Dislocations of the Hip.—Hoffa states that congenital luxations repeat in the same family, so that the term "dislocation families" seems almost justified. According to Narath's statistics, not less than forty out of one hundred children suffering from this deformity could show at least one second case among the relatives.

Diseases of the Eye.—There can be no question but that diseases of the eye are transmitted through the

medium of the germ plasma. Impaired or defective vision, depending upon abnormalities of structure are seen in successive generations. Most of these anomalies are localized in certain definite parts of the organ, the cornea, iris, crystalline lens, retina, resulting in opacity, iridemia, cataract, retinitis pigmentosa, etc. According to Abelsdorf, anomalies of vision due to refraction of the eye are hereditary in 69 per cent. of hypermetropia; 65.7 per cent. of myopia; and 48 per cent. of ametropia. Hereditary predisposition can be traced in about 50 per cent. of cases of retinitis pigmentosa. One quarter to one third per cent. of persons with retinitis pigmentosa are descendants from persons consanguineously related in various degrees. A congenital predisposition has been traced in glioma of the retina. Leber describes "an optic neuritis in consequence of heredity and congenital predisposition."

Glaucoma.—Von Graefe says heredity plays a very important part in the causation of this disease. The influence of heredity is also seen in the causation of nystagmus and various anomalies of the ocular muscles. Among functional diseases due to heredity, are congenital night blindness, color blindness, etc.

Diseases of the Nervous System.—It is generally understood that hereditary predisposition dominates the aetiology of nervous affections. It may be manifested in the same type or form as exhibited by the progenitors, or indirectly in the form of various neuroses and neuropsychopathic states.

Insanity.—Moreau's statistics show in 90 per cent. of insane patients hereditary predisposition, either direct or collateral. Mayet's tables of the Prussian lunatic asylum show a heredity percentage of 30.61, in males; 32 per cent. in females. Mendel, in a private asylum, found a heredity percentage of 60 per cent.

Progressive Paralysis.—Mendel states that of 184 cases of progressive paralysis observed by him, hereditary predisposition was manifest in 34.8 per cent.; in 122 cases of functional psychoses, heredity was proved in 56.5 per cent. In Mayet's tables the heredity percentage of paralytic insanity was 18.06; in women, 15.86.

Epilepsy.—Leuret found among 106 epileptics heredity in eleven cases. According to Eulenberg a much larger percentage is to be noted, if the convulsive disorders from which children die are taken into account. Féré's statistics show that 50 per cent. of the offspring of epileptic parents are subject to convulsions. Bouchet's statistics show that of fifty-eight children of epileptic mothers thirty-seven died very young, nearly all from convulsions. Of the twenty-one who survived, seven were subject to convulsions.

Alcoholism.—The influence of alcoholic ancestry upon the offspring is manifest in the production of various forms of physical degeneracy and moral degradation. The physical degenerative forms are seen in shortness of stature, weakness, and also a tendency to tuberculosis and epilepsy. Tuberculosis is found in 10 per cent. of drunkards' children. Féré found in 308 male epileptics 118 descendants of drunkards; in 286 female epileptics, 130 with alcoholic parentage. In Germany the proportion of epilepsy due to alcoholic parentage is 30 per cent. In Switzerland it is placed much higher.

Morphinism.—Children born of morphine consumers show a marked appetite for morphine. Most of the children die within a short time after birth. Those who survive remain delicate and nervous, and often become morphinists or drinkers.

Plumbism.—Rennert's investigations of lead poisoned parents show that apart from rickets and cranial deformities, many of their children suffered from convulsions, many died in infancy, and several became idiotic. C. Paul states that of 142 pregnancies of lead poisoned women, only ten children survived the third

year; in twenty-seven pregnancies there was only one living child.

Mercurialism.—The children of mirror makers are most often delicate and sickly. According to Hist, the mortality in the first year amounts to 65 per cent.

The deleterious effect of carbon disulphide and tobacco upon the offspring is well attested.

Such are some of the facts of observation which show in the most positive manner that many diseases or predispositions to disease rest upon a demonstrable hereditary basis. The descendants may exhibit the same type of disease as the progenitors, or there may be a transformation of the characters of the parental disease.

The question is whether the hygiene of heredity—by which is meant the elimination of diseases which are transmissible through hereditary influence—is practical. It has been insisted that our knowledge of heredity is too vague and its processes too irregular and uncertain to admit of its application to human beings. While the laws of pathological heredity are subject to manifold exceptions, there is no fact better established than that the individual reproduces himself as he is at the moment of procreation—the syphilitic, the consumptive, the lunatic, the alcoholic, each reproduces his kind.

The most radical preventive measure would be the elimination of the unfit from marriage, but here we approach delicate ground which has always been regarded as the peculiar domain of private rights. The influential motive to marriage is not the improvement of the race. It is not contended that selective breeding should be applied to human beings in order to improve the type. It is hardly probable that the scientific methods which have been successfully applied to the culture of plants and the breeding of animals will ever replace the traditional haphazard methods of human reproduction. Sentiment, rather than science, dominates men and women in their choice of partners in marriage, with no thought of their possible disqualifications as potential fathers or mothers. What is contended is that this principle of selection should be applied to the exclusion from marriage and parentage of certain types the reproduction of which leads to the depopulation and physical deterioration of the race.

In this connection it may be said that heredity gives to race suicide a broader significance than is usually assigned to it. Thousands of children who die before being born, or come into the world with the mark of death upon them, are victims of the ignorance or disobedience of parents to the terrible law of pathological heredity.

Darwin says: "For the sake of the health of the offspring it should be a general law that the parents should be free from a predisposition to those diseases which are proved to be hereditary and which in fact are frequently inherited." Many believe that the remedy lies in legislation, either by requiring a medical certificate of freedom from transmissible disease as a condition of license to marry, or by imposing a civil or penal responsibility upon those who enter marriage when afflicted with certain disorders. Such laws have been engrafted upon the statute books of two or three of our western States. The motive appears to be the protection of the married partner rather than the prevention of disease in the offspring. While such laws

and indirectly have an educative value and may even exert a direct effect upon the marriage of the unfit, they will always remain inoperative until there is created an enlightened public sentiment which will sanction their enforcement.

In my opinion, the solution of this problem of prevention should be approached through education. Liberty enlightened by education is a stronger influence in human conduct than restrictions imposed by law. The diseases engendered through heredity are the result of relations voluntarily entered into by individuals who should know that the conceptional conditions which may determine the health and life destiny of the offspring are largely under personal control. All men and women wish their offspring to be sound and healthy; few men and women know that the birth of a tainted, diseased, or degenerate child is not the "act of Providence," but the fateful expression of their own transmitted tendencies. They should realize that the transmission of life, the creation of a human being, instead of being considered a mere incident of lustful pleasure, often a regrettable accident, is the most important act of their existence, as the new being carries with it the pathological proclivities as well as the potentialities of health possessed by the parents.

The first step should be the education of the medical profession. Applied heredity, or the application of a knowledge of heredity to the prevention of disease, should form an integral, essential part of medical education. Physicians have daily opportunity of observing the laws of pathological heredity, and there is a large amount of material accumulated by the medical profession bearing upon the subject which has never been utilized. The causes which underlie hereditary phenomena should be carefully studied, their significance rightly interpreted, and the resulting knowledge should be popularized for the education of public opinion. It is only by enlightening and hygienically advising the people as to the conditions which fit or unfit men and women for parentage that the vast mass of disease and death projected by heredity into each oncoming generation may be prevented. In order to prevent the wholesale destruction of infant lives or degeneracy and disease in those who survive, it is necessary that children should come of good stock and be born in conditions of vitality and physical soundness. The most essential condition is that the springs of heredity should be kept pure and undefiled by the taint of syphilis, of tuberculosis, of insanity, of alcohol and other hereditary factors in the production of a vitiated progeny.

66 WEST FORTIETH STREET.

SURGICAL ASPECTS OF SOME DIGESTIVE DISORDERS, FROM THE STANDPOINT OF THE INTERNIST.

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Countless sufferers from gallbladder disease, ulcer of the stomach and duodenum, and their secondary crippling effects upon stomach, bowel, and pancreas, are daily being treated for bilious attacks, gastralgia, and dyspepsia with small prospect of permanent relief and with the great danger of

subsequent development of malignant disease of these organs; or, at best, of extreme debility, neurasthenia, and ill health from prolonged starvation and suffering.

Numerous patients with neurasthenia, suffering from nervous dyspepsia, hyperchlorhydria, and the long train of symptoms dependent upon the frequently associated enteroptosis are being operated upon as cases of ulcer of the stomach. Or, as a last desperate chance, these miserable worn-out nervous wrecks who have for years run through the long gamut of medical treatment by a dozen different physicians decide to resort to the court of last appeal, hoping to be either killed or cured by operation.

Unfortunately the majority of this latter class of patients are not relieved by operation, beyond a few weeks or months (psychic effect). In many the conditions are made worse, the neurasthenia exaggerated, new symptoms produced, and discredit brought upon surgery.

Hence, it is all important that a correct diagnosis be made. By this is not meant the exact location or size of a gallstone or an ulcer, but a wise decision as to whether the conditions present will be helped or harmed by surgical intervention. An exploratory incision will often be necessary to decide this point, as in many instances the most skilled and experienced diagnostician will honestly profess his doubt and inability to make an exact diagnosis. It requires a brave and conservative surgeon to refrain from a posterior gastrojejunostomy when the abdomen has once been opened, and a prolapsed and somewhat dilated stomach disclosed, even when no obstruction is found. The internist can easily become excessively enthused over an operation like Moynihan's gastrojejunostomy, with its brilliant results, in properly selected cases, and find indications for this operation too frequently; especially in neurasthenics with prolapsed stomachs, who have long since worn out his patience; and in every ulcer of the stomach which he sees. Prolonged experience with operative cases, however, teaches him wisdom. The furors for stomach and gallbladder surgery of the past few years has done more than cure numerous medically hopeless cases; it has taught the wise surgeon and the observant internist wherein success and failure lie. They both have become more discreet in the selection of cases for operative interference.

The cases which I have examined, studied, had operated in, observed during operation, then followed and studied carefully for months or years when possible, after operation, seem to convey the following facts and lessons. (One must admit that few of us have seen or operated in a sufficient number of cases on which to base accurate statistics.) The cases in which the results have been positively brilliant, and in which the patients have been rescued from prolonged suffering and a miserable existence for themselves and families, and a shortened life, are those cases of dilated stomach, secondary to obstruction at the pylorus, or upper duodenum, with stagation and fermentation of stomach contents, and the attendant belching, vomiting, burning pain and suffering, starvation, and constipation. This obstruction may be due to perigastric adhesions, caused by gallbladder disease, and ulcer

of the stomach and duodenum, or by the cicatricial contraction of an indurated ulcer, or the presence of a malignant or benign tumor, or pyloric spasm caused by the irritation of an ulcer situated near the pylorus.

CASE I.—Operation in pyloric obstruction. F. F. L., educator, fifty-five years of age, Owatonna, Minn., lost in weight from 230 pounds to 171 in the past two years. He presented the classical signs and symptoms of dilated stomach, with stasis due to obstruction at the pylorus; food had remained in his stomach for three days. There was much distress and belching, and vomiting of obnoxious, sour, and fermented material, and a resulting limitation of diet. On exposing the abdomen the outline of a greatly dilated stomach could be made out, extending one and one half inches below the navel, and of great transverse diameter. This fact was confirmed by inflation through the stomach tube. The taking of food relieved the patient for a few hours. Analysis of the stomach contents gave free hydrochloric acid 40, total acidity 76, slight excess of lactic acid. Yeast cells were present, and a few long bacilli. There was a history of indigestion for the past sixteen years, with long periods of relief. There were severe attacks suggesting recurring acute ulcers until three years ago; since this time he has had a constant recurrence of symptoms. There was very severe pain and tenderness in the pit of the stomach. The pain radiated through the gallbladder region and around to the back. Of late the symptoms had been those of stasis, dependent upon an indurated ulcer at the pylorus rather than those of an acute mucous ulcer.

He consulted many physicians, and his case was diagnosticated dyspepsia, notwithstanding the fact that he lived within fifty miles of the Mayos. On April 3, 1906, a Moynihan gastrojejunostomy was done. There was a marked thickening and obstruction of the pyloric ring. No enlarged glands were found, and the diagnosis of indurated ulcer of the pylorus with secondary dilation of the stomach confirmed.

On September 18, 1906, the patient wrote me as follows: "There have been no bad symptoms so far as I know. From the day I was allowed my first meal to this I have not suffered the least pain nor inconvenience from anything I eat, and I have eaten everything desired, even raw onions, cucumbers, fruits of all kinds, green corn on cob, plums, bacon, salt pork, fried eggs, etc. I have no pain, belch a little gas once in a while, but that is getting less and less, no more now than people who think they have good stomachs do. In fact, I feel like a new man, as though I could do something. Have ambition, energy, and feel as though life were worth living."

CASE II.—Pyloric obstruction; operation. F. W. H., male, forty-four years of age, merchant. Patient was a small man, weight 110 pounds, emaciated but not cachectic. He had had trouble with his stomach since twelve years of age, when he had an attack of jaundice; at present he complained of persistent vomiting, even bringing up food which had been in his stomach for three days. There was almost continuous belching of rotten gas, and a general distress over the epigastrium. Food often relieved him for two or more hours, then the distress and other symptoms came on worse than ever. Sour, acid articles caused considerable burning and distress. The previous history of the vomiting of a black material, two years before, and a tarry pitchy material tasting like ink three weeks before, with the symptoms of hyperchlorhydria caused me to suspect a gastric ulcer. The detection of a very tender spot two and one half inches above the navel, and the results of stomach analysis showing hyperchlorhydria, and hyperpepsia with microscopic and macroscopic evidences of stagnation, caused me to

make a diagnosis of indurated ulcer of the pylorus, with secondary dilatation of the stomach.

Operation revealed an old, atrophied, much thickened gallbladder, containing several stones, with a mass of old inflammatory adhesions thrown around the pylorus, and firmly constricting it. The lesser curvature was so much thickened that the surgeon suspected malignant disease. Gallbladder and stones were removed, adhesions around the pylorus released, and to make assurance doubly sure, a posterior gastroenterostomy was done, with a Murphy button.

The patient has been in perfect health ever since, gaining more than twenty pounds in weight, having perfect digestion and leading an arduous business life with great comfort.

CASE III.—Pyloric obstruction unoperated on. E. P., sixty years of age, a man of powerful physique, was in health weighing over two hundred pounds. Patient was examined first six years ago, at which time he had lost over fifty pounds from a chronic digestive trouble. His history and signs were very similar to those stated in the two preceding cases. Stasis, vomiting of large quantities of foul, fermented food, which had been in his stomach many days, continuous belching of foul gas, distress, burning, especially after eating sour articles, and emaciation due to starvation. A diagnosis of dilatation of the stomach (confirmed by inflation) secondary to obstruction at the pylorus was made and a drainage operation advised. The patient refused to consider operation, so I advised daily stomach washing, restricted diet, alkalies, and nux vomica. For four years the patient daily washed out his stomach, by swallowing large quantities of warm soda water, and then vomiting it. He wrote as follows concerning his condition: "I am still rinsing my stomach once a day, as I have done for the past four years, at five p. m. Thus I get the benefit of what I eat. I live on soft boiled eggs, toast, grape nuts, and postum coffee, and in this way I am not distressed, and am as comfortable as any one, and have made a handsome gain of twenty-eight pounds." This patient would have been perfectly relieved by a successful gastroenterostomy. As it is, he will in the end probably be compelled by the gradual constriction of the pylorus to undergo operation. The possibility of cancerous degeneration must also be considered.

A second group of cases in which operative results are often satisfactory are patients suffering with frequent exhausting hæmorrhages, and cases of recurrent ulcers which may have once healed, as a result of careful medical treatment, and then again become active, or in which new ulcers have developed. This may happen a number of times during the course of several years. Finally, the symptoms become very much exaggerated, and are very persistent. The patient, if poor and a laboring man, who cannot afford to be an invalid, desires a treatment which gives him a better chance of permanent cure, and turns to surgery. In such cases the results are often all that could be desired.

CASE IV.—G. F. M., a well developed man of twenty-four, law student. Six years ago patient had symptoms and signs of gastric ulcer, and was treated for these things medically, with apparently good result. All symptoms disappeared for over a year. The symptoms of the trouble now appeared and disappeared several times. They had been persistently present and severe until July, 1905, when he had an attack of lead colic in Leadville. At present he had pain of a gnawing, gripping character in epigastrium, as well as persistent burning and discomfort, and occasional vomiting. The pains were relieved by pressure, or milk, or sodium bicarbonate more than by morphine. Vomit-

ing received the only benefit of this case. He was having a moderate amount of acid, but the results were his constant attention to health and his diet. Analysis of stomach contents showed free hydrochloric acid, 85, combined acid 8, organic acids and acid salt 7. Total acidity, 100. A posterior gastrojejunostomy was done with complete relief from all symptoms, and ability to eat all kinds of food.

The patient wrote from a logging camp in Washington: "There is a decided improvement in my case. I am having better health than at any time in my life; sleep well, eat well, have not vomited since I was operated upon, have no bile, no acid, and no trouble with my bowels. I am five pounds heavier than ever before. I can eat anything they put before me. Can sleep twelve hours without lying on a pillow, and enjoy life much more than I did before."

Though many authorities wisely advise radical medical treatment in the acute mucous ulcers, which are finally diagnosed and brought to a climax by the occurrence of that dramatic event in the course of many such cases, a hæmorrhage, still operative experience proves that many cases improve with great rapidity after a posterior gastrojejunostomy, and are able to eat a great variety of food without symptoms, and regain their strength much sooner than after a medical cure, but we must not forget that the mortality of gastrojejunostomies is not a trifling matter. Results should be strikingly better to cause us to favor operative over medical treatment.

CASE V.—W. F. M., mining man, forty years of age. This patient came into my office immediately after his return from a most strenuous and trying mining trip, looking pale as a sheet and weak as the proverbial rag. He had spent two weeks in the mines of Wyoming and Idaho, staging many miles, riding horseback long distances, climbing up and down shafts and mountain sides, and all the time passing enormous quantities of tarry material by the bowels, and time and again reeling and almost fainting from dizziness and weakness. He had been told that he had liver trouble, and so supposed he was passing bile. His hæmoglobin was 30 per cent., and he complained of nothing but weakness. However, a few questions brought out the fact that he had on several occasions during the preceding weeks, fainted, after going to stool and passing large black evacuations. He had also taken treatment for his stomach, because of pain in the pyloric region, and burning pain between meals and inability to eat sour articles. Many physicians would have advised radical medical treatment. We decided that another severe hæmorrhage would kill the patient, and took the risk of having a posterior gastrojejunostomy done. He stood the operation well, and was home in two weeks. He has since been eating everything, even lemon pie without distress. He is rapidly making blood, and his hæmoglobin will soon be up to normal. True, this patient would probably have gotten well under medical treatment.

Another type of case about which there must always be a good deal of uncertainty is the neurasthenic, enteroptotic patient with an atonic stomach, whose nervous symptoms are really dependent upon an ulcer of the stomach or duodenum, or gallbladder disease. Refusal to operate such a case might doom the patient to many years of indescribable suffering and untellable agony.

If we bear in mind that cases of enteroptosis very frequently develop gastric ulcer, we will less frequently make the remark: "Oh, she only has an attack of neurasthenia or hysteria."

CASE VI.—Mrs. E. C., thirty years of age, a miserable, cachectic, hopeless invalid, and a confirmed neurasthenic, who had been vomiting after every attempt to eat for months. There was almost continuous nausea. She complained of pains in the lower abdomen and back, worse at monthly period. Her various symptoms were supposed to be due to ovarian trouble. I advised operation with considerable hesitation, because of her very pronounced nervous symptoms. Most of the physicians and nurses associated with the case looked upon the patient as a hopeless nervous wreck. Examination demonstrated a prolapsed and dilated stomach, a moderate hyperchlorhydria. On the suspicion that the symptoms might depend on an acute mucous ulcer, although not positively demonstrated, a drainage operation was advised.

Results were marvelous. Vomiting ceased immediately, and in three weeks the patient was up and around, eating everything without distress, sleeping well, and strikingly relieved of her nervous symptoms. She was soon doing all her household work. She was an example of that very large class of doubtful cases where the exaggerated neurasthenia developed upon a gastric ulcer.

Operative Cases Where Results Were Unsatisfactory.

Several of my cases have not been cured by gastrojejunostomy, but may have been made worse in some instances. The failure to secure permanent relief may have been due to faulty technique or to unavoidable abdominal complications such as adhesions. One such case is a man of forty-three, tall and slender, with a moderately prolapsed atonic stomach, but no organic obstruction at the pylorus (occasional stasis of food). Another was a very nervous young woman of twenty-eight, who had suffered for many years with the severe dyspeptic symptoms associated with marked enteroptosis (right kidney, stomach, and bowels), and decided hyperchlorhydria, and frequent stasis of food. In both of these cases there has been an almost constant regurgitation of bile into the stomach, shown by vomiting and stomach washing. In the first this was due to the fact that the loop was turned to the right, and that there were adhesions beyond. An enteroanastomosis has been done, and the regurgitation of bile has ceased. In the second case I have advised an enteroanastomosis which has just been done, but the patient belongs to that large class of enteroptotics with atonic stomachs, and I fear that she will always have dyspepsia and nervous symptoms.

CASE VII.—A third unsatisfactory case, a young woman of twenty, with typical acute ulcer of the stomach, with hæmorrhage, operated upon by a young inexperienced stomach surgeon, chosen by the family. In this case the poor results may be dependent upon faulty surgical technique. A Murphy button was used. The patient, however, improved greatly for a few months, gaining thirty pounds, and becoming able to work. Then the ulcer symptoms returned with renewed severity, and an x ray picture was taken to find the button, which had not been passed. It was located supposedly at the pylorus. A secondary operation failed to reveal the button, or the anastomosis opening. A posterior gastrojejunostomy and enteroanastomosis were now done by an experienced surgeon.

Some nine months later the patient writes as follows:

"I haven't a very good report, as I certainly have suffered at times and often too with the same symptoms which I had before last operation. I still have vomiting spells, vomiting perhaps once or twice and sometimes three times a day for a week or ten days steady, and suffering great pain at that time. It may then be two or three weeks before I have another spell. I have gone five weeks without vomiting. My weight is the same as before my last operation. When I am feeling well I can eat without distress, but when I have a vomiting spell I can't eat anything."

Two other patients did less well than these, as one patient died three days after operation, apparently from acid intoxication, following chloroform anæsthesia, and the other died nine days after operation from exhaustion and persistent vomiting of small quantities of dark blood.

Diagnosis of Ulcer of the Stomach and Duodenum.

In a certain percentage of cases the occurrence of an undoubted hæmorrhage from the stomach and duodenum shown by vomiting of blood, or melæna, renders the diagnosis comparatively easy, if associated with the other symptoms and signs. In a larger percentage of cases one can not depend on this simple guide, as it has not occurred, or has escaped detection. An accurate comprehensive history of the present and previous disease frequently furnishes sufficient evidence for a diagnosis of ulcer. Physical examination and laboratory findings complete the chain of evidence, for or against ulcer. Even then we may be dealing with a case of gallbladder disease or nervous dyspepsia. The signs of an old indurated ulcer and those of an acute mucous ulcer are of course very different. In the former we find chiefly evidences of stasis with a preceding history suggesting acute mucous ulcer. The patient often begins to run down, loses weight, becomes anæmic, and develops symptoms of hyperchlorhydria, feels well until two or three hours after meals when burning pain and gas manifest themselves. These symptoms are relieved by further eating, or by taking alkali if it is simply hyperchlorhydria. Later on the taking of food may immediately cause pain and vomiting; then relief occurs. There is likely to be a localized tender area in the epigastrium. Pain may or may not run through to the back. I have seen undoubted cases of gallstone, proved by operation, where the patients have complained of this radiating pain, while in undoubted cases of ulcer of the stomach it has been absent.

Analysis of a test meal almost always shows a hyperchlorhydria. However, this fact may be misleading, as I have frequently found hyperchlorhydria in gallbladder disease. Examination of the stools for occult blood and the stomach contents for occult and fresh blood has a limited field of usefulness. A small amount of fresh blood is often present in the stomach contents, caused by the irritation of the stomach tube. For the general practitioner, whose patient is not in the hospital, it is almost useless. If the patient can be kept in a hospital, and the diet properly controlled, it may or may not prove a very useful aid in diagnosis. Demonstration of the size, position, and shape of the stomach by inflating with air through the stomach tube, is important in chronic cases. Effervescing powders are often used, but are more danger-

ous and less instructive. The easiest and surest method of determining stasis is to wash the stomach out thoroughly in the morning before breakfast, the patient having eaten a fairly large meal the night before, including raisins. The presence of lactic acid, yeast cells, sarcines, and Oppler-Boas bacilli is also good evidence of food stagnation. Advice for or against operation should depend in most instances on whether stasis is due to mechanical obstruction of the pylorus or to the temporarily weak musculature of the stomach, as in atonia gastrica, or is dependent upon the malposition of the organ as in extreme cases of gastropotosis, or enteropotosis.

If an experienced, capable stomach surgeon has been selected, the decision upon the kind of operation to be done, should be made after the abdomen has been opened, and the actual pathology determined by careful inspection and palpation. It may be a posterior or anterior gastroenterostomy, with suture or button; it may be an excision of the ulcers or ulcer bearing area, or a plastic operation on the pylorus, or even a resection of most of the stomach. Occasionally it will be a gallbladder or appendix operation, instead of a stomach operation as expected. Again it will be simply sewing up the abdomen. There should not be a predetermined decision to do a gastroenterostomy, no matter what the findings are.

Conclusion.—In conclusion, I wish to urge upon all physicians that it is their duty to insistently and persistently recommend and advise exploratory operations, when a conscientious, intelligent, and scientific examination of a serious case leaves doubt as to the diagnosis and treatment. This recommendation will apply most often to dyspeptic cases, in which there is a suspicion of cancer; also to obscure conditions in the right hypochondrium, in which gastric ulcer and gallbladder disease are suspected, but not proved. The dangers of exploration are much smaller than those of procrastination. Thousands of lives will be saved, awful suffering assuaged, and the sum total of human happiness wonderfully increased, when the exploratory incision becomes the routine practice in such cases.

430 MAJESTIC BUILDING.

EXPERIMENTAL IMMUNITY TO COLON AND TYPHOID BACILLI.

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Introduction.—In several papers from the Hygienic Laboratory of Michigan University, a list of which is given at the conclusion of this article, the effects of bacterial and other proteids and their split products on animals have been reported. A brief statement of some of the most important results is given here in order that what is to follow may be clear.

For some years we have grown bacteria in massive cultures and have been able to obtain bacterial cellular substance free from admixture with other material, and in large amount. In this way we have obtained and studied the cellular substance of both pathogenic and nonpathogenic bacteria, such as:

Salmonella typhi, *Salmonella dysenteriae*, *Bacillus prodigiosus*, *Bacillus anthracis*, *Bacillus coli*, *Bacillus proteus vulgaris*, *Bacillus subtilis*, *Bacillus plicatilis*, *Bacillus megatherium*, *Bacillus cereus communis*, *Bacillus typhosus*, *Bacillus anthracis*, *Bacillus tetradymus*, *Bacillus anthracis*, and *Mycobacterium tuberculosis*. We had found that the cells of each of these organisms, after thorough extraction with dilute salt solution, alcohol, and ether, leave as a residue a proteid body, still possessed of the form of the living cell, and found it to be poisonous when injected subcutaneously or intraperitoneally in animals. It must be understood that these cellular substances contain no living bacteria, but consist of proteid material giving all the color reactions for proteids. All are insoluble, and we have generally designated them as "crude bacterial poisons." They can be boiled in water without appreciable loss in their toxicity. It is an interesting fact that the toxicity of the cellular substance of the several bacteria is not in proportion to the pathogenicity of the organisms. Thus, the most highly poisonous of these bodies is that obtained from *Bacillus prodigiosus*, while among the less active are those obtained from *Bacillus anthracis* and *Bacillus tuberculosis*. This convinces us that the pathogenicity of a bacterium is not determined by the potency of the poison which it produces, but by its capability of multiplying in the animal body. If *Bacillus prodigiosus* could multiply in the body of man it would be highly pathogenic and speedily fatal in its effects. On the other hand, *Bacillus anthracis* and *Bacillus tuberculosis* owe their pathogenic properties not to the potency of the poisons they produce, but rather to their ability to live and multiply in the animal body.

These bacterial, cellular substances, or as we have designated them, "crude bacterial poisons," can be split up by dilute solutions of alkali into two portions, one of which is poisonous, while the other is inert in even large doses. Practically in this splitting up process we employ alcoholic solutions of alkali because the poisonous portion is freely soluble in absolute alcohol, while the nonpoisonous portion is insoluble in this menstruum. This enables us to secure an easy and satisfactory separation of the two portions. The details of this method have been given in preceding papers, and will not be repeated here.

With this introduction we will pass on to a brief description of the two portions into which the cellular substances of the colon and typhoid bacilli have been split, and then discuss our attempts to secure immunity with these split products. However, before doing this, we should state that other proteids, both animal and vegetable, have also been split up by us by the same method into poisonous and nonpoisonous portions. This has been done with egg white, serum globulin, casein from milk, and edestin obtained from hemp seed. It seems that all true proteids consist of poisonous and nonpoisonous constituents and that these may be separated by our method. This is worthy of note, as showing the possibility of the development of poisonous bodies from proteids. The profession has long been of the opinion that the proteid molecule may yield among its cleavage products highly active poisons, but until our recent work along this line this belief has failed

to obtain any other support than the use of a few theoretical possibilities. Now, then, we know that proteid poisons may be derived from such foods as the white of egg and the casein of milk, as well as from bacterial sources, the way may be opened up for the solution of many problems in the study of not only the bacterial, but the autogenous diseases as well.

THE PROTEID GROUP

The soluble poisons obtained from all the bacterial and other proteids with which we have worked are not identical, but are similar, and may be regarded as constituting a group of proteid derivatives. They may not be proteids themselves, but are derived from proteids. It is still a question whether or not there is any true proteid which so long as it retains all of its proteid characteristics is a poison, but there is no longer any possibility of a doubt that highly active poisons may be obtained from proteids, bacterial, animal, and vegetable. When, therefore, we speak of "proteid poisons" we mean poisons derived from proteids, and with this understanding we shall employ the words "proteid poisons." These exist as component parts of the proteid molecule from which they can be obtained by chemical reagents in the retort, and from which they may be set free in the animal body. Ultimate analyses which we have made, but which will not be reported in this paper, show that the different proteid poisons which we have obtained are not identical. We are of the opinion that a closer and more exact study will show that they can be divided into groups by differences in their nitrogen content, and possibly by other differences as well. They are not true proteids, we know, because in the first place they are freely soluble in absolute alcohol, and this is not a property of unbroken proteids. In the second place, while they respond to most of the proteid color reactions, there is one of these to which they do not respond. This is the Molisch test, which the true proteids, for the most part at least, give and which is due to the presence in the proteid molecule of a carbohydrate group. From our work we are convinced that there is no carbohydrate group in the poisonous portion derived from the proteid molecule, certainly no carbohydrate which responds to the Molisch test. It is true that all proteids do not contain a carbohydrate group, at least not one which responds to the Molisch test. This is true of edestin, found in hemp seed, and which we have shown contains a poisonous group. Moreover, some proteids are soluble in strong alcohol, though we know of none soluble in absolute alcohol unless our poisonous split products be proteids. The whole question of what constitutes a proteid; what properties a substance must possess in order to be classed as a proteid, and what properties, positive or negative, may exclude it from the proteids; all of these are questions which might be discussed, but probably to no profit, at present.

Still another difference from the original proteid is found in the absence of phosphorus from the poisonous derivative. When the proteid molecule is split up by our method, all the carbohydrate and all the phosphorus of the original substance are now found in the nonpoisonous portion, while these substances are altogether wanting in the poisonous de-

derivatives. Whether or not this will continue to hold good as other proteids are examined, we of course cannot predict. We are not surprised at the absence of carbohydrate from the poisonous derivatives from the proteid molecule, but we are somewhat surprised at the absence of phosphorus.

We do not allege that the poisonous proteids, as we have obtained them, are chemically pure; indeed, we are quite sure that they are not, and we have designated them as "crude soluble poisons;" "crude" because we know that they are not chemically pure, and "soluble" in contradistinction to the cellular substance, which is poisonous, but insoluble. The proteid poisons, as we have obtained them, are soluble in absolute alcohol and in water, more freely and perfectly in the former than in the latter; the alcoholic solutions being perfectly clear and transparent, while the aqueous solutions are opalescent. Their aqueous solutions are distinctly acid to litmus and slowly decompose sodium bicarbonate.

The poisonous effects of these proteid derivatives are prompt, striking, and characteristic. The poisonous dose depends upon the degree of purity secured in the preparation and in the method of administration. The animals which we have used have been guinea pigs, rabbits, goats, and frogs. The methods of administration have been intraabdominal, subcutaneous, and intravenous. The purest preparation which we have secured killed guinea pigs when administered intraabdominally in doses of eight milligrammes. The fatal intravenous dose is about one sixth, and the subcutaneous about twice that of the intraabdominal one.

The symptoms induced by these poisonous proteid derivatives are striking and characteristic, and usually consist of three distinct manifestations. The first is one of peripheral irritation, and shows itself in general uneasiness and frequent scratching. The second stage is one of exhaustion, or partial paralysis, during which the animal generally lies on the abdomen, and often it is quite evident that it is not able to keep its feet under it. The paralysis is never complete and varies greatly in individuals. The third stage is characterized by clonic convulsions, more or less violent. Animals may appear very sick in the second stage, but often recover, and it is rare to see one die without convulsions, though it does occur sometimes. The convulsions and death are due to asphyxiation.

While the fatal dose of the purified poison is small, there is a great difference between it and the smallest amount necessary to induce symptoms of the first and second stages. With one preparation, 70 milligrammes of which constituted the minimum fatal dose, five milligrammes developed the first and second stages characteristically, and the animals seemed to be very sick. The action of these poisons is prompt; the first symptoms often develop within from five to ten minutes, and when a fatal dose is given death results within one hour, usually within forty-five minutes, and with large doses it may occur within ten minutes. The symptoms are the same whether the poison be derived from a bacterial, an animal, or a vegetable proteid. This demonstrates that all these proteids contain similar poisonous groups. As we have stated, determination of their nitrogen content shows that these poisons are not

identical in chemical composition, but physiologically they are similar. Death in all cases is due to failure of respiration, and the heart continues to beat for some minutes after respiration has ceased. When the dose is not too great and death does not occur too speedily the temperature rapidly falls, and may drop below 94° F. before death, but like certain other poisons that have a like effect on the temperature when the dose is several times the minimum fatal, or when the poison is administered intravenously, no fall in temperature is detectable.¹

Attempts to induce immunity with the isolated poisons obtained from the proteids of the colon and typhoid bacilli have been recorded in previous papers, and we will not repeat them here, further than to say that all our endeavors to produce an active antitoxine have so far met with but little success. It is true that by repeated injections of nonfatal doses at intervals of from three to five days we have been able to so far advance the resistance of the animal that it will bear from two to three times the fatal dose of living cultures, but even this low degree of immunity is not specific, and it can be secured with the poison split off from egg white as well as with that obtained from the specific bacillus. We prefer at present at least to regard this slight immunity as increased tolerance rather than as a real immunity. Besides, these poisons are too active and too prompt in their action to be used practically in inducing immunity. A considerable percentage of the animals are killed in the process and the degree of increased tolerance is too small to justify the risk to life. It is interesting to note that when administered by mouth these proteid poisons have no visible effect upon experimental animals. This is not, we believe, due to destruction of the poison by the digestive juices, but rather to its slow absorption, the ultimate effect upon the animal depending not so much upon the actual amount of the poison introduced into the circulation as upon the rapidity with which it is introduced. It should be stated that all of these poisonous proteid derivatives slowly diffuse through collodion sacs.

It is altogether within the range of possibility that these poisons in small amounts are formed in the alimentary canal, and that they are accountable when absorbed in very small quantity for the increased resistance to the infectious diseases observed in individuals and races that consume large quantities of proteid food, and when absorbed in larger amounts they may possibly be responsible for some of the so called autogenous diseases to which these same individuals or races seem to be prone. This, however, needs more extended study than we have been able to give it up to the present time. This is merely a suggestion, and possibly it may demand consideration in the study of the proper amount of proteid which should enter into the daily ration of man, a question which is receiving considerable attention just now. It should be borne in mind that vegetable, as well as animal and bacterial proteids, yield these poisonous derivatives, and these studies which demonstrate the existence of highly poisonous groups in the proteid molecule do not, so far as we see, furnish any argument for vegetarianism, unless

¹ For a more detailed account of the action of these proteid poisons, see paper No. 17 in the bibliography at the close of this article.

It is shown that the soluble portion of the bacillus gives all the reactions which are expected of it. In other words, the vegetable proteids are capable of turning out products with a proportion of poison as the animal proteids.²

The Soluble Portion

When a proteid from a bacterial, animal, or vegetable, is split up by an alcoholic solution of alkali after our method, the part insoluble in the alcohol is quite as interesting as the soluble portion. The latter is poisonous while the former is not, but the nonpoisonous part is specific in its effects, while the poisonous portion is not. This seems to be quite generally true, but our experiments have not covered as yet a sufficient variety of proteids to enable us to say how generally it is true. We have gone far enough, however, to say that it is true of some of the animal and vegetable proteids, as well as of some of the bacterial proteids, and we are justified in saying that it is not limited to the bacterial proteids and, while not wishing to trespass upon what we hope to make the subject of another paper, we will give one example. We have split up egg white just as we have the bacterial proteids into poisonous and nonpoisonous portions. Now a single injection of any reasonable amount of egg white into the abdominal cavity of a guinea pig has no recognizable effect upon the animal, but if one injection of this kind is given and a certain interval of time be allowed to elapse, as Rosenau and Anderson have shown to be the case with blood serum, a second injection of egg white will seriously affect the animal and probably kill it. The first injection has sensitized the animal to egg white. Now, we have found that the first or sensitizing dose need not be the unbroken egg white, for the nonpoisonous portion of egg white has the same effect. It sensitizes the animal to the unbroken egg white, and this effect is specific. The animal is sensitized to egg white, and not to any other proteid. The nonpoisonous portion of the proteids of the colon and typhoid bacilli give each a specific immunity to the bacillus from which it is derived. This immunity is strictly specific, the nonpoisonous part of the colon bacillus gives immunity to the colon bacillus, and not to the typhoid or any other microorganism. However, before taking up this form of immunity we must say something about the general physical and chemical properties of these bodies.

When the bacterial, cellular substance is extracted in the retort at 78° C., with a 2 per cent. solution of sodium hydroxide in absolute alcohol, it is split up into poisonous and nonpoisonous portions. The former is in solution in the alcohol, and the latter is in deposit. The nonsoluble portion is placed in a Soxhlet apparatus and extracted for several days with absolute alcohol in order to remove any of the poison which may be present and the excess of alkali which we have added. After this, the substance is powdered, in which form it may be kept indefinitely. It gives all the proteid color reactions. It may give the Millon test, to which the poisonous part responds so promptly and perfectly, quite imperfectly, and indeed we have some samples which do not give this

test at all, and therefore, it is to be presumed that the Millon test as given by the nonpoisonous part may be due to minute traces of the poison that have not been removed. Of this, however, we will not be sure until the nonpoisonous portion can give a prompt and perfect response to the Molisch test, to which the poisonous portion does not respond. The fermenting portion of the nonpoisonous portion of the original molecule. This carbohydrate is probably a pentose, and makes up more than 40 per cent. of the nonpoisonous portion of the colon bacillus. Another striking chemical difference between the poisonous and nonpoisonous portions lies in the fact that the former is free from phosphorus, while the latter contains all of this element formerly existing in the original proteid molecule. These marked chemical differences lead us to believe that by our method we have actually split up the proteid molecule along a certain definite and natural line of cleavage, and that our products are not mere degradation substances, but are composed of well defined and natural atomic groups existing originally as components of one complex molecule. The nonpoisonous portion is not, however, a single body, but is composed of two or more substances. It is partially soluble in water; the insoluble part has no special interest to us in this paper, inasmuch as it has not been used in our experiments upon immunity. The soluble portion is still composed of two or more substances, but inasmuch as the whole of the part soluble in water has been used in the experiments to be given later, we will not detail the separation of its constituents. The nonpoisonous powder is put with water in a bottle and agitated for some hours on a mechanical shaker, after which it is filtered through porcelain. The water in which it is dissolved contains 0.5 per cent. carbolic acid, and when properly filtered this solution keeps indefinitely. At least, we have some that has been kept in a glass stoppered bottle, frequently opened, for two years, and there has been no bacterial growth nor any recognizable deterioration in its protective effect upon animals. Our stock solutions contain in each cubic centimetre the soluble portion of 50 milligrammes of the nonpoisonous portion, and with such solutions our experiments have been made.

In paper No. 18, V. C. Vaughan, Jr., has shown that the nonpoisonous portion of the colon bacillus gives immunity to the living organism, and that this immunity is specific. Since the publication of that paper the work has been continued, and the object of this article is to report this additional work and to add that done with the nonpoisonous portion of the typhoid bacillus.

It will be easily understood that in a study of this kind many lines of work are to be pursued. The size of the immunizing dose, the frequency with which it should be repeated, the optimum interval between the immunizing doses and between the last immunizing dose and the inoculation, the degree of immunity secured and the period of its continuance, are some of the many points that must be considered in a research of this kind. We have by no means exhausted this investigation, but we may be allowed to report progress.

The Production of Immunity with the Nonpoisonous Portion of the Colon Bacillus.—As we have

statement, paper No. 18 deals with this subject, and we do not care to repeat the statements there made except so far as such a repetition may be necessary to a proper understanding of what we have to add. We will therefore summarize the results of the work reported in paper No. 18 as follows:

1. Guinea pigs treated at intervals of from three to four days with intraabdominal injections of the colon residue acquire an active immunity to at least eight times the ordinary fatal dose of the living bacterium.

2. The degree of immunity secured does not depend so much upon the amount of the residue or nonpoisonous portion that has been injected as upon the number of treatments and the interval of time over which they have been continued.

3. The length of time over which the immunity continues is rather short in the case of animals that have received a large amount of the residue in a few doses continued over a short period.

4. Rabbits that received from two to three injections of one half gramme each of the residue acquire an immunity to quantities of the living bacillus that kill the controls within five hours.

5. The immunity induced by the colon residue or nonpoisonous part is specific, and previous treatments of animals with the residues of egg white, peptone, and the typhoid bacillus give no immunity to the colon bacillus.

In continuing this work we decided in the first place to ascertain whether or not a single dose of the residue gives any immunity; if so, what degree of immunity does it afford and how long does it continue?

The number of immunizing doses given in the work reported in paper No. 18 ran from three to nine, and the special object of the work here reported is to ascertain the effects of a smaller number of immunizing doses.

TABLE I.

These animals had one dose of 50 mg. of the residue, as the nonpoisonous portion is designated. The protocol number, the weight of the animal, the interval in days between the administration of the residue and the inoculation with the twenty-four hours beeftea culture of the bacillus, the amount of the culture and the result are shown:

Protocol No.	Weight.	Interval. Days.	Amount given. C.c.	Result.
224	100	1	5	Recovered.
225	120	3	5	Recovered.
226	105	1	5	Recovered.
227	100	1	5	Recovered.
228	115	7	5	Died.
229	90	9	5	Recovered.
270	600	11	3	Recovered.
328	345	21	2	Recovered.
297	465	27	1	Died.
299	395	27	4	Died.
210	625	27	3	Died.
211	185	28	3	Died.
139	240	36	3	Recovered.
140	250	40	3	Died.
141	250	42	2	Died.
142	255	42	2	Died.

In studying these results it will be well to consider the minimum fatal dose as the unit, which in case of the cultures used in these experiments is 1 c.c. of the twenty-four hour beeftea growth, and we will regard the animal that succumbs to 2 c.c. as having practically lost its immunity. With this measure it will be seen that a single dose of 50 mg. of the colon residue gives to the animal a temporary

immunity of at least 5 units, which is in force twenty-four hours after the treatment, and continues for at least four days, but has begun to disappear by the seventh day. However, some slight degree of immunity continues up to the thirty-sixth day, but practically all is lost by the fortieth day.

TABLE II.

These animals had a single dose of 25 mg. of the residue. The data are the same as given in Table I.

Protocol No.	Weight.	Interval. Days.	Amount given. C.c.	Result.
330	460	1	5	Recovered.
331	300	3	5	Died.
332	225	7	5	Died.
333	290	9	2.5	Recovered.
334	235	11	2	Died.
335	360	14	1	Recovered.

Comparing Tables I and II it will be seen that the immunity given by 25 mg. of the residue, although it may be as great as that given by 50 mg. at the end of the first twenty-four hours, declines more rapidly and is less at the end of three days, and continues to be less at eleven days. The only element of doubt that we can see in these conclusions lies in the small size of all the animals, save No. 1 used in Table II. However, we have not found that size or weight of guinea pigs are important factors, provided, of course, that the animals are in good condition, in influencing the result after inoculation with the colon or the typhoid bacillus.

TABLE III.

These animals had from two to three treatments, receiving each time 50 mg. of the residue. These treatments were at intervals of three days. The protocol number, the weight of the animals, the number of treatments, the total amount of residue given, the interval in days between the last treatment and the inoculation, the amount of the culture twenty-four hours old, and the result are given:

Protocol No.	Weight.	No. of treatments.	Amount of residue. Mg.	Interval. Days.	Amount of culture. C.c.	Result.
270	600	2	100	3	3	Recovered.
271	600	2	100	3	4	Recovered.
212	520	2	100	3	3	Recovered.
213	520	2	100	3	4	Recovered.
272	530	3	150	5	4	Recovered.
273	540	3	150	5	5	Recovered.
274	475	3	150	7	6	Recovered.
278	580	3	150	7	6	Recovered.
280	615	3	150	7	6	Recovered.
214	585	3	150	12	5	Recovered.
215	600	3	150	12	6	Recovered.
216	485	3	150	12	6	Recovered.
217	530	3	150	12	6	Recovered.
218	475	3	150	12	7	Recovered.

Comparing Table III with Tables I and II it is plainly evident that this immunity induced by two and three doses at intervals of three to four days is greater in degree and more lasting in its effects than that produced by a single injection. This confirms the conclusion reached by the writer of paper No. 18, but at the same time this additional work shows that a single dose may serve to furnish protection against at least five times the ordinary fatal dose for a few days and against twice the fatal dose for one month.

TABLE IV.

These animals received a single dose of 100 mg. of the typhoid residue. The protocol number, weight of animal, interval between treatment and inoculation, amount of twenty-four hour culture given, and the result are shown:

Protocol No.	Weight	Days	Amount of residue, C.c.	Result
201	350	1	1	Recovered.
202	350	1	1	Died second day.
203	350	1	1	Died.
204	350	1	1	Died.
205	350	1	1	Died.
206	350	1	1	Died.
207	350	1	1	Died.
208	350	1	1	Died.
209	350	1	1	Recovered.
210	350	1	1	Died.

TABLE V

These animals received a single dose of 50 mg. of the typhoid residue.

Protocol No.	Weight	Days	Amount of residue, C.c.	Result
211	350	1	1	Recovered.
212	350	1	1	Died.
213	350	1	1	Died.
214	350	1	1	Died.
215	350	1	1	Died.
216	350	1	1	Died.
217	350	1	1	Died.
218	350	1	1	Died.
219	350	1	1	Died.
220	350	1	1	Died.

TABLE VI

These animals received two and three immunizing doses of the typhoid residue. The protocol number, the weight, the number of immunizing doses, the interval in days between the last treatment and the inoculation, the amount of culture twenty-four hours old, and the result are given:

Protocol No.	Weight	No. of treatments	Amount of residue, Mg.	Interval, Days	Amount of culture, C.c.	Result
221	375	2	100	3	2	Recovered.
222	495	2	100	3	2	Died.
223	650	2	150	5	2	Recovered.
224	480	2	150	5	2	Recovered.
225	495	2	150	5	2	Recovered.
226	605	2	150	7	4	Recovered.
227	665	3	150	13	4	Recovered.

The minimum fatal dose of the twenty-four hour culture of the typhoid bacillus employed in this case is 0.5 c.c. It will be seen from Table IV that a single dose of 100 mg. of the residue gives the animal an immunity of six units at the end of twenty-four hours, and that the immunity was less than eight units at that time. On the third day, the immunity was found to be diminishing, but on the sixth day the animal bore twice the fatal dose. The animal which received eight units at the end of the first day evidently was close to the border line, because it did not die until the second day, and the normal time for an untreated guinea pig to live after receiving the minimum fatal dose is less than twelve hours. Table V shows that a single dose of 50 mg. is quite as efficient as one of 100 mg. Table VI indicates that multiple immunizing doses give a higher degree and a more lasting immunity than that secured by a single dose.

Theoretical Considerations and Conclusions.—We wish to offer certain theories that we have reached after making these experiments. In order to save space we will condense our views as follows:

1. All the proteids with which we have worked contain a poisonous group, and the probabilities are that this is true of all proteids, be they bacterial, vegetable, or animal.
2. Proteids may be split into poisonous and non-poisonous groups, either artificially in the retort or in the animal body.
3. The splitting up of the proteid in the animal body is due to a proteolytic ferment which is the product of certain cells, probably the mesothelial cells that line serous membranes and the bloodvessels.
4. This ferment is specific for the proteid which calls it into existence.
5. Our conception of the origin and nature of these specific ferments is as follows: The cell is

made up of molecules, the molecules consist of atoms, and the atoms of electrons. The molecule may be thought of as a sphere, composed of atoms, protons, and electrons. These atoms are harmonious and rhythmic motion. The molecule of the foreign proteid introduced into the body has a structure similar to that of the cell molecule, and when one is brought within the attractive range of the other, one or the other, or both, must undergo certain disturbances. Suppose that an atomic group is split off from the animal cell and enters the attraction sphere of the molecule of the foreign proteid, then the harmonious arrangement of the atoms and electrons of the latter will be affected; indeed the molecule may be disrupted as completely as it is in the retort under the influence of dilute alkali.

Our residues evidently have the same effect on the cells of the body that the proteids from which they come do, and in this way we may explain the specific action of the residues. The special group broken off from the cell molecule depends upon the composition of the proteid which comes within its attractive sphere, and it seems that our residues contain that portion of the molecule of the foreign proteid which possesses this property of bringing into existence, or rather of activating, its own specific ferment. The ferment is, according to our conception, a portion of the animal cell, an atomic group within the cell molecule, and does not become a real active ferment, or it is not activated until the foreign proteid comes within its sphere of attraction. It occurred to us that if this theory has much of truth in it we might test it. We thought that the introduction of a small portion of the residue might give some immunity immediately. We therefore injected doses of 25 mg. of the colon and 12.5 milligrammes of the typhoid residue into the abdominal cavity of guinea pigs, and 30 minutes later inoculated these animals intraabdominally with living cultures, and found that the colon animals had in that short time acquired an immunity of five units and the typhoid one of six units. However, we found that larger immunizing doses did not give us results so good, and this is easily explained by supposing that this ferment set free or activated by the residue is in part used up in its reaction with the residue itself. The reason why multiple doses repeated at intervals give us a higher degree of immunity than single doses may be due to more cells being acted upon or to the accumulation of the ferment in the blood. The theory of the modus operandi of the residue which we have offered is tentative, and we hope to be able to investigate it further.

It will undoubtedly occur to the reader, as it has to us, to ask the question how it is that the residue sensitizes or activates, while the bacillus itself, living or dead, has no such effect or at least is not nearly so effective. The only answer that we can suggest to this question is that in order to be effective in its action the sensitizer must be in solution and that being in this state it reaches every part of the circulatory system in a few seconds.

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A CASE OF INTERMITTENT CLAUDICATION.

By JAMES E. TALLEY, A. B., M. D.,
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The articles on intermittent lameness by Putnam, Walton and Paul, Burr, Riesman, Hunt, and others which have appeared during the last few years, review the subject so thoroughly as to make any new effort in that direction unnecessary.

CASE.—The patient was a robust and phlegmatic man of sixty, weight 198 pounds, five feet ten inches in height. Five brothers were dead, one each of apoplexy, pneumonia, asthma, and ulcer of the throat, whether cancerous or tuberculous is not clear; one sister died of tuberculosis; he had three brothers living and well. The patient had six living, healthy children. Had always been a free user of tobacco and alcohol. No venereal disease. He was born in New Jersey and began working at brick making at sixteen. He had during childhood varioloid, malaria, and chorea. When twenty-one, and in good health, he went to Nevada and worked in a silver mine. While there he got his feet so badly frozen that he could work but little during that winter. After being in the mines two years he contracted lead poisoning; his legs and feet were not affected, but his arms and hands were so paretic as to be useless. He made a good recovery, but about five months later he went to Arkansas,

where he was supposed to have had arsenical poisoning, the attack being chiefly gastrointestinal. This illness lasted for six weeks. He next worked in quick silver mines and in a short time became salivated. After this he returned East and began brick making again, working during a part of the time in water up to his waist, but was in good health up to 1899.

The first symptom of the present trouble, which began in 1899, was a tired feeling in the soles of the feet, which was soon succeeded by a burning sensation. At this time the legs and later the feet were somewhat oedematous, but this disappeared under massage and galvanism. In the winter of 1900 a small ulcer formed on the right heel which persisted for eleven weeks. During this time the feet began to feel numb and became very white on exertion. The following summer the normal color returned, but the numbness persisted. In the winter of 1901 the whiteness of the syncope on exertion was first followed by occasional engorgement, the feet becoming very red, swollen, and painful at rest. During the winter of 1902 an ulcer formed on the left great toe at the metatarsophalangeal joint, but this healed. In the fall of 1903 an ulcer formed at the corresponding point on the right foot, and later on the third toe. These gangrenous ulcers did not heal but spread, so that he was admitted to the Presbyterian Hospital in March, and an amputation at the metatarsophalangeal articulation was done and the tendon Achilles divided subcutaneously at the same time. The flap did well for a few days, and then its edges began to slough, and though the sloughing was not deep it was about six months before the final healing. Later the patient got around on crutches, and in a short time was able to wear his shoe and go about to some extent unaided. Examination of the arteries of the amputated part was made by Dr. Steele and Dr. Foulkrod, who reported that while the arteries were easily dissected out, they were very friable. The microscopic section showed an endarteritis. Near the gangrene the intima, media, and adventitia were all blended in one hard mass, the cell nuclei having disappeared.

During the last three years no gangrene had reappeared, but the inability to walk or stand long on the feet had increased. During warm weather the legs and toes burned and the warmth of the bed had the same effect, so that he had often to lie with his feet uncovered. One minute's moderate elevation was enough to make the remaining foot entirely bloodless and when brought to the floor again the member rapidly became congested, at first of a cherry, and later of a plum color. On attempting to walk for a square or so, there was felt in the legs and feet a sensation as if "walking on briars," which was followed by great numbness and whiteness of the feet. He had often to sit down, and, as he expressed it, kick his heels until sensation returned. About a year ago a trophic condition like onychia developed. Suppuration appeared around and beneath the nails, and they dropped off one after the other. This was followed by the growth of new nails, which were very thick, rough and generally hypertrophied. Just recently this same condition had returned, the great toe nail had dropped off and a new one was forming, and the middle one was almost off.

On examining the patient at the present time, one was struck by a mottled, brownish discoloration of the skin on the legs, which was perhaps due to the repeated congestions following effort, though there were no areas of marked venous dilatation; and by the flatness of the arch of the remaining foot, which was also true of the amputated foot. On examining the arteries the right femoral was found to pulsate much more strongly than the left, and there appeared to be an entire absence of pulsation in the popliteal, dorsalis pedis, and posterior tibials on both sides. The regular

tering into its formation may lose their cubical shape and assume the appearances of an ordinary pavement epithelium. As already observed a uterus thus abnormally circumstanced may continue to excrete periodically a menstrual discharge.

The promulgators and supporters of the denudation theory of menstruation assert that in association with the phenomenon of menstruation there is a new formation of bloodvessels immediately underneath the epithelium, that the mucosa to a greater or less depth undergoes an amyloid or hyaline degeneration, that into this structure blood is extravasated, and that immediately thereafter the epithelium gives way, the integrity of bloodvessels is destroyed and a greater or less amount of the mucosa with other debris is cast away. If this wholesale destruction of tissue, or a modicum of it, takes place it is impossible to believe that the greatly stretched and disadvantageously circumstanced endometrium of an inverted uterus could time after time undergo regeneration and reinstate its vascularity by producing new bloodvessels. Dilaceration of the denuded surface would result, and the tissues would never again be enclosed by a new epithelium.

What happens, however, in inversion of the uterus and in hæmatometra (the endometrium in both cases being more or less markedly stretched) is I affirm in keeping with a secretory or rather an excretory theory of menstruation.

18 GORDON SQUARE.

ANÆMIC INFARCTION OF THE ADRENAL WITH THROMBOSIS OF THE VEINS.

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(From the Pathological Laboratory, Bellevue Hospital, New York.)

A review of the subject of infarction brings to light only a few cases in which this pathological condition has been described as occurring in the adrenal. Furthermore, the rarity of this lesion would seem to be indicated by the fact that the standard works in pathological anatomy make little or no reference whatever to it, nor in fact do any of the larger systems of medicine. For example, in Nothnagel's *System* (1) is found the following statement: "Anæmia and anæmic necrosis very rarely occur (in the adrenal) due to the very abundant blood supply." Orth (2) mentions thrombosis of the veins and capillaries of the adrenal as a rare occurrence, but makes no reference to a consequent necrosis. Duckworth (3) in the *Twentieth Century Practice*, says "embolism of the capsular arteries has been met with, and is probably always associated with embolic processes in other arterial tracts of the body." Rolleston (4) mentions the occurrence of embolism, and speaks of frequent hæmorrhage into the adrenal, associated with trauma, or with rupture of abdominal viscera, but does not mention infarction. Karakascheff (6), however, reports in a recent paper on the pathological anatomy of the adrenals in its relation to Addison's disease, two cases of infarction of the gland following thrombosis of the adrenal vein. In one of these cases the right adrenal vein was represented only by a fibrous cord and the adrenal gland, which had evidently suffered infarction at the time the

occlusion of the vein occurred was found to have lost all its functional cells and to consist merely of a mass of necrotic debris and fibrous tissue in which the outlines of the original cortex and medulla could be faintly traced. The left adrenal vein contained a fresh thrombus completely obstructing its channel, and the adrenal gland was greatly enlarged and infiltrated with a bloody fluid, the medulla being on section brownish red, while the cortex was opaque yellowish red in color. Microscopically the cells of the cortex as well as those of the medulla were found to have undergone a hyaline necrosis, the intervening capillaries having fused with the epithelium and the connective tissue to form a structureless eosin staining mass. Toward the periphery numerous leucocytes had wandered into the tissue. In the second case there was a puerperal infection with multiple thrombi in the veins. Both adrenal veins were thrombosed, but the thrombus in the left did not completely occlude it. The right adrenal was almost entirely necrotic and in some places very hæmorrhagic, while in other places it was bright yellow and homogeneous in appearance. Microscopically all the veins were filled with thrombus masses. The parenchyma, except in the extreme periphery, was necrotic, and the cells fused together into a formless hyaline mass.

If one studies the reconstruction of the adrenal (5), it is easy to see why infarction of that organ is a rare condition, for the venous and arterial anastomoses are most complex; indeed it would seem that only an absolute closure of one of the main arteries or veins could lead to necrosis of the parenchyma.

Another case, is that reported by Woolley (7) in the *Journal of Medical Research*. The findings in his case, in a child, 11 months old, were as follows: "The adrenal itself was slightly enlarged and firm, but very dark, almost black in appearance, as from hæmorrhage. On section the lines of the cortex and medulla could be seen with difficulty, and the entire substance of the gland was of practically the same consistency, and of the same dark color. In the medullary portion and corresponding to the site of the central vein, was a large, round, whitish mass, which had all the appearance of a thrombus." Microscopically in this case, Woolley found the typical picture of a circumscribed hæmorrhagic infarct.

The case which is reported herein, is interesting, in that, although, as in Woolley's case, there was thrombosis of the veins, anæmic infarction had followed; whereas, in a soft organ such as the adrenals, we might have expected hæmorrhagic infarction to have followed this lesion. The case in detail is as follows:

I. S., a white female, æt. twenty-eight, was admitted to the Bellevue Hospital in New York, on July 31, 1905, to be confined. Two years previously, she had had a ventral suspension of the uterus performed for "falling of the womb." The patient went into labor on August 8, 1905, and on the following day she suddenly died, following a rupture of the pregnant uterus posteriorly.

At autopsy, which was held on August 10, under the direction of Dr. J. Edgar Welch, by whose kind permission this case is reported, the following interesting anatomical diagnosis was recorded: Rupture of

the gland, however, was the peritoneal cavity; chronic and acute vegetative mitral endocarditis; infarction of the adrenal; chronic diffuse nephritis (large white kidney); fatty degeneration of the liver; chronic ulcerative phthisis; and tuberculous ulcers of the colon.

When the right kidney and adrenal were exposed, the latter was found to be very large, extending over, and covering more than one half of the posterior surface of the kidney. It was very dark in color, friable, and cut with difficulty, owing to its soft consistency. The cut surface was dark, but the cortex and medulla were easily distinguishable. There were no tubercles seen grossly, and subsequent microscopical examination confirmed their absence. The left adrenal was somewhat smaller than the right, also hæmorrhagic, but subsequent microscopical examination showed it to be relatively normal. In neither adrenal was there anything to lead one to suspect a condition of necrosis, other than the softened condition of the right organ.

Microscopically the right adrenal showed the following lesions: The radicals which make up the central vein, and, indeed, the central vein itself, were filled with large typical ante mortem thrombi, with a laminated structure. The gland substance showed numerous large, pale, staining areas of coagulative necrosis, alternating with relatively normal parenchyma. The necroses, which occupied the cortex exclusively, were definitely circumscribed, and around each area, and separating it from the adjoining healthy tissue was a zone of polymorphonuclear leucocytes and some fibrin. The necrosis in some instances was immediately beneath the capsule, from the vessels of which at various points, small subcapsular hæmorrhages had occurred. A moderate degree of diapedesis had occurred in the periphery of the infarcted areas, but the central areas were entirely devoid of red cells. A few fibroblastic cells at the periphery of the necrotic foci indicated a beginning organization at these places. The arteries were normal in appearance, but the capsular veins were everywhere engorged. There was no marked fibrous hyperplasia in the gland, nor was there evidence of any tuberculous process.

The existence of acute endocarditis suggested the possibility that these multiple small areas of necrosis may depend upon the presence of bacteria rather than on the malnutrition from the thrombosis of the veins, but careful search failed to reveal any bacteria in them. It therefore seemed possible to conclude that these scattered areas of coagulative necroses each with its zone of leucocytic reaction, hæmorrhage, and beginning organization, were in reality anæmic infarctions resulting from the thrombotic occlusion of the veins.

1. Nissen. *Nachricht. v. d. k. k. Ges. d. Naturf. u. Med. Wien*, 1897, xlviii, p. 8.
2. Orth. *Specielle pathologische Anatomie*, ii, p. 96.
3. Duckworth. *Twentieth Century System of Medicine*, ii, p. 28.
4. Rolleston. *British Medical Journal*, 1895, i, pp. 629, 687, 745.
5. Flint. The Blood Vessels of the Adrenal, *Johns Hopkins Hospital Reports*, ix, p. 153, 1900.
6. Karakascheff. *Ziegler's Beiträge*, xxxix, 2, p. 373, 1900.
7. Woolley. *Journal of Medical Research*, ii, p. 231, 1902.

Influenza was originally an Italian word for influence, and, among other things, for the influence of the stars, which manifested itself balefully in epidemics of disease. Hence *influenza di febbre scarlatina*, for instance, meant an epidemic of scarlet fever. And so, when eighteenth century Italy was prostrated by the sneezing, snuffling scourge and passed it on to England, it was naturally spoken of as "the" influenza—"the" epidemic.—*Midland Druggist*.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

decided upon, the further questions are as follows:—

LXIII.—How do you treat gonorrhæal epididymitis?

LXIV.—How do you treat influenza? (Answers due not later than July 15, 1907.)

LXV.—How do you prevent contraction in the scars of burns? (Answers due not later than August 15, 1907.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable, no one answer to contain more than six hundred words.

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of \$25 for the best essay submitted in answer to question LXII has been awarded to Dr. George A. Graham, of Kansas City, Mo., whose article appears below.

PRIZE QUESTION NO. LXII.

THE PHARMACOPŒIAL PREPARATIONS TO BE KEPT ON HAND BY GENERAL PRACTITIONERS.

By GEORGE A. GRAHAM, M. D.,
Kansas City, Mo.

In the country districts the practitioner, in justice to his patients, should have his dispensary stocked both with the newer, almost indispensable drugs, and with a full line of pharmacopœial preparations, so as to be able to compound prescriptions which will take the place of the many proprietary articles so readily obtained in the city drug stores and which so many physicians are becoming more and more prone to prescribe, at the expense of their knowledge of prescription writing and *materia medica*.

In the city, besides some of these newer remedies which are not yet admitted to the *United States Pharmacopœia*, and which therefore I have omitted here, the general practitioner should keep on hand the following list for the purposes specified in the different sections. No drug or article will be named more than once, though used for purposes mentioned in more than one section.

First, and foremost, for croup and diphtheria, in a class by itself, is serum antidiphtheriticum. A package of at least 3,000 units should be within reach of every practitioner, day and night.

Second, in his hypodermatic case, he should have the following pharmacopœial drugs, but in tablet form, of the doses indicated: Atropinæ sulphas, gr. $\frac{1}{150}$; apomorphinæ hydrochloridum, gr. $\frac{1}{10}$; cocaineæ hydrochloridum, gr. $\frac{1}{2}$; morphinæ sulphas, gr. $\frac{1}{4}$; pilocarpinæ hydrochloridum, gr. $\frac{1}{10}$; strychninæ sulphas, gr. $\frac{1}{60}$.

Third, in his obstetrical bag, he should have:

Third, a full amount of saturated solution, chloroformum; fluidextractum ergotæ; hydrargyri bichloridum (in 7½ gr. tablets); liquor ferri subsulphatis; quiniæ sulphas (5 gr. capsules); petrolatum. Their use is obvious, so I do not specify.

Fourth, for poisoning cases and emergencies, such as apoplexy, fainting, burns, etc.: Amylis nitrus (in pearls); aqua ammoniæ fortior; chloralum hydratum; charta sinapis; ferri hydroxidum cum magnesi oxido; linimentum calcis; magnesi carbonas; oleum olivæ; oleum tigllii; potassii permanganas; spiritus ammoniæ aromaticus; vinum ipecacuanhæ; zinci sulphas.

Fifth, for office use, minor surgery, venereal diseases, gynæcology, etc.: Aqua hydrogenii dioxidi; argenti nitras (fused, and in 40 per cent. solution); alcohol; balsamum peruvianum; cupri sulphas; cataplasma kaolini; collodium flexile; cresol; ethylis chloridum (in tubes); emplastrum adhésivum; gossypium purificatum; glyceritum acidi tannici; glyceritum boroglycerini; hydrargyri chloridum mite; hydrargyri protiodidum (¼ gr. pills); hydrargyri biniodidum (1/16 gr. pills); iodoformum; liquor antisepticus; liquor formaldehydi; methylthioninæ hydrochloridum (methylene blue); oleum santali; oleum cubebæ; oleum copaibæ; plumbi acetatas; phenol; thymolis iodidum; tinctura iodi; zinci oxidum; zinci phenolsulphonas (zinc sulphocarbolate).

Sixth, for uranalysis, etc.: Acidum hydrochloricum; acidum nitricum; acidum sulphuricum; acidum tartaricum; acidum citricum; alkaline cupric tartrate solution (Fehling's solution); sodii nitrus; liquor sodii hydroxidi; liquor potassii hydroxidi.

Seventh, if a medicine case is carried, each practitioner should select the twenty (or more) remedies which he considers the most useful when a drug store cannot be reached. The following might be selected: Acetanilidum; ammonii carbonas; antimonii et potassii tartras; bismuthi subnitrus; cerii oxalas; codeinæ sulphas; belladonnæ fluidextractum; digitalis fluidextractum; gelsemii fluidextractum; potassii iodidum; pulvis jalapæ comp.; tinctura ipecacuanhæ et opii; potassii bromidum; resina podophylli; tinctura aconiti; tinctura veratri viridis; tinctura opii deodorati; tinctura opii camphorata; sodii salicylas; phenolis salicylas.

The best results are to be obtained in the practice of medicine, not by the indiscriminate use of many drugs, but by the proper use of a few drugs, well selected to meet the requirements of each case. Only pharmacopœial drugs are mentioned in the foregoing list.

278 EAST AVENUE.

Dr. Leon G. Tedesche, of Cincinnati, O., remarks:

This question can be answered in different ways, depending on several conditions:

First, the environment of the general practitioner, whether in country village, town, or city. If in the country village or town the general practitioner will have with him or at close hand his medicine case containing few or many preparations according to the needs of his practice and his own therapeutical inclinations. His city brother, having more drug stores at his command, will not need a large medicine case for his practice, but a small one and a medical kit for office use.

Second, some physicians while decrying pharmacists who prescribe, do not hesitate to dispense their own medicines. For dispensing practitioners the list below will not be sufficient. The preparations noted are such as will be needed for office treatments, for emergency calls at night or day, especially when treatment must be begun at once and no time is to be wasted while waiting for the filling of a prescription. Special antidotes for poisoning have not been included unless otherwise used. Drugs for obstetrical emergencies and complications have also been included. Preparations for technical use, as in uranalysis, hæmatology, and other laboratory procedures, have not been mentioned unless used for other purposes.

The list which follows is arranged, firstly, according to the pharmacological actions of the preparations, and, secondly, in alphabetical order. Some groups contain a variety of preparations all seeming to subserve the same purpose, but the different preparations are to be used for different purposes. For example, boracic acid and silver nitrate will be used in ophthalmology and stomatology, *et al.*; liquor cresolis compositus, potassic permanganate, and corrosive sublimate in gynæcology and genito-urinary treatments and so forth, according to individual preferences. Some groups will seem superfluous, such as sialogogues, but their members are used for more important actions and are merely mentioned to give other properties of the same drugs. Many other drugs could, of course, be added as necessities. Each practitioner will have his own preferences, but following out the tendency of modern therapy rather than that of "elegant pharmacy," I have refrained from adding adjuvants, correctives, flavors, and so forth, because this list is not to take the place of prescriptions.

The pharmacological list is as follows:

- I. Cerebral stimulants—19; 28; 23.
- II. Cerebral depressants—26; 43; 45.
- III. General anæsthetics—27; 7; 8.
- IV. Local anæsthetics—7 (spray); 8; 28; 50.
- V. General anodynes—1; 29; 45.
- VI. Local anodynes—7, 27, 9 (volatilized); 50 (dental); 63; 64.
- VII. Antispasmodics—13; 27; 7.
- VIII. Vagus stimulants (slow pulse)—6; 33; 60; 67.
- IX. Vagus depressants (accelerate pulse)—23.
- X. Diminish blood pressure—13; 39.
- XI. Dilate pupil, etc.—19 (raises intraocular pressure); 28 (lowers intraocular pressure).
- XII. Contract pupil, etc.—51 (lowers intraocular pressure); 52 (lowers intraocular pressure).
- XIII. Cardiovascular, increase force and lessen frequency—33; 60.
- XIV. Diminish force and lessen frequency—45; 51; 52; 67.
- XV. Vasodilator and lowerer of blood pressure—13; 39; 67.
- XVI. Vasoconstrictor and raiser of blood pressure—37; 28; 33; 35; 51; 60; 23.

- XVII. Respiratory stimulant—12; 19; 60; 73.
 XVIII. Respiratory depressants—20; 29; 45; 10; 44; 45; 13.
 XIX. Siccifics—32; 51.
 XX. Astringents—19.
 XXI. Linctives—15; 32.
 XXII. Antemetics—28; 29; 29; 45; 39; 13; 50; 17; 22; 41.
 XXIII. Laxatives—51.
 XXIV. Simple purges—40; 41.
 XXV. Drastic purges—48; 34.
 XXVI. Diuretics—9; 23; 33; 39; 41.
 XXVII. Antipyretics—1; 6.
 XXVIII. Oxytocics—35; 54; 52.
 XXIX. Antoxytocics—26; 45.
 XXX. Diaphoretics—52.
 XXXI. Anthelmintics—19.
 XXXII. Caustics—2; 32; 18; 50; 5; 4.
 XXXIII. Astringents—2; 37; 32; 17; 10.
 XXXIV. Styptics—37; 28; 18; 2; 11.
 XXXV. Protectives—30; 41; 44; 61; 62-65; 22.
 XXXVI. Antiseptics—9; 3; 61; 20 and 46; 41; 24; 36; 44; 42; 31; 40; 47; 50; 53; 17; 14; 56; 21; 22; 32.
 XXXVII. Deodorants—25; 24; 36; 42; 53; 50.
 XXXVIII. Emollients—49; 38.
Alphabetical list, with pharmacological cross-references:
 1. Acetphenitidinum—v; xxvii.
 2. Acidum aceticum glaciale—xxxii; xxxiii; xxxiv.
 3. Acidum boricum—xxxvi.
 *4. Acidum nitricum—xxxii.
 *5. Acidum trichloroaceticum—xxxii.
 6. Aconitina—viii; xxvii.
 7. Ether—iii; iv; vi; vii.
 8. Æthylis chloridum—iii; iv.
 9. Alcohol—vi; xxvi; xxxvi.
 10. Alumen—xxxiii.
 11. Alumen exsiccatum—xxxiv.
 12. Ammonia fortior, aqua—xvii.
 13. Amylis nitrus—vii; x; xv; xviii; xxii.
 14. Antisepticus, liquor—xxxvi.
 15. Apomorphinae hydrochloridum—xxi.
 16. Aqua destillata.
 17. Argenti nitras—xxii; xxxiii; xxxvi.
 18. Argenti nitras fusus—xxxii; xxxiv.
 19. Atropinae sulphas—i; xi; xvii; xviii; xx; xxxi.
 20. Balsamum peruvianum—xxxvi.
 *21. Benzoini composita, tinctura—xxi.
 22. Bismuthi subnitras—xxii; xxxv; xxxvi.
 23. Caffeina citrata—i; ix; xvi; xvii; xxvi.
 24. Calx chlorinata—xxxvi.
 *25. Carbo ligni—xxxvii.
 26. Chloralum hydratum—ii; xviii; xxii; xxix.
 27. Chloroformum—iii; vi; vii.
 28. Cocaina hydrochloridum—i; iv; xvi; xxii.
 29. Codeinae phosphas—v; xviii; xxii.
 30. Collodium flexile—xxxv.
 31. Cresolis, liquor compositus—xxxvi.
 32. Cupri sulphas—xxi; xxxii; xxxiii; xxxvi.
 33. Digitalis, tinctura (fluidextractum)—viii; xiii; xvi; xxvi.
 34. Elaterium—xxxv.
 35. Equisetum arvense—xxxv.
 36. Formaldehydi, liquor—xxxvi.
 37. Glycerilis nitratis, spiritus—x; xv; xxii; xxvi.
 38. Hydrargyri chloridum corrosivum—xxxvi.
 39. Hydrargyri chloridum rubrum—xxxv; xxxvi; xxxv; xxxvi.
 40. Hyoscinae hydrobromidum—ii.
 41. Iodolum—xxxv; xxxvi.
 42. Morphinæ sulphas—ii; v; xiv; xviii; xxii; xxix.
 43. Oleum ricini—xxiv; xxxvi.
 44. Oleum terebinthinae—xxxvi.
 45. Oleum tigllii—xxv.
 46. Petrolatum liquidum—xxxviii.
 47. Phenol liquefactum—iv; xxii; xxxii; xxxvi; xxxvii; vi.
 48. Pysostigminæ salicylas—xii; xiv; xvi; xix; xxiii.
 49. Pilocarpinae hydrochloridum—xii; xiv; xix; xxviii; xxx.
 50. Potassii permanganas—xxxvi.
 51. Quininae bisulphas—xxxviii.
 52. Saccharum lactis.
 53. Sapo mollis—xxxvi.
 54. Sodii chloridum (for sterile solutions).
 55. Spiritus frumenti.
 56. Spiritus vini gallici.
 57. Strychninae sulphas—viii; xiii; xvi; xvii.
 58. Thymolis iodidum—xxxv; xxxvi.
 59. Unguentum acidi borici—xxxv-vi.
 60. Unguentum phenolis—xxxv-vi; vi.
 61. Unguentum veratrinae—vi; xxxv.
 62. Unguentum zinci stearatis—xxxv.
 63. Viburni prunifolii, fluidextractum (obstetrical).
 64. Veratrina—viii; xiv; xv.
 *Not essential.

Dr. Anthony W. Lamy, of Baltimore, Md., writes:

This very interesting and much discussed question varies widely in its answer as to the practitioner's location. It will be much more brief to enumerate such as are required by the city practitioner than those in demand of one in a rural district, since the latter is almost required to have a well stocked dispensary at his disposal. Nothing will be of more immediate value than a well stocked hypodermic case containing the usual list of soluble tablets, as strychnine sulphate, morphine, nitroglycerin, atropine, pilocarpine, apomorphine, digitaline, and a small vial of sterile water.

As to those necessary to be kept in the office for the various procedures, and for use in his emergency cases, the following enumerations would seem to suffice: Cocaine; adrenalin; bichloride of mercury; iodoform; iodine in solution; potassium permanganate; carbolic acid; silver nitrate; oxalic acid; picric acid; calomel; bismuth subnitrate; ergot; aromatic spirit of ammonia; iron subsulphate or its solution; pearls of amyl nitrite; ethyl chloride; chloroform and ether for anæsthesia; plaster of Paris for dressings.

This list would seem to be a fairly sufficient amount of drugs to keep on hand, unless in the rural districts, where the physician furnishes his own medicines to his patients. If such is the case, the question would depend entirely upon the physician's therapeutical education and choice of drugs.

To be concluded.)

Therapeutical Notes.

Powders Against Lumbricoids and Oxyures Vermiculares.

- R Calomel,0.15 gramme;
Santonine,0.10 gramme;
Pulverised sugar of mill,1.0 gramme.

Mix and give in a spoonful of coffee in the morning before breakfast.

Gazette médicale de Paris, May 15, 1907.

Local Applications of Iodine in Puerperal Infections.—Cabanès, of Algiers, in the obstetric section of the Congress de gynécologie, d'obstétrique et de pédiatrie, presented a report of thirty-five cases of puerperal infection, treated with applications of gauze moistened with tincture of iodine, or, better, with a watery solution of iodine (4 per cent.). He called attention to the innocuousness of the treatment, which applied twice daily, constitutes, in his opinion, a sure and potent method of counteracting the infection in puerperal endometritis or commencing septicæmia. It also is useful against certain cases of plastic pelviperitonitis, which are limited and subacute in character, by suppressing the uterine source of the production of bacteria and toxines. The latter cases, however, require special care in making these applications.

Sodium Nitrite and Amyl Nitrite in the Treatment of Hæmoptysis.—Campani (*Rivista critica di chimica medica*, March 30, 1907) states that in hæmoptysis occurring suddenly in persons in apparent good health, where the arterial tension is high and there is considerable vascular excitement, sodium nitrite in small doses (0.25 gramme, or gr. iv daily) combined with potassium nitrate and sodium bicarbonate, gives excellent results, and better than ordinary hæmostatics. The same remedy is useful in the hæmoptysis of gouty origin, in hypertension, and arteriosclerosis. Grace Calvert (*Lancet*, April 6, 1907) has used amyl nitrite in twenty-two cases of hæmoptysis, with hypertension, with the best effect. She observed that the pressure falls immediately, the tension at the point of bleeding is lowered, and the clot has time to form. It is also observed that after its primary effect in reducing the quantity of blood in the lungs has passed, it is not followed by a secondary hyperæmia of the lung by reaction.—*Journal de médecine*, May 5, 1907.

Isopral and Hydrated Chloral.—Hatcher states that his experiments on rabbits and cats and Impens's experiments on rabbits show that there is no essential difference between the action of isopral and hydrated chloral in effective doses on the respiratory centres, while his experiments on dogs show that isopral is more than twice as active in depressing the vasomotor and respiratory centres

and the heart, his figures for the relative toxicity almost precisely corresponding to those given by Impens for the relative effectiveness of the two drugs for the dog. Cautious clinicians will not experiment with isopral, except in carefully selected cases. Isopral, like hydrated chloral, is wholly unsuited for use in those cases in which sleeplessness is due to pain, since it is an anæsthetic only in extremely dangerous doses.—*The Journal of the American Medical Association*, June 1, 1907.

Procreation of the Sexes at Will.—Thury, of Geneva, states that if sexual congress takes place four or five days before the appearance of the menses, provided that fecundation take place, the infant will be a girl. If impregnation should occur five or six days after the cessation of the menstrual flow, the infant will be a boy. He reports an experiment made upon cattle by a Swiss farmer, who in twenty-nine cases was successful in controlling the sex by adopting this method without one failure. Dr. Guiard reports a series of thirty-five observations in the human subject, in which thirty-one times was the law of Thury verified.—*Gazette médicale de Paris*, May 15, 1907.

Tapeworm in Infants.—The dog tapeworm *Dipylidium caninum* (frequent in the domestic cat as well as the dog) may be carried by fleas to the human subject if the insects are taken into the stomach. Blanchard reported a case in a child, nine months of age, seen at the Hôpital bretonnean in Paris. The mother had for some time noticed white grains in the stools every day, until finally the infant spontaneously expelled the entire worm. The contamination of the child's milk with fleas was believed to be the source of the infection. The fleas contain the embryos of the tænia, which develop with great rapidity in the stomach, as it has been found in infants of only four or five weeks, who were nursing from a bottle.—*Le Bulletin médical*, May 8, 1907.

Blackness of the Tongue Caused by Hydrogen Dioxide.—Before the Société française de dermatologie et de syphiligraphie, Hallopeau and Boudet recently presented a case of black tongue produced by hydrogen dioxide used as a mouth wash during a course of antisiphilic treatment (with injections of gray oil). They also referred to a second case they had seen, both occurring within a week. It was at first thought that the condition of the tongue was due to a reaction between the saliva containing mercury and the hydrogen dioxide, but it was later observed in a third case, a man who was in good health without any evidence of syphilis, and who was not using mercury. He had daily used as a gargle the diluted 12 volume solution (a tablespoonful to half a glassful of warm water). At the end of a week a very decided black staining was seen on the dorsum of the tongue. Chatin, in discussing this communication, said that he had observed the same condition in twenty cases following the employment of hydrogen dioxide as a gargle. He had only seen it, however, in cases where the tongue was coated or furred. The condition, which often frightens the patient, has no gravity and disappears spontaneously.—*La Clinique*, May 10, 1907.

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GREEK REGULATION OF MEDICAL ONOMATOLOGY.

The technical terms used in medicine are largely drawn from the Greek language, of which the beauty and susceptibility of the formation of self explanatory compounds are thoroughly appreciated. But in many instances the necessary word building has been done unskilfully and erroneously, so that numerous neologisms which have come into common use are seen to be really misleading when one comes to analyze them. The Medical Society of Athens has recently been moved to endeavor to remedy this gross misuse of the ancient Greek language, as we learn from the May number of *Γαληνός*. Accordingly the Athenian society has appointed a committee of learned medical men to revise the faulty nomenclature that has grown up. The committee consists of thirty-four members, all but one of whom are apparently Greeks, though two of them are residents of Constantinople and one is domiciled in Cairo. The one member who is not a Greek is our learned townsman Dr. Achilles Rose, whose earnest labors in behalf of onomatological reform seem at last to be meeting with worldwide appreciation. The committee is to have the cooperation of a professor of philology.

We hope that some other matters than the mere construction of compound words will be seriously considered by the committee. For example, we trust that modern meanings, when they are the products of conventionality or of the changes which are

inevitable in all living languages, will be considered more in the evolution of language, rather than in the times of the classical medical authors. We wish, too, that the committee may give us its ideas, supported by arguments, as to the force of the accent marks in the matter of stress. It is well known that in Germany those marks govern the stress entirely, whereas English speaking peoples are guided solely by the quantity of the vowel of the penultimate. For instance, the Germans say *ánthropos*, while we say *anthropos*. If the accent mark is held to govern stress, we should like to know why it figures in monosyllables. Assuming that derivatives as well as original words will be dealt with, we venture to express the hope that the current word "analgesic"—barbarous as it seems to us—may be extinguished and *analgetic* substituted for it. "Urinalysis," we fondly believe, can hardly fail to be replaced by *uranalysis*. The Greeks know their own language, ancient and modern, better than we know it, and it is to be hoped that the committee will not hesitate to insist upon radical reforms. Its work is destined to be arduous, and we fear that its completion cannot be expected before many months if not years have elapsed, but we are convinced that it will be extremely valuable.

THE TREATMENT OF HEADACHE.

In the May number of the *Monthly Cyclopædia of Practical Medicine* Dr. Beverley Robinson, of New York, gives some useful hints as to the treatment of certain forms of headache. The ætiology, he says, must always be considered and the cause eliminated if the elimination is possible. For example, anæmia must be overcome, gout or rheumatism should be treated specifically, and febrile conditions have to be ameliorated; then in due course of time comes freedom from headache, perhaps permanent, but possibly only temporary. When there is syphilis, with nocturnal headache and insomnia, the iodides in increasing doses are our mainstay.

As to the numerous morbid conditions that may act in a reflex way, whether resident in the nose, the pharynx, the uterus, the ear, or the digestive organs, they are to be remedied so far as possible. Nasal obstruction, adenoid growths in the nasopharynx, and enlarged tonsils must be done away with. A sinking or retroverted uterus should be restored to its normal place and posture and the restoration maintained, and abnormalities of menstruation will need correction "by general and, in minor degree, by local measures."

The real cause of very many headaches is to be found in acute or chronic digestive disturbances. An error of diet, some special food, or merely a surfeit of too many foods, will give a headache which

of blue mass, followed by a saline draught, will alone relieve effectually and rapidly." But neurasthenia is the cause of the greater number of headaches. In cases of dyspeptic symptoms Dr. Robinson lays great stress on the sour milk diet and the moderate use, morning and night, of sodium sulphate. The article closes as follows: "When we come to relieve migraine, we can do little more or better. No treatment will surely prevent the return of the paroxysms, simply because we have here to do with a constitutional neurosis in which heredity is the ruling power. Alas for the throat specialists, the gynæcologists, the oculists, the otologists who proclaim cures with the knife or with other local means. Much may be done by curing a defective organ by operation at times or by topical applications frequently to diminish the number and severity of attacks of hemicrania; but a permanent and absolute cure is quite another thing, and, to ring true and fair to our patients, they ought to know it. In most cases of sick headache the final and only appeal left us is the hypodermic of morphine, unfortunately." We are inclined to think that the general experience of the profession will bear out what Dr. Robinson says.

THE DUTY OF SOCIETY TOWARD THE CHILD AT SCHOOL.

Dr. S. A. Knopf, of New York, delivered a lecture thus entitled before the National Conference of Charities and Correction at Minneapolis, on June 14th. From a synopsis with which he has kindly furnished us it appears that it was his purpose to show that the subject of hygiene in our schools (public, private, and parochial, as well as kindergartens), if it comprised not only physical, but mental and moral hygiene as well, was one of the most important of all the subjects in which educators, sanitarians, physicians, philanthropists, and governing bodies could engage. He considers the satisfactory solution of this problem, that is to say, the proper application of physical, mental, and moral hygiene to the life of the school child, as equivalent in importance to that of any of our social problems.

After the child has safely passed through the dangers by which it is threatened as an infant, says Dr. Knopf, the likelihood of its contracting the various more or less fatal diseases peculiar to the school age arises, and to that it is exposed for a period of from seven to eight years; that is, it is likely to contract some of the communicable diseases, such as measles, chickenpox, scarlet fever, diphtheria, tuberculous disease, and even spinal meningitis if there happens to be an epidemic of that affection. Besides the danger in which a school child stands of con-

tracting the various diseases mentioned, overwork, mental strain, eye strain, and ear strain may cause the development of new physical defects or an aggravation of nervous, ocular, or aural affections which had before been only latent or in an incipient stage. If the child has an hereditary predisposition to disease, because one or both of its parents have had tuberculous disease or syphilis, or been afflicted with a major nervous disorder, or been addicted to alcoholism, the strain of school life not infrequently suffices to bring out or develop the hereditary taint.

Among the remedies for existing conditions, Dr. Knopf spoke, first, of the necessity of giving the child more years of play; secondly, of the training of teachers in the diagnosis of diseases to a sufficient extent to facilitate the work of the school physician; thirdly, of making the classes small enough to enable the teacher to come in closer contact with the individual pupil, and of establishing classes for the mentally defective and backward; fourthly, of the arranging of the curriculum in all schools so that the mental development should not be pushed to the detriment of the physical welfare of the child. He thinks that enough school physicians, sufficiently remunerated, should be attached to every public school to assure the exclusion of children afflicted with contagious or communicable diseases and secure the detection of ocular, aural, dental, or other physical defects, with a view of curing or correcting the disease or infirmity by either private or public effort.

He urges that a spirit of compassion and chivalry could be awakened by teaching the children of the well to do to help their underfed, badly clothed, and badly housed fellow pupils, the children of the poor; but if this is not sufficient, the community should come to the rescue and help to provide luncheons for those who cannot pay for them. The recent words of President Roosevelt when he addressed the schoolmates of his son Archie on the subject of *The American Boy*, in which he admonished the boys to be brave, strong, gentle, and kind, should serve as an inspiration to the superintendents of schools and be incorporated in the weekly curriculum as a lesson on true bravery, gentleness, and kindness. Finally, Dr. Knopf endeavored to prove that by the money which would be expended in thus making of the school child a physically strong, mentally sound, and morally pure young man or woman, not only would the commonwealth be the financial gainer in the end, but by such judicious expenditure for the preservation of the life and health of our school children our mortality rate would be decreased, our reformatories and prisons would be less populated, and the future generations would be made up of finer men and women.

THE KNOFF CANARD IN LONDON.

The mendacious newspaper account of Dr. Knopf's remarks in Washington on a recent occasion has been published in London, and some of the newspapers of the British metropolis have not only swallowed the canard, but actually proceeded to lecture the medical profession of the world on the enormity of medical men's ever taking the responsibility of securing untimely euthanasia for consumptives. They are of course destroying a man of straw, and we are glad to observe that the *British Medical Journal* brings them up with a round turn. We cordially agree with our London contemporary in the wish that the lay press might take some slight pains to establish the accuracy of its medical "information." We have already shown that Dr. Knopf said nothing susceptible of the sinister interpretation that has been put upon his remarks by the newspapers, and we wish now to renew our frequent protests against newspaper misrepresentation of utterances by physicians.

VENOUS THROMBOSIS OF THE ARMS IN ASYSTOLIA.

Venous thrombosis occurs as a complication of mitral asystolia, as has been proved by the observations of Huchard, Gallavardin, and Lacombe. It usually appears in the arms, particularly the right one, but the thrombosis rarely extends to the superior vena cava. When it does so, however, the vessel is completely obliterated. According to the recent researches of Poynton, Cheadle, and Lees, the clot contains bacteria, so that it may be said that one is dealing with a tardy phlebitis due to infection of the blood in subjects where a venous stasis particularly favors the development of microbic agents. This peculiarity explains the occurrence of thrombosis in cases of asystolia which have become fully developed. The œdema begins in the end of the member, being particularly predominant from the back of the hand to the region of the elbow. It extends with great rapidity and the limb soon becomes tumefied throughout its entire extent; its increase in size is distinctly seen when it is compared with the opposite normal arm. The œdema soon involves the neck and the face, producing asymmetry of those parts. It is of the hard type, the skin is distended, and no pitting follows pressure with the finger. It takes on a cyanotic tint, and the superficial veins become dilated and occasionally varicose. Pain is extremely infrequent, the patient being more apt to complain of a disagreeable sensation of numbness with tingling. The temperature of the diseased limb is lowered.

In most cases the asystolic symptoms become more accentuated when the thrombosis develops,

and the pulse may be found extremely arrhythmic. A temperature of 36° indicates post-mortem condition, of which the thrombosis is the visible expression, and, as pointed out by Lacombe, the venous thrombosis is a phenomenon of asystolia, but occurs as a complication of infectious diseases, such as pneumonia, influenza, bronchitis, pleurisy, pericarditis, pulmonary tuberculous disease, rheumatism, etc., all these affections having an effect on both the endocardium and the heart, which they infect; so that they weaken the cardiac contractions while they also infect the walls of the vessels. Venous thrombosis is a complication which, if not in itself fatal, at least indicates an infection and the importance of venous stasis, so that its appearance accelerates the progress of the disease and renders the prognosis serious.

THE POSSIBILITY OF INFECTION FROM SEWER PIPES.

It was a common theory twenty years ago that infectious diseases were spread by sewer gas, and outbreaks of diphtheria and other infectious diseases were attributed to improper drainage and the escape of noxious gases into the sleeping apartments of those attacked by the diseases. With the demonstration of the germ theory of the infectious diseases the idea of the action of sewer gas in their production was gradually abandoned, as well as the theory of the causative influence of emanations from the soil. The theory of the causation of infectious diseases by fomites, however, persists. Recently Horrocks (*Proceedings of the Royal Society*, lxxix, B 531) has instituted some interesting experiments to determine whether the air of drains and sewers may be infective. In a first series of experiments he worked with sewage in a closed vessel, and found that the bursting of bubbles of gas, in the absence of currents of air passing through the apparatus, was not sufficient to infect the air of the container. He used *Bacillus prodigiosus*, *Bacillus typhosus*, and *Bacillus coli communis* in his experiments. When, however, he used an apparatus in which there was a circulation of air, he found that the bursting of gas bubbles was sufficient to infect the air of the system. If the sewage was infected with a known organism, Petri dishes, suspended at various levels above the surface of the fluid in the system, became infected in a varying length of time after they were placed in position. Further experiments showed that the separation of dried particles from the walls of the pipes of a sewage system and the probable ejection of minute particles from flowing sewage might infect the air of the system. In order to prevent the passage of microorganisms into the house drainage system from a main sewer,

thus infecting the air of the house, a disconnecting trap is necessary. In an interesting series of experiments made with actual sewage systems of a house and a military hospital it was shown that the organisms might be carried from the sewage to the air inlet of the system. Indeed, the air inlet was shown to be a source of danger of infection even when the inlet was protected by a mica valve, particularly when the inlet was placed at about the ground level. These experiments seem to show that there is danger of actual spread of infectious material by badly constructed sewerage systems, apart from the recognized danger of depression of the resistance of the individual by inhalation of the noxious gases liberated.

Obituary.

CHARLES LAIGHT, M. D.,

OF ROME.

Dr. Laight died in Rome on April 1st, aged sixty-one years. He was born in New York and was a graduate of the College of Physicians and Surgeons. He served the full term on the house staff of the New York Hospital and entered upon practice as an ophthalmologist. In the course of a few years, however, impaired health led him to resort to the Adirondacks, where he continued to spend his summers, but making his home in Rome during the winters. He practised in the Italian capital, where he was widely known and highly esteemed. Dr. Laight was an exceedingly gentle and lovable man, and many an old New York friend of his will learn with regret of his decease.

News Items.

The Training School for Nurses of the Friends' Asylum for the Insane held commencement exercises on Wednesday, June 12th. Dr. W. M. L. Coplin made the address.

The Pennsylvania State Pharmaceutical Examining Board announced the results of the recent examinations on Friday, June 7th. Out of 252 applicants, 84 passed the examinations and will be registered to practice pharmacy in the State of Pennsylvania.

Philadelphia Personals.—Professor Albert Kocher, of Berne, Switzerland, operated for hernia at the Medico-surgical College, Philadelphia, on Saturday, June 8th.

Professor Gustav Killian, of Freiburg, and Professor Theodor Gluck, of Berlin, held clinics at the Jefferson Hospital on June 8th.

The Fourth Congress of the Italian Orthopædic Society will be held at Bologna, in the Rizzoli Institute, on the 15th of October next. The order of the day will be the subject of Treatment of Tuberculous Spondylitis, which will be discussed by Professor Riccardo Galeazzi, of Milan, and Professor Raffaele Bastianelli, of Rome.

The New England Alumni of the Baltimore Medical College held their second annual banquet at the New American House, Boston, on Tuesday, June 11th. Officers were elected as follows: President, Dr. F. A. Sullivan, Haverhill; vice-president, Dr. M. G. Overlock, Worcester; secretary, Dr. C. S. Gilman, Boston; treasurer, Dr. A. M. MacWhinnie, Pawtucket, R. I.

The Syracuse, N. Y., Academy of Medicine.—The following programme was presented at a meeting of this academy held on Tuesday evening, June 18th: The Pupil of the Eye in Health and in Disease, by Dr. G. Griffin Lewis; Physical

Therapy, by Dr. J. J. Levy; The Borderland of Insanity (postponed), by Dr. H. G. Locke; X Ray Demonstration of a Case, by Dr. C. E. Coon.

Scientific Society Meetings in Philadelphia for the Week Ending June 29, 1907.—Tuesday, June 25th, Philadelphia Neurological Society. Wednesday, June 26th, Philadelphia County Medical Society. Thursday, June 27th, Pathological Society; Entomological Section, Academy of Natural Sciences; Section Meeting, Franklin Institute. Friday, June 28th, South Branch, Philadelphia County Medical Society; Northern Medical Association.

The Mortality of Connecticut.—According to the State Board of Health's *Monthly Bulletin* for May, 1907, the number of deaths during the month was 1,320. This was 100 less than in April and 84 less than in May of last year, and 63 more than the average number of deaths during May for the five years preceding. The death rate was 15.8 for the large towns, for the small towns 15.4, and for the whole State 15.08. The deaths reported from infectious diseases were 242, being 18.3 per cent. of the total mortality.

In Memory of the Late Dr. Walter Reed.—The *Army and Navy Journal* says that the women of the Medical Corps of the Army have met with gratifying success in their efforts to collect a fund for the purpose of furnishing a room in the new Army General Hospital in memory of Dr. Walter Reed, for the use of wives and daughters of officers of the army. A majority of the women of the Medical Corps have already contributed. Further contributions should be sent to Mrs. M. W. Ireland, 1017 S. Street, N. W., Washington, D. C., who has succeeded Mrs. D. C. Howard as treasurer of the fund.

Personals.—The honorary degree of LL. D. has been conferred by the board of regents of the University of Nebraska upon James Carroll, Major and Surgeon, United States Army, curator of the Army Medical Museum, in recognition of his services in the field of bacteriology. The board of regents of the University of Maryland, his alma mater, has also conferred upon Surgeon Carroll a like honorary degree.

After July 1st, and during the summer, Dr. Orrin S. Wightman's address will be Wawbeek, Upper Saranac Lake, N. Y.

Civil Service Examinations for the State and County Service.—The State Civil Service Commission will hold examinations July 13, 1907, for a number of positions, among which are the following: Assistant in Clinical Laboratory, Manhattan State Hospital, \$900 and maintenance; Electrician, Education Department, \$720; Medical Inspector of Factories, \$2,400; Trained Nurse, State Institutions (men and women), \$420 to \$600 and maintenance; Woman Physician, State Hospitals and Institutions, \$1,000 and maintenance. The last day for filing applications for these positions is July 6th. Full information and application forms may be obtained by addressing Charles S. Fowler, chief examiner of the commission, in Albany.

The Hartford, Conn., Medical Society.—The *Section in Surgery* of this society will hold a meeting on Monday evening, June 24th. The following programme has been arranged for the meeting: Presentation of patients and specimens: (a) Epithelioma of Penis—Total Amputation, by Dr. H. G. Howe; (b) Extrauterine Pregnancy, (c) Gallstones, by Dr. C. E. Taft. Relation of Cases: Outward Dislocation of Elbow, by Dr. A. H. Williams. Paper of the evening: Surgery of the Heart, by Dr. M. M. Johnson; discussion, opened by Dr. H. G. Howe. Echoes from Atlantic City: *Section in Surgery*, Dr. J. B. Boucher, Dr. P. D. Bunce, Dr. L. B. Cochran, Dr. W. G. Craig, Dr. J. B. Pierson, Dr. E. A. Wells. *American Urological Association*, Dr. E. J. McKnight, Dr. O. C. Smith, Dr. C. S. Stern.

The Clinical Society of the New York Postgraduate Medical School and Hospital.—The following programme was arranged for a meeting of this society, held on Friday evening, June 21st: Presentation of patients; presentation of specimens, instruments, and apparatus; reports of cases: A Case of Intestinal Obstruction, by Dr. Fanoni; papers of the evening: (1) Surgery of the Gallbladder and Ducts, by Professor Charles R. L. Putnam; discussion by Professor Lloyd, Professor McGrath, Professor Torek, Professor Halsey, Professor Chase, and others; (2) The Significance of Certain Abnormal Stools in Early Life, by Professor Pisek; discussion by Professor Chapin, Professor Chase, Professor Halsey, Professor Carter, and Professor Bennett.

The Johns Hopkins Medical School. At the thirtieth annual meeting of the Johns Hopkins University Faculty, June 10, 1907, the following appointments were made: Dr. J. A. Hurdon, now assistant, to be instructor in gynecology; Dr. Joseph A. Chatard, now assistant, to be instructor in medicine; Dr. John A. Luetscher, now assistant, to be instructor in medicine; Dr. Donald R. Hooker, now assistant, to be instructor in physiology; Dr. Curtis F. Burnam, assistant in gynecology; Dr. DeWitt B. Casler, assistant in gynecology; Dr. Harry S. Greenbaum, assistant in medicine; Dr. H. D. McCarty, assistant in neurology; Dr. Henry J. Storrs, assistant in obstetrics. The degree of M. D. was conferred upon seventy candidates.

The Buffalo Academy of Medicine held its annual meeting on June 11th, at which the president, Dr. Charles S. Jewett, delivered the annual address. The following are the officers for the ensuing year: President, Dr. Allen A. Jones; secretary, Dr. H. R. Trick; treasurer, Dr. William I. Thornton; trustees, Dr. Thomas F. Dwyer, Dr. Grover W. Wende, Dr. DeLancey Rochester.

Section in Medicine: Chairman, Dr. A. L. Benedict; secretary, Dr. Thomas J. Walsh.

Section in Surgery: Chairman, Dr. James A. Gardner; secretary, Dr. Lawrence Hendee.

Section in Obstetrics and Gynecology: Chairman, Dr. William T. Getman; secretary, Dr. Louis Hengerer.

Section in Pathology: Chairman, Dr. Edwin A. Bowerman; secretary, Dr. George A. Sloan.

The Rhode Island Medical Society.—At the annual meeting of this society, held at Providence, on June 6, the election of officers resulted as follows: President, Dr. C. V. Chapin; first vice-president, Dr. Frank B. Fuller; second vice-president, Dr. Eugene Kingman; secretary, Dr. S. A. Welch; treasurer, Dr. George S. Matthews; committee of arrangements, Dr. P. Williams, Dr. W. B. Cutts, Dr. J. B. Ferguson; committee on publication, Dr. G. D. Hersey, Dr. C. M. Godding, Dr. G. T. Swarts; committee on library, Dr. H. G. Miller, Dr. G. D. Hersey, Dr. G. W. Porter, Dr. G. L. Collins, Dr. F. L. Day; committee on necrology, Dr. H. C. Putnam, Dr. E. B. Harvey, Dr. L. F. C. Garvin; committee on legislation, Dr. G. T. Swarts, Dr. W. F. Gleason, Dr. W. L. Munro, Dr. C. V. Chapin, Dr. S. A. Welch; curator, Dr. W. J. McCaw; auditor, Dr. Jay Perkins.

The Medical Society of the State of North Carolina held its annual meeting at Morehead City, on May 28-30, 1907. The election of officers resulted as follows: President, Dr. J. Howell Way, Waynesville; first vice-president, Dr. J. E. Stokes, Salisbury; second vice-president, Dr. J. A. Turner, High Point; third vice-president, Dr. W. H. Dixon, Beaufort; orator, Dr. Charles S. Mangum, Chapel Hill; essayist, Dr. T. R. Little, Greensboro; leader of debate, Dr. S. E. Koone, Wilmington; delegates to Mississippi Valley Association, Dr. W. H. Cobb, Dr. Charles Robinson, Dr. George W. Long, Dr. William McKenzie, Dr. Moore, and Dr. G. T. Sikes; to Virginia Medical Association, Dr. W. H. Ward, Dr. David Taylor, Dr. W. A. Graham, Dr. R. S. Primrose, Dr. J. M. Blair; to South Carolina Medical Association, Dr. T. E. Anderson, Dr. Albert Anderson, Dr. P. A. Nicholson, Dr. Julian Baker, Dr. W. Burris; North Carolina Board of Health, Dr. Taylor and Dr. Burroughs. The next annual meeting will be held at Winston-Salem.

Philadelphia Board of Health Statistics.—During the month of April, 1907, in the Division of Medical Inspection, 3,911 inspections were made, excluding schools; 721 fumigations were ordered; 60 cases were referred for special diagnosis; 6,746 visits were made to schools; 929 children were excluded from school; 401 cultures were taken; 161 injections of antitoxine were given; and 242 persons were vaccinated. In the Division of Vital Statistics, 2,433 deaths, 2,694 births, and 1,100 marriages were reported. In the Division of Milk Inspection, 7,516 inspections were made of 152,956 quarts of milk, of which 269 quarts were condemned; 12 specimens were examined chemically and 916 microscopically. In the Division of Meat and Cattle Inspection, 3,059 sanitary inspections were made, of which 121 were found unsanitary; 3,059 inspections were made of

presence of diphtheria bacilli; 472 specimens of blood were examined; 141 specimens of sputum were examined; 1,000 units of antitoxine were distributed. In the Chemical Laboratory 134 analyses were made.

Infectious Diseases in New York:

deaths reported for the two weeks ending June 15, 1907:

Disease	Week ending June 15, 1907	Week ending June 8, 1907
Varicella	100	105
Mumps	100	105
Scarlet fever	100	105
Diphtheria	100	105
Whooping cough	100	105
Measles	100	105
Polio	100	105
Smallpox	100	105
Typhoid	100	105
Typhus	100	105
Cholera	100	105
Paratyphoid	100	105
Relapsing fever	100	105
Brucella	100	105
Leptospirosis	100	105
Septicemia	100	105
Septic shock	100	105
Septic arthritis	100	105
Septic pneumonia	100	105
Septic meningitis	100	105
Septic peritonitis	100	105
Septic endocarditis	100	105
Septic thrombophlebitis	100	105
Septic abscess	100	105
Septic cellulitis	100	105
Septic fasciitis	100	105
Septic myositis	100	105
Septic osteomyelitis	100	105
Septic arthritis	100	105
Septic meningitis	100	105
Septic peritonitis	100	105
Septic endocarditis	100	105
Septic thrombophlebitis	100	105
Septic abscess	100	105
Septic cellulitis	100	105
Septic fasciitis	100	105
Septic myositis	100	105
Septic osteomyelitis	100	105

The Health of Philadelphia.—During the week ending June 15, 1907, the following diseases were reported to the Bureau of Health:

Disease	Cases	Deaths
Typhoid	50	3
Scarlet fever	50	3
Diphtheria	50	3
Whooping cough	50	3
Measles	50	3
Polio	50	3
Smallpox	50	3
Typhus	50	3
Cholera	50	3
Paratyphoid	50	3
Relapsing fever	50	3
Brucella	50	3
Leptospirosis	50	3
Septicemia	50	3
Septic shock	50	3
Septic arthritis	50	3
Septic pneumonia	50	3
Septic meningitis	50	3
Septic peritonitis	50	3
Septic endocarditis	50	3
Septic thrombophlebitis	50	3
Septic abscess	50	3
Septic cellulitis	50	3
Septic fasciitis	50	3
Septic myositis	50	3
Septic osteomyelitis	50	3

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 9; diarrhoea and enteritis, under two years of age, 12; puerperal fever, 2. The total deaths numbered 482, in an estimated population of 1,500,595, corresponding to an annual death rate of 16.07 in a thousand population. The total infant mortality was 104; under one year of age, 91; between one and two years of age, 13. There were 44 still births, 23 males and 21 females. The temperatures were low. There was a sharp thunder storm on the 5th. The total precipitation was 1.46 inches.

Statement of Mortality of Chicago for the Week Ending June 8, 1907, compared with the preceding week and with the corresponding week of 1906. Death rates computed on United States Census Bureau's figures of midyear populations—2,107,620 for 1907, 2,049,185 for 1906:

	June 8, 1907	June 1, 1907	June 9, 1906
Total deaths in week	1420	1591	1331
Annual death rate in 1,000	14.20	15.91	13.31
M	14.20	15.91	13.31
F	14.20	15.91	13.31
T	14.20	15.91	13.31
B	14.20	15.91	13.31
C	14.20	15.91	13.31
D	14.20	15.91	13.31
E	14.20	15.91	13.31
F	14.20	15.91	13.31
G	14.20	15.91	13.31
H	14.20	15.91	13.31
I	14.20	15.91	13.31
J	14.20	15.91	13.31
K	14.20	15.91	13.31
L	14.20	15.91	13.31
M	14.20	15.91	13.31
N	14.20	15.91	13.31
O	14.20	15.91	13.31
P	14.20	15.91	13.31
Q	14.20	15.91	13.31
R	14.20	15.91	13.31
S	14.20	15.91	13.31
T	14.20	15.91	13.31
U	14.20	15.91	13.31
V	14.20	15.91	13.31
W	14.20	15.91	13.31
X	14.20	15.91	13.31
Y	14.20	15.91	13.31
Z	14.20	15.91	13.31

Pith of Current Literature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

June 13, 1907.

1. The Relation of the Clinical Laboratory to the Practitioner of Medicine, By JAMES B. HERRICK.
2. Note on the Arteries of the Corpus Striatum, By JAMES B. AYER and H. F. AITKEN.
3. Pneumaturia, with Report of a Case, By ALBERT E. TAUSSIG.
4. The Repair of Cystocele, By EDWARD REYNOLDS.
5. Pulse Pressure Estimation, By SHEPHERD IVORY FRANZ.

2. **Note on the Arteries of the Corpus Striatum.**—Ayer describes the arteries of the corpus striatum, correcting the descriptions in the textbooks, which follow Duret's and Charcot's report. Our author says that the main artery has its course in the arteria cerebri anterior, directly opposite the arteria communicans anterior. It starts backward on the superior surface of the arteria cerebri anterior and is sometimes adherent to it, and is not visible unless the arteria cerebri anterior is freed from it and drawn to one side. It can then readily be traced back to the bifurcation of the arteria carotis interna, where it takes an outward turn and follows the arteria cerebri media and enters the tangle of the pia mater and vessels which lie between the arteria cerebri media and the substantia perforata anterior. This artery differs from the other arteries of the corpus striatum by giving off branches before it enters the substantia perforata anterior. As soon as it takes the outward turn at the bifurcation of the arteria carotis interna it sends a branch through the substantia perforata anterior into the inferior surface of the nucleus lentiformis, and remaining close to the surface it passes frontward into the lower portion of the caput nuclei caudati. Near this branch the artery gives off a similar branch, which takes a parallel course and is a little longer, ending in the nucleus caudatus at its extreme anterior portion. The greater portions of these two branches are in the putamen and supply it with minute branches. The artery, just before it enters the substantia perforata anterior, sends one more branch which spends itself in the putamen. The artery itself then goes through the substantia perforata anterior into the nucleus lentiformis, where it gives out several branches which are more or less confined to the putamen, though sometimes they enter the capsula interna; it then changes its course to one more anterior, sometimes bifurcating, and continues to the capsula interna, through which it passes into the nucleus caudatus to its extreme anterior part. It here breaks up into numerous branches, some of which turn back along the cauda nuclei caudati, while others enter and end in the capsula externa. The article is illustrated by three very well executed drawings by H. F. Aitken.

3. **Pneumaturia, with Report of a Case.**—Taussig reports a case of pneumaturia, the passage of free gas with the urine, either during micturition or on catheterization, and adds the history of four patients suffering from pneumaturia, found in the literature. The author observes that pneumaturia may occur either as the result of a rectovesical fistula or of intravesical fermentation. In the latter type, the gas may originate either from the fermentation of glucose in diabetes, or from the decomposition of proteid substances in cystitis. Of the nondiabetic cases, the microorganism responsible for the pneumaturia has been isolated in only eight cases: In three, it was the *Bacillus lactis aerogenes*, and in five the *Bacterium coli commune* (or *immobile*). In pneumaturia due to the *Bacillus lactis aerogenes*, the gas formation is readily referable to the peculiar characteristics of the bacillus. In pneumaturia due to the *Bacterium coli commune*, the gas formation may be due: a. To the presence of some pro-

teid, not yet definitely determined, which yields a gas when broken down anaerobically by the *Bacterium coli commune*; or, b. to the presence of a peculiar strain of *Bacterium coli commune* that is capable of producing gas where the usual varieties fail to do so.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

June 15, 1907.

1. The Duality of Man. Chairman's Address in the Section on Ophthalmology, By G. C. SAVAGE.
2. Venous Angioma of Skin Showing Beginning of Malignancy. Chairman's Address in the Section on Cutaneous Medicine and Surgery, By RALPH E. CAMPBELL.
3. Cataract Extraction. 1. Is the Case Operable? 2. Preparation of the Patient. 3. The Anæsthetic, By EDWIN E. JACK.
4. The Incision for the Extraction of Cataract and the Iridectomy, By JOHN E. WEEKS.
5. The Delivery of the Lens for the Extraction of Cataract; Irrigation of the Anterior Chamber, and First Toilet of the Wound, By L. WEBSTER FOX.
6. Subsequent Histories of One Hundred and Sixty "Arrested Cases" of Tuberculosis, Treated at the Sharon Sanatorium, 1891-1906, By VINCENT Y. BOWDITCH, with the collaboration of WALTER A. GRIFFIN.
7. The Work of a Chronic Typhoid Germ Distributor, By GEORGE A. SOPER.
8. The Medicine and Surgery of Three Gastrointestinal Cases, By JULIUS HOELSCHER.
9. Remote Effects of Tonsillar Infection, By PHILIP KING BROWN.

1. **The Duality of Man.**—G. C. Savage, of Nashville, spoke on this subject at the meeting of the American Medical Association at Atlantic City. He said, life, not alone of man, but of the lower animals also, is the mystic union of spirit and matter. This mystic union we may never understand, nor can we ever know how the spirit of man differs from the spirit of the lower animals. As human intuition and intelligence are higher than animal instinct, so is the spirit of man more exalted than the spirit of the beast. The material parts of all the members of the animal kingdom are subject to disease and death. Whether the spirit of the lower animals can combat disease and delay death may be seriously doubted. That the spirit of man can help the organs of the body to fight disease and delay the oncoming of death must be conceded; and, on the contrary, the spirit in man, in some of its moods, may weaken the fight of the physical body against disease, and even hasten the hour of dissolution, the breaking of the mystic union between spirit and matter. But what is man's spirit? The author's answer is a question: What is matter? "Answer me," he says, "and I shall answer you."

2. **Venous Angioma of Skin, Showing Beginning of Malignancy.**—Campbell, as chairman of the section on cutaneous medicine and surgery at the meeting at Atlantic City, remarks that two varieties may be selected as examples of cavernous angioma: First, skin angiomas having wart like form; second, angiomas of the liver. Angiomas of the skin are characterized by their intimate relations to the neighboring structures; that is, sometimes with the subepithelial connective tissue and sometimes with the deeper corium, where the vessel walls are of endothelium placed directly in contact with the connective tissue. The connective tissue is mostly poor in cells, but rich in nuclei. The new growth gradually shades into the surrounding corium, so that there are no sharply defined borders to the tumor. Neither small openings nor any signs of them are found connecting the blood spaces of the tumor with the vessels of the neighborhood, nor is there any indication that, by the gradual narrowing of the wide lumina, they are transformed into capillaries, or that the lumina themselves are transformed into capillaries. The author makes the distinction between the different

forms of simple blood poisoning, viz. Angioma simplex, (2) cavernous angioma, (3) hemangioma, and (4) angiosarcoma. The first two kinds of tumors are closely related with each other and may exist combined. Angioma simplex appears principally in the skin as a light red or blood red discoloration, in many instances not in the form of a neoplasm. It consists of newly formed arteries and veins, which are surrounded by an abundance of connective tissue. In cases of telangiectasis we are dealing chiefly with neoplasms of the capillary vessels. If they are very abundant, the result may be a vascular naevus, ordinarily with thinning of the epidermis and flattening of the papillary bodies. Diagnostically, much more easily do we recognize angiomas of wide cavernous spaces, often found in the liver, but likewise frequently seen in this form, which is the most frequent, and which may occur in almost any organ, and is absolutely benign in character, so long as no damage is done by its position or from hæmorrhage. A transformation into a malignant mixed form, with the appearance of nucleated cells in the connective tissue stroma, is a very rare occurrence.

8. The Medicine and Surgery of Three Gastrointestinal Cases.—Julius Hoelscher, of Chicago, states that medical and dietetic treatment will give only temporary relief in gastrointestinal cases. The diagnosis of gastric neuroses and chronic gastric catarrhs will become less frequent when surgery is resorted to and reveals adhesions, etc. The surgical treatment may give absolute relief promptly, though usually the long continued disturbances have caused changes in the musculature and glands of the stomach to such an extent that months and years may elapse before the patient rates himself as normal. The distinctive diagnosis calls for much attention regarding gastric ulcer, chronic cholecystitis, gallstones, and gastropptosis. The proper surgical interference gives better results than long continued purely medicinal treatment. The usual secondary symptoms of faulty gastrointestinal chemistry included under autointoxications should not be overlooked.

MEDICAL RECORD.

June 15, 1907.

1. Autointoxication in Its Medicolegal Aspects.
By HEINRICH STERN.
2. Some Observations on the Treatment of Graves's Disease.
By J. ARTHUR BOOTH.
3. Indicanuria, Its Ætiology and Practical Significance.
By WILLIAM HENRI PORTER.
4. Locomotor Ataxia; A New Theory as to Its Cause.
By E. N. LEONARD.
5. The Milk Supply of Vienna.
By ERNST J. LEDERER.
6. Pilocarpine as an Adjuvant in the Treatment of Syphilis.
By WILLIAM J. REYNOLDS.

1. Autointoxication in Its Medicolegal Aspects.—Stern speaks of catabolic poisons as far as they have any bearing upon legal medicine. The author says that the most simple and yet the most authentic of the catabolic, hence of all autointoxications, is the retention of carbon dioxide in the blood and tissues of the organism. It is characterized by cyanosis, slowing of the pulse, difficulty in breathing, and convulsions. In extreme instances death will ensue. Death by strangulation or uncomplicated suffocation is preeminently a death by carbon dioxide poisoning. However, there seems to exist a form of carbonic acid intoxication which does not depend upon an obstruction in some part of the respiratory organs, but upon the nonliberation of the carbon dioxide from a combination into which it has entered. This form of carbon dioxide poisoning may be at the foundation of some of the well known pathological states and may thus attain importance quite frequently. Carbon dioxide retention without the occurrence of a respiratory obstruction is, indeed, a very interesting phenomenon, which is destined to alter our views as regards the ætiology of a number

of affections. At the bottom of certain chronic diseases, as well as of many instances of so called heart failure, apoplexy, and other forms of sudden death, we may find carbon dioxide retention in various degrees.

The author then speaks of acidosis or acid intoxication, which he defines as poisoning by overproduction or deficient neutralization, or abnormal retention of normal, or by pathological, acid principles. Catabolic acidosis supervenes in some pathological states characterized by loss of body substance. Its most frequent occurrence is in the later stages of diabetes. The acetone bodies, betaoxybutyric acid, acetoacetic acid, and acetone, are always present in the urine of persons with acidosis, and are therefore pathognomonic of the condition, but they are not the cause of the peculiar train of symptoms. There are a number of autotoxic conditions which may more or less interfere with the repair of tissues after accidents and operations. As a matter of fact, the cause for the defective repair of the body structures oftentimes originates within the organism. Were it known by the legal profession that catabolic substances could exert a similar influence upon the healing process, as does the syphilitic poison, the number of suits for malpractice would dwindle rapidly and different verdicts would be rendered in many instances. The author concludes that certain pathological conditions as well as certain forms of death demanding legal inquiry are due to autotoxic processes of catabolic origin. The catabolic autotoxicoses may offer many and discrepant legal aspects. The time has arrived when the catabolic autotoxicoses should obtain legal status and citizenship in our courts of justice.

2. Some Observations on the Treatment of Graves's Disease.—J. Arthur Booth, of New York, remarks that, although Graves's disease is recognized by the prominence of four symptoms, tachycardia, exophthalmos, goitre, and tremor, this symptom complex may be incomplete in the developmental stage of the disease, and here the other symptoms are sufficient for the diagnosis. At the time of the first examination the degree of thyroid intoxication should be noted. The prognosis depends upon the hereditary, the social position of the individual, the type of the disease, and its early recognition. All these conditions being favorable, with good care and perseverance, there is a fair chance of recovery in those patients classed in the first group, under which group the author understands a mild form of the disease, marked toxæmia as well as exophthalmos are absent, while the thyroid is only slightly enlarged with a moderately increased heart action. The more advanced cases stand a better chance of recovery by operation, but this must not be delayed too long when organic changes have already set in. Recent clinical and experimental data still further emphasize the general belief that overactivity of the thyroid gland is quite sufficient to explain the appearance of the symptoms of Graves's disease and their disappearance after operation. Thyroidectomy should be the operation of choice, as giving the best results. Death following operation is due to shock and the use of a general anæsthetic; therefore this should be placed in only expert hands and local anæsthesia employed when possible. The introduction of the cytotoxic serum marks an important advance in the treatment of the disease, and perhaps may ultimately prove to be the only rational therapeutical method.

3. Indicanuria, Its Ætiology and Practical Significance.—W. H. Porter, of New York, sums up our knowledge of indicanuria as follows: It is one of the most important conditions in connection with clinical medicine, and is always the result of putrefactive fermentation. Animal proteids are more likely to undergo putrefactive fermentation than the vegetable class. Vegetable proteids are much more difficult of digestion

than are the animal class, hence they are less economic, and often detrimental to the system. Bacterial action is required to produce putrefactive fermentation in connection with the production of indican. The sulphur atom in connection with the formation of indoxyl potassium sulphate comes from the proteid molecule as the result of its oxidation reduction, and indican is primarily formed in the intestinal tract, and not in the liver, while numerous toxins are formed at the same time when the indican is produced. These toxins are absorbed into the circulation from the alimentary tract, and by their action upon the nervous system excite an almost endless variety of symptoms. The conditions favoring the production of indican are errors in diet, lack of outdoor exercise, defective digestive secretions, and profound disturbances in the working of the nervous mechanism. Indican in the urine is never normal, but always indicates an abnormal condition, because a putrefactive process can never be regarded as a normal or physiological phenomenon. Successful treatment of these conditions depends absolutely upon an accurate apprehension of the ætiological factors entering into the production of indicanuria, and also the best methods for the removal of those factors.

4. Locomotor Ataxia; a New Theory as to Its Cause.

—Denslow, of New York, states that we have two exciting causes of tabes: Long continued peripheral irritation causing it with and without a prior syphilitic infection, and chronic ergotin poisoning; and there is also a third cause, peripheral neuritis, producing a symptom complex very similar to that of tabes dorsalis. From this would it not be fair to presume that in the case of a disease which is produced by agencies quite other than syphilis, and where syphilis is known not to have entered into the condition, and where the pathological changes do not resemble in their inception, course, or form any of the manifold and characteristically usual ones of syphilis, the disease is not primarily due to syphilis, but that other agencies enter into its causation? If we allow for the present that peripheral irritation is the cause of the changes in tabes, there would be a possible explanation of the mode whereby these changes may be accomplished. It is known that the conducting nerve substance is a very simple tissue, almost protoplasmic, being little more than highly phosphorized fats in a weak saline solution. In other words, this portion of the nerves consists of colloid particles in suspension, and these colloid particles are precipitated and coagulated to a certain extent when electrically stimulated or peripherally irritated. Such peripheral irritation is that which is and has been constant for a period of time longer or shorter, as the case may be, but above all persistent and producing continuous, unconscious nervous stimulation. This irritation may exist for years without being known to the patient; in other words, without ever producing any local symptom. Such nervous action would keep up a condition of chronic coagulation, which in time would become permanent. Given this change the subsequent alterations of nerve tissue are but natural sequelæ, for with the increased sensory irritability consequent upon such coagulation, and the disturbance of the orderly action and balance of both the sensory nerves and their ganglionic cells, with their trophic connections, and given the continued persistence of the initial peripheral irritation, it would seem that there was sufficient to account for the perpetuation and progress of all the pathological changes that take place in the disease.

6. **Pilocarpine as an Adjuvant in the Treatment of Syphilis.**—William J. Robinson, of New York, says that pilocarpine is a most remarkable glandular eliminant, and glandular elimination is one of the most important factors in the successful treatment of syphilis. As such it is of value in all secondary manifestations

of the disease. There are many cases which become intolerant to the further use of mercury; the system seems supersaturated and continuing the mercury in such cases means injuring the patient. Discontinuing the mercury, giving pilocarpine in the interval, enables us to resume the former drug with excellent effect. Pilocarpine should be prescribed alone, either in pills or solution, and should be given in doses of two to eight milligrammes ($\frac{1}{32}$ to $\frac{1}{8}$ gr.), two or three times a day.

BRITISH MEDICAL JOURNAL.

June 1, 1907.

1. Remarks on Hernia, Particularly in Children,
By E. OWEN.
2. The Operation for Removal of the Entire Rectum and
Neighboring Lymphatic Area for Carcinoma,
By P. L. MUMMERY.
3. Squamous Celled Carcinoma of the Stomach and
Esophagus Imitating Tuberculous Ulceration of the
Intestine, By H. D. ROLLESTON and H. W. HIGGS.
4. Two Cases of Multiple Intestinal Obstruction,
By R. RAMSEY.
5. Two New Genera of Mematodes Occasionally Parasitic
in Man, By R. T. LEIPER.
6. The X Ray Treatment of Ringworm of the Scalp:
Singular Coincidence of Measles with the Defurium
of the Hair, By J. M. H. MACLEOD.
7. A Plea for the Use of Tuberculin Within and Without
Sanatoria, By W. C. WILKINSON.

1. **Hernia in Children.**—Owen states that the best way to reduce a congenital inguinal hernia in an infant is to hold the child up by its feet. In that position it is impossible for omentum to drop into the funicular process of the peritonæum. When the hernia has been thus returned, a pad may be firmly fixed over the inguinal canal by means of a roller bandage, or by a broad band of adhesive strapping. If a well fitting truss is at hand, so much the better. The child's legs should then be tied together, and he should be hung up with his head and shoulders just resting on the pillow. If it be found impracticable to keep the child hanging up by his legs, at any rate he can be kept more or less in the inverted position—*e. g.*, by fixing him on a small stretcher, which can be tilted so as to keep his head always low. The child's intraabdominal pressure must be reduced if we are to arrange for the permanent return of the prolapsed bowel without operation. Distention is chiefly caused by the presence of a large amount of gas in the bowel, due to the decomposition of improper food. So that great care should be taken with the diet, and the child should be given rhubarb and soda mixture with ginger and peppermint three times a day. All patent foods are to be stopped. A common cause of meteorism is the pernicious habit of sucking at an india rubber teat or "comforter." This should be stopped at once. The alternative to palliative treatment is of course an operation by an open incision, the ligation and removal of the sac, and the closing of the inguinal canal by suturing. The risks inseparable from the operation are so small that they may be almost disregarded. Each case should be considered on its own merits, and the admission of an age limit might be the cause of the benefits of the operation being refused to a most proper case for the simple but inadequate reason that the child was still very young.

2. **Cancer of the Rectum.**—Mummery describes his operation for the removal of the entire rectum and involved glands in cases of cancer of the rectum. No operation can be looked on as satisfactory unless aseptic healing of the wound is obtained. Sepsis in the wound is accountable for nearly 80 per cent. of the mortality from excision of the rectum. Preliminary colotomy should always be performed when it is not certain that the bowel above the growth can be effectually emptied and the bowel is strictured. It should also be done where the sphincter muscles are involved,

in which case a permanent inguinal colotomy should be performed. Among the advantages of operating in this manner the following may be mentioned: 1. The entire rectum and growth, cellular tissue, and lymphatics are removed *en masse*. 2. It renders it possible for the operation to be performed aseptically and for the wound to be kept clean after the operation. 3. It enables the normal opening of the bowel to be restored in almost all the cases that do not necessitate removal of the sphincters. 4. It permits of the removal of more extensive growths than either the perineal or Kraska methods. 5. There is none of the mutilation of the pelvis which is a necessary accompaniment of the Kraska operation—the removal of the coccyx does not seem to cause any subsequent inconvenience.

3. Cancer of the Stomach.—Rolleston and Higgs report the case of a man, aged forty years, which presented the following points of interest: 1. A large squamous celled carcinomatous ulcer, having all the naked eye appearances of a primary growth, in the stomach associated with a smaller and apparently more recent growth in the œsophagus. 2. Repeated intestinal hæmorrhages without hæmatemesis, which, taken in conjunction with the presence of acid fast bacilli in the material thought at the time to be sputum, gave rise to a diagnosis of tuberculous ulceration of the intestine.

6. X Rays in Ringworm.—Macleod states that the x ray treatment of ringworm of the scalp is now recognized as the most rapidly effective mode of treating the disease. The single exposure method of Sabouraud has replaced the uncertain method of repeated exposures and fractional dosage. The operator now expects the deflurium of the hair from the exposed area to take place on about the sixteenth day without any marked inflammatory disturbance. He reports an instance where an erythema occurred just as the hair was falling out, which was so marked as to cause alarm. It turned out, however, to be due to the singular coincidence of an eruption of measles with the deflurium of the hair.

LANCET.

June 1, 1907.

1. Punctured Fractures of the Base of the Skull.
By R. L. KNAGGS.
2. Surgical After Treatment.
By B. C. STEVENS.
3. Wright's Method of Testing the Blood and Urine, with Special Reference to the Concentration of the Serum and Urine (Expressed in Terms of Nace) and the Excretory Quotient in Natives of Bengal.
By W. M. MACLEOD.
4. Case of Multilocular Ovarian Cyst Successfully Removed from an Infant Aged Eleven Months.
By W. M. MACLEOD.
5. A Further Note on Rume's Test.
By R. LAKE.
6. "Congenital Piles." Notes on Three Cases in Which a Pilelike Condition Was Noted from Birth.
By F. V. MILWARD.
7. A Case of Tubal Pregnancy Associated with Ovarian Cyst.
By E. G. E. ARNOLD.
8. On the Value of the High Frequency Spark as a Local Application.
By E. R. MORTON.

1. Skull Fractures.—Knaggs reports eleven cases of punctured fracture of the base of the skull, and states that the salient features of these cases are: 1. The frequency with which their true nature is overlooked. Several days may pass during which the patient goes about as usual, then brain symptoms develop, and the real nature of the injury is only revealed at the autopsy. There are a number of paths by which the offending instrument reaches the base of the skull. In the order of their frequency these are: (a) Through or across the orbit; (b) through the mouth, pharynx, or nose; (c) inside the zygomatic arch; and (d) the convex portion of the base may be wounded directly.

skull. The wounds are often inflicted and the weapon withdrawn with lightning like rapidity. The patients are usually brought to the hospital in a state of unconsciousness. The wounds are often inflicted where the wounding instrument is brittle, or becomes almost impossible. The offending instrument should always be inspected for breakage. 3. The tendency to septic complications if the more immediate danger of death from intracranial hæmorrhage and cerebral injury is escaped. The midregion of the middle fossa is packed with bloodvessels, and is the most dangerous region at the base in which a penetrating fracture can occur. The later or septic complications are meningitis, encephalitis, and cerebral abscess. 4. Their fatal character. The number of cases of recovery are very few.

2. Surgical After Treatment.—Stevens brings out the following points regarding the after treatment of surgical cases: After an abdominal operation the patient should be propped up a little after two hours. The dorsal position is uncomfortable, is the cause of acute cystitis in women, and there is risk of "acute decubitus." Children should not be strapped down. The right lateral recumbent position is best for natural drainage, and the semiream bent dorsal position for artificial drainage. Thirst should be quenched by frequently rinsing the mouth with hot or cold water, by giving large saline enemata, or by leaving saline solution in the abdomen. Much of the pain is due to spasm of the abdominal muscles, which can be relieved by propping the patient up and raising the knees with a pillow. Morphine should not be given, but rather atropine, or sulfonal. Opium masks the symptoms. In most cases rectal feeding is not necessary. Milk should be avoided, as it is hard to digest, and leaves a bulky residue. Beef tea is an over vaunted diet, as it contains only three and a half per cent. of proteins. The best foods are raisin tea, albumin water, and plasmon powder in water, tea, or broth. In some cases a fluid dietary sets up flatulence. A catheter should not be passed until twenty-four hours after the operation. The bowels should be opened on the third day by a simple enema. A little rise in temperature on the first two days is usually reactionary, and means nothing serious. Usually if the pulse keeps below 100 the patient is doing well, and there is no danger of peritonitis. Where artificial drainage has been instituted it should be renewed in forty-eight hours. Three weeks in bed is the usual period of rest after a laparotomy. Sutures should not be removed early unless causing irritation. In case of "stitch abscess" the wound should be cut and left until the wound has been purified, for fear of infecting deeper structures. Surgical shock must be prevented by judicious anteooperative treatment. The patient's system should not be drained of fluid by starvation and purgation. Shock is due to exhaustion and breakdown of the vasomotor centre; the blood collects into the splanchnic area, and the patient bleeds into his own veins. Neurotic shock is seen in persons whose nervous centres are exhausted, secondary shock in debilitated and emaciated people. The treatment of neurotic shock is by morphine. Immediate and secondary shock call for something for the heart to act on—this is furnished by subcutaneous or venous infusion of saline solution. Subcutaneous infusion is safer, but takes longer. Adrenalin is also useful. Meteorism is often preventable by using the flatus tube from the first. Peritonitis requires prompt treatment, such as a high turpentine enema, calomel, and saline purges. If it does not yield, an immediate second operation may be necessary. For persistent

vomiting gastric lavage is the best treatment, or twenty grains of bicarbonate of soda in a tumblerful of water. For persistent hiccough try tongue traction or pressure or pressure on the phrenic nerve. Postoperative hæmatemesis usually occurs within the first forty-eight hours; to prevent it, calcium chloride should be given. Parotitis can be prevented by attention to oval asepsis. Postoperative mania and neurasthenia must be treated symptomatically and tactfully. Where adhesions form the position of the patient should be frequently changed. In hernia cases the bowels should be opened early in order to prevent adhesions. In breast cases leave the arm free and use a many tailed bandage. In gallbladder cases cellulose wadding is the best absorbent for the bile. Salol or boric acid should be given after operations on the urinary bladder. In knee joint operations do not hesitate to sacrifice a stitch if there is tension. In fracture of the patella never fix the knee joint, but begin passive and active movements very early. Never use strappings in circumcisions; just plenty of boric ointment on lint with cotton wool and a napkin.

LA PRESSE MEDICALE.

May 15, 1907.

1. The End of the Theory of Myogenesis, By E. DE CYON.
2. The Duration of the Confinement to Bed After a Physiological Accouchment, By L. BOUCHACOURT.
2. The Duration of the Confinement to Bed After Physiological Accouchment.—Bouchacourt divides his paper into three parts. In the first he discusses the question whether such confinement is an absolute necessity, and decides it in the affirmative as regards women who have attained a certain degree of civilization; in the second he shows the impossibility to establish a general formula; and in the third he quotes the diverse opinions which have been given in answer to this question.

May 18, 1907.

1. Measures of General Prophylaxis and of Treatment Applicable to Soldiers and Sailors Returning Home on Account of Pulmonary Affections, By L. LANDOUZY.
2. The Severe Anæmias in the Course of Acute Infectious Diseases, By L. RIBAUDEAU-DUMAS and POISOT.
2. The Severe Anæmias in the Course of Acute Infectious Diseases.—Ribateau-Dumas and Poisot report two cases in which children were attacked by a form of anemia which resembled pernicious anemia and proved fatal in the course of acute infectious diseases.

May 25, 1907.

1. Appendicular Dyspepsia, By J. FOUCAUD and L. SALIGNAT.
2. Palliative Surgical Treatment of Cancer of the Neck of the Uterus. Ovarian Castration, Ligation of the Hypogastrics, Curettage of the Cervix, By F. JAYLE.
3. The Perforation of the Epigastric Artery in Paracentesis of the Abdomen, By C. LIAN.
4. Fever of Alimentary Origin, By R. ROMME.
1. Appendicular Dyspepsia.—Foucaud and Salignat distinguish three types, the hyposthenic, which is the most common, as it includes 58 per cent. of the cases, the hypersthenic, and the gastralgie. The diagnosis by the existence of dyspeptic, intestinal, or toxiinfectious troubles preceding or accompanying the attacks of appendicitis, or alternating with them. Treatment may be medical or surgical. Medical treatment consists in regulation of the diet, disinfection of the intestines, and modification of the general neuropathic condition. Nitrogenous food should be reduced, all excitant and indigestible substances forbidden, and a vegetable diet should predominate. The disinfection of the intestines may be produced by the periodical use of laxatives and intestinal lavage. To improve the general and gastric neuropathic condition, general and local hydrotherapy

may be used together with calcium bromide, belladonna, valerian, and codeine. Surgical treatment consists of appendectomy.

3. The Perforation of the Epigastric Artery in Paracentesis of the Abdomen.—Lian reports a case in which this accident happened.

May 24, 1907.

Congenital Cardiovascular Affections Due to Hereditary Syphilis. Study of the General Pathology,

By L. LANDOUZY and LAEDERICH.

Congenital Cardiovascular Affections Due to Hereditary Syphilis.—Landouzy and Laederich report a case of cardiac malformation and aortic hypoplasia met with in a child born at term, covered with the characteristic eruption of secondary syphilis, when it came under observation, and died of bronchopneumonia at the age of six weeks.

BERLINER KLINISCHE WOCHENSCHRIFT.

May 6, 1907.

1. Gun Shot Wounds of the Thorax and Epigastric Tension, By O. HILDEBRAND.
2. Concerning Streptococcus Erythema and Its Relation to Scarlet Fever, By G. GABRITSCHESKY.
3. Osteomata as Exostoses and Bones in the Skin and Tendons, By W. KOCH.
4. Concerning Quinquaud's Phenomenon and Its Frequency in Non Drinkers, in Alcoholism, Hysteria, Tabes, and Other Nervous Diseases, By L. MINOR.
5. Concerning Typhus Immunisation, By F. MEYER and P. BERGELL.
6. Studies in Regard to Typhus and the Typhus Serum, By H. ARONSON.
7. Cancer of the Stomach and Its Surgery (Concluded), By W. KAUSCH.
8. From a Trip for Study in Russia, By A. MAGNUS-LEVY.

1. Gunshot Wounds of the Thorax and Epigastric Tension.—Hildebrand reports several cases of gunshot wounds of the chest in which epigastric tension was marked, although there was no injury to the abdomen, and shows anatomically how from the arrangement of the nerves shot wounds which involve the posterior or lateral walls of the thorax may readily induce epigastric tension, although the abdomen has not been injured in the least. It follows that in such cases the presence of epigastric tension does not indicate an abdominal injury, and is not an indication for laparotomy.

2. Streptococcus Erythema.—Gabritschewsky alleges that the streptococci are able to induce in septic forms of infection an erythema and exanthem which resembles those of scarlet fever. An erythema and exanthem similar to those of scarlet fever can be produced by means of a vaccine prepared from the streptococci of scarlet fever. The punctate erythema and exanthem of scarlet fever, scarlatinoid, and streptococcus vaccine can be considered a toxicodermatitis of infectious origin and as pathogenetically identical. The fact that in human beings the punctate eruption, together with all the other peculiar symptoms of scarlet fever appear under the influence of the vaccine from the streptococcus of scarlet fever furnishes a true, determinate factor in favor of the recognition of the streptococcus as the specific cause of scarlet fever. This fact furnishes also a new scientific basis for both the practical use of serum therapy in scarlet fever and also for streptococcus vaccination as a protection against both the complications and the disease itself.

4. Quinquaud's Phenomenon.—Minor has made a very extensive investigation, as indicated by the title of his paper, of which only a portion is presented in this issue. A very interesting point is that he found in fourteen total abstainers, ranging in age from twenty-two to thirty-five, ten, 71.3 per cent., with Quinquaud's phenomenon which was well marked in 50 per cent. In a group of twenty-five moderate drinkers the phe-

hemoglobin was present in fourteen, 36 per cent., very marked in 28 per cent.

7. Cancer of the Stomach and Its Surgery.—Kausch believes that the operative results obtained in cancer of the stomach are not so bad as is generally thought by surgeons, physicians, and laity alike. He urges that such patients should be sent to the surgeon by their physicians at an earlier period, although he acknowledges that a true early diagnosis of cancer of the stomach is not possible with the means at our command, because a very considerable portion of the cases of cancer of the stomach are latent and present no symptoms until they have grown too far to be operable.

MAY 1907

1. Concerning Pseudoanæmia. By H. STRAUSS.
2. Concerning the Nature of Tumors, By WESTENHÖFFER.
3. Influences of Salt and of Sugar in Infants, By L. SACHS.
4. The Sensibility of the Abdominal Organs and the Influence Exerted on them by Injections of Cocaine, By L. KAST and S. J. MELTZER.
5. The Rendering Inactive of the Complements in Saltless Media (continued), By SACHS and TERUUCHI.
6. Concerning Quinquad's Phenomenon and Its Frequency in Nondrinkers and in Cases of Alcoholism, Hysteria, Tabes and Other Nervous Diseases (Continued), By L. MENOR.
7. Concerning Some Modern Physical Methods in the Treatment of Chronic Diseases of the Lungs, By A. LAQUEUR.

1. Pseudoanæmia.—Strauss denominates pseudoanæmia, in analogy with pseudoleucæmia, pathological conditions in which the external appearance of the patient is indicative of the presence of anæmia, while the examination reveals a normal condition of the coloring matter and of the morphotic elements of the blood. The diagnosis therefore depends on the determination of the hæmoglobine. Such patients should not be treated with iron.

2. The Nature of Tumors.—Westenhöffer says that the nature of a true tumor is to be discovered in the facts that its cells have lost their distinction and functional relation to the organism and have reacquired the peculiarities of an ovum. Its cells are consequently not human cells, and their peculiarities are parasitic for the organism.

4. The Sensibility of the Abdominal Organs and the Influence Exerted on Them by Injections of Cocaine.—Kast and Meltzer assert that cocaine, even in small doses, exerts not only a local, but also a general anæsthetic effect on the abdominal organs.

5. The Rendering Inactive of the Complements in Saltless Media.—Sachs and Teruuchi arrive at the following conclusions: 1. In a medium poor in salt guinea pig serum forms a more or less hæmolysis of the ox blood, which is absent in a salt solution. 2. In a solution of cane sugar the hæmolysis of the ox blood is replaced by a complex hæmolysis. 3. This absence of the hæmolysis in solutions poor in salt is due not to the absence of the action of amboceptors, but to an inactivity of the complements. 4. This inactivity of the complements is to be distinguished from the permanent destruction of the complements which takes place in a solution poor in salt. 5. The destruction of the complements in a solution poor in salt does not take place (a) at a low temperature, (b) when the serum is very thin, (c) when an old serum is used, (d) when a fresh serum heated for ten minutes to 51° C. is used. 6. The quality of the serum is of great importance in the ability to destroy the complements in addition to the poverty of salt of the solution. 7. The occurrence is explained by the presence of a ferment like component of the serum which acts only in a certain concentration and varies greatly in quantity in different individuals. This ferment destroys the complements only in solutions which are poor in salt, or only when

they may have undergone a weakening modification in such a medium. If the action of the ferment is absent, a reformation of the complements and the true complement takes place after the solution is salted. A large quantity of amboceptor is required to guard the complement against destruction in a medium poor in salt.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT

MAY 1907

1. A New Animal Serum Against Microbic Infection in Man.—By DEUTSCHMANN.
2. The Influence of Nicotine, Coffee, and Tea on the Digestion.—By CRÄMER.
3. Concerning the Influence of Tobacco, Coffee, and Tea on the Digestive Organs.—By CRÄMER.
4. The Operation for Hepatic Colic.—By BRENTANO.
5. Some Remarks Regarding the Action of Stovaine on the Intestines.—By BRUNS.
6. Does the Lumbar Injection of Stovaine Influence the Motor Functions of the Intestines?—By ROITH.
7. A Case of Atoxyl Poisoning.—By WÄLSCH.
8. Glove for Electric Massage.—By ARNDT.
9. A Metal Case for the Carrying of Obstetrical, Gynecological, and Surgical Instruments.—By LIEPMANN.
10. Modifications of a Two Bladed Vaginal Speculum.—By MARCUS.
11. A Bandage for the Fixation of Dressings on the Penis.—By BECKER.
12. Dr. Hermann A. Beckhardt.—By SPILL.

1. A New Animal Serum Against Microbic Infection in Man.—Deutschmann reports a number of cases in which recovery followed the use of a serum intended to protect the human organism, with particular reference to the eye, against the action of pneumococci, staphylococci, and streptococci, or their toxins.

3. Influence of Nicotine, Coffee, and Tea on the Digestion.—Crämer asserts to have demonstrated from observation and experiment that tobacco, coffee, and tea are not alike in their effect on the digestive organs, but that under certain circumstances they can produce serious disturbances, or prevent the healing of troubles produced by other causes.

4. The Operation for Hepatic Colic.—Brentano urges the importance of a thorough search for additional stones after the removal of the one which is evidently the actuating cause of the colic.

6. Does the Lumbar Injection of Stovaine Influence the Motor Functions of the Intestines?—Roith is inclined to answer this question in the negative.

7. A Case of Atoxyl Poisoning.—Wälsch reports a case in which he used atoxyl for about three weeks in the treatment of syphilis in a man, thirty years of age. Toxic symptoms then developed from which the patient eventually recovered. The case demonstrates that care must be exercised in the treatment of syphilis with atoxyl. The symptoms produced might be said to be a combination of the symptoms of arsenic and aniline poisoning. A favorable effect upon the course of the syphilis was not demonstrated.

RIFORMA MEDICA

MAY 1907

1. A New Contribution to the Semeiology of the Pancreas.—By ALDO VASANTINI.
2. Echynococcus Cysts of the Mesentery.—By GIUSEPPE SACCHINI.
3. Operation for Sarcoma of the Ilium.—By FRANCESCO LUDOVICO.
4. Mental Disturbances in Patients with Skin Diseases.—By SPILL.

1. 'Diagnosis of Pancreatic Disease.—Vasantini emphasizes the importance of examining the faces for the purpose of diagnosing pancreatic disease. This examination concerns especially the amount of fat contained in the faces, this amount being indicative of the sufficient secretion of the pancreatic juice. The presence of fat in considerable quantity shows distinctly

under the microscope in fæces stained with Sudan III, or the presence of fatty acids crystals or soaps. Extraction with ether in Soxhlet's apparatus, however, is a more accurate method of determining the exact amount of fat in the fæces. When there is an increased amount of fats the condition is known as a fat dyspepsia. The absence of bile from the fæces can also be easily determined by extraction with chloroform. The old idea that a pale color indicates the absence of bile in the fæces is erroneous, as such light colored fæces often become brown on exposure to air and light, owing to the transformation of the bilinogen which they contain into the dark colored sercobilin. The light color of these fæces may be due to an excessive quantity of fat and not to the absence of bile. Varanini reports a case in which the examination of the fæces demonstrated pancreatic disease. In this case the autopsy proved the diagnosis to have been correct.

4. Mental Disease in Dermatological Patients.—Sprecher speaks of cases of imaginary parasitic skin disease in which there is in reality no affection of the skin, but the patients cannot rid themselves of the delusion that they are infested with parasites. Levy, of Paris, has written in 1906 an elaborate thesis on this form of delirium of parasitism. This psychosis at times takes the form of an imaginary parasite within the abdomen, the head, or the uterus. In other cases there are actually organic conditions which suggest the presence of a parasite of some sort. Thus a diarrhoea makes the patient think that he has a snake in his abdomen, a hernial sac makes him think of a number of worms, a cancer of the omentum makes him think of frogs, a cancer of the pylorus of a colony of rats which are constantly gnawing his entrails. Patients with various skin diseases imagine that their affection is caused by some minute animalcules which they think they can feel crawling about their skin, etc. Some patients with acne think that the comedones are little animals which they can express from the papules or pustules. In some instances the physician succeeds in applying such treatment as to make the patient think that the animals, whatever they may have been, are successfully destroyed and thus that the resulting skin disease has been cured. A case of this type is reported in which the patient fancied her scalp to be infested with minute worms. The woman had seven distinct spots of alopecia areata, and had worn a wig. It was found that some moths, such as are found in wool, had gotten into the wig and had caused the fancied disease of the scalp.

May 4, 1907.

1. A Quantitative Method for Determining Bilirubin in the Urine, By GIUSEPPE SEVERONIO.
2. On the Reaction of Testevin Jacquemet, By G. BUFALINI.
3. Erysipelatous Pneumonia, By P. SYLVESTRI.
4. Contribution to the Study of Tumors of the Temporo-Sphynoidal, By GIUSEPPE FINZI.

1. Quantitative Estimation of Bilirubin.—Severonio's method is as follows: The morning urine, freshly voided, is tested. Its reaction is determined, and dilute acetic acid is added if necessary to make it acid. Into a small separating funnel are measured accurately by means of a pipette from 1.5 up to 5 c.c. of urine, according to the amount of pigment present. The urine is next diluted with from 5 to 10 c.c. of absolutely neutral distilled water, and from 5 to 8 c.c. of chloroform are added. The funnel is shaken gently but rapidly about fifteen times, and the two layers are allowed to settle well. The urine and the chloroform are colored yellow by the biliary pigments which have been dissolved. The chloroform is accurately separated into a large and thoroughly dried test tube. Any adherent drops of chloroform which remain in the lower part of the funnel should be wiped away with cotton and the

latter added to the chloroform in the test tube. To the contents of the funnel some more chloroform is added, and it is shaken as before. The extraction is repeated until the chloroform is completely colorless. As there may be some traces of bilirubin in the urine, even then the latter should be saturated with ammonium sulphate and treated with a few drops of dilute sulphuric acid and with chloroform. When the mixture is shaken in the funnel the last traces of bilirubin will pass into the chloroform, and this should be added to the remainder of the extract in the test tube. Into the entire amount of chloroform collected after these extractions are poured from 15 to 20 c.c. of decinormal soda solution (making note of the amount), and the mixture is shaken gently. The chloroform yields its yellow color to the alkaline solution, and the mixture should be shaken until the settling chloroform is completely decolorized. When the two strata have settled well, 10 c.c. of the alkaline solution are accurately measured into a pipette and poured into an absolutely dry test tube. The solution is neutralized accurately by means of dilute acetic acid, using litmus paper as an indicator. The next step in the process must be very accurately performed. Two c.c. of pure chloroform are added, and a centinormal solution of iodine is titrated into the mixture, the test tube being gently moved after each drop to observe the color of the chloroform in the light. The iodine is added, drop by drop, until the chloroform just begins to turn very faintly pink. The number of c.c. of iodine used is then read off. Each c.c. of centinormal solution of iodine corresponds to 0.000945 gramme of bilirubin.

ROUSSKY VRATCH.

April 28, 1907.

1. On a Contracture of the Knee in Meningitis (*To be continued*), By B. M. KERNIG.
2. On the Pharmacology of Bornyval, By I. M. DEMIDOFF.
3. The Diagnosis of Human and of Animal Blood in Medicolegal Investigations (*To be continued*), By F. G. MICHAELSON.
4. Immunization of Cattle Against the Poison of Spiders (*Lathrodectus Trecdecimguttatus*).

2. The Physiological Action of Bornyval.—Demidoff studied experimentally the action of bornyval, the isovalerianic ether of borynol, which is asserted to be an efficient nerve sedative. He found that in small and moderate sized doses in cold blooded animals bornyval excites the central nervous system and increases the reflexes, and in toxic doses produces convulsions. The motor nerve endings in cold blooded animals are not paralyzed by it, and in frogs the heart is at first stimulated and later depressed. In warm blooded animals bornyval stimulates the central nervous system and produces convulsions. After the period of stimulation there follows a period of quiet and lethargy. The drug does not act upon respiration to any extent. The external temperature is raised, the internal slightly lowered by it. The blood pressure is at first raised, then lowered. The drug acts as a depressant without preliminary stimulation upon the muscular nervous apparatus of the isolated heart of warm blooded animals. Bornyval acts like valerian, being at once a tonic and a sedative to the nervous system.

May 5, 1907.

1. On Contracture of the Knee in Meningitis (*To be continued*), By B. M. KERNIG.
2. The Advances of Surgery During the Past Twenty-five Years, By G. I. TURNER.
3. The Diagnosis of Extrauterine and Tubal Gestation, By V. N. ORLOFF.
4. The Sensitiveness of the Skin in Diseases of the Internal Organs, By B. I. VILIAMOFFSKI.
5. The Origin and Significance of Reduplicated and Accessory Cardiac Sounds and the Character of the Venous Pulse in Neurasthenia of the Heart.

3. Diagnosis of Extrauterine and Tubal Gestation.

Orlen reports three cases of extrauterine gestation which illustrate the difficulty in making the diagnosis. In some cases in spite of all signs pointing to pregnancy the latter may not be present. Conversely not a single sign of pregnancy may be present. When the patient's condition allows delay, it is best to keep her under observation for some time. Very often even a short time of observation will clear up the diagnosis. Curetting of the uterus for the purpose of obtaining material for microscopical examination, the introduction of a sound in order to make sure of the absence of a fetus and the puncture of the vaginal wall in order to reach the tumor, are all unsatisfactory and far from innocuous procedures. If an extrauterine gestation has once been made out it is easy to diagnosticate a tubal gestation. It is characterized by periodical paroxysmal pain, such as occurs also in uterine gestation. After each of these attacks of pain the patient's condition grows worse, the pulse beats faster, the swelling increases, and there may be signs of peritonitis and fever. When there is a discharge of decidual tissue from the uterus, the diagnosis is, of course, made quite easy.

ANNALS OF SURGERY

June, 1907.

1. Plastic Resection of the Mammary Gland.
By J. C. WARREN.
2. The Contributions of Surgery to a Better Understanding of Gastric and Duodenal Ulcer,
By W. J. MAYO.
3. End Results of Benign Lesions of the Stomach Surgically Treated,
By J. C. MUNRO.
4. Remote or Indirect Subperitoneal Drainage in the Extraperitoneal Closure of Persistent Fæcal Fistula,
By R. C. COFFEY.
5. Lipoma of the Intestine Occurring in a Child Thirteen Months Old and Causing Symptoms of Intestinal Obstruction,
By G. CHANDLER and L. K. BALDAUF.
6. A Malignant Type of Pseudomyxoma Peritonæia Penetrating the Spleen and Colon,
By M. W. MYER.
7. Primary Typhlitis Without Appendicitis,
By C. A. McWILLIAMS.
8. The Adequacy of Local Anæsthesia in Inguinal Hernia Operations,
By J. A. BODINE.
9. Cysts of the Suprarenal Gland,
By A. J. McCOSH.
10. Toxic Nephritis Dependent Upon Surgical Conditions,
By N. JACOBSON.
11. The Diagnosis of Obscure Cases of Renal and Ureteral Calculus,
By A. T. OSGOOD.
12. Tuberculosis of the Testicle,
By E. L. KEYES, JR.
13. I. Fracture of the Outer Tuberosity of the Humerus with Dislocation of the Humerus into the Axilla. Immediate Reduction of Dislocation. On the Seventh Day Nailing of Fragments in Place. II. Fracture of the Anatomical Neck of the Humerus and Dislocation of the Head into the Axilla, with Fracture of the Shaft. Difficult Removal of Head of Humerus,
By W. W. KEEN.
14. Partial Gastrectomy,
By C. H. FRAZIER.

1. **Plastic Resection of Mammary Gland.**—Warren describes this method of operation for tumors, especially in young women, of the type of periductal fibromata. As they are sometimes sarcomatous, he always advises their removal, and if an examination with the microscope made at the time of operation shows that they are benign, the patient is spared the mortification of a mutilating operation. He believes that all cysts of the mammary gland, whether large or small, should be removed, as cancer has occasionally developed in such cysts. The cysts being usually grouped in one quadrant, they are easily removed entire in a wedge shaped mass through a V incision. The author has performed this operation eighty-five times without mortality. He applies the dressing so as to produce lateral compression of the lower and upper hemispheres, and has a particular bandage and breast supporter made for the purpose. He finds this operation a satisfactory substitute for the disfiguring exploratory incision on

the anterior surface of the breast, for the uncertainty of future and for the possibility of

2. **Gastric and Duodenal Ulcer.**—Mayo divides these ulcers surgically into two classes, (1) the indurated ulcer, which can be seen and felt during operation by means of the scar, (2) the nonindurated ulcer, which cannot be identified from the outside of the stomach or duodenal wall—indeed, it is often difficult to find it even when the stomach is opened. The failures of surgery usually occur in this second group, because the ulcer is not located and its existence may be problematical, or the condition is confounded with pyloric spasm, atonic dilatation, gastropnoia, and the gastric neuroses, or other nonsurgical conditions, or the ulcer does not indicate operation, as it does not interfere mechanically with the progress of food. The value of surgical contribution to our knowledge of nonindurated ulcer is negative, and consists in teaching errors as to diagnosis and pointing out lines of future progress. At the present time the author does not consider that a diagnosis of mucous or other undemonstrated ulcer indicates a surgical operation unless there are such complications as perforation, hæmorrhage, or obstruction.

3. **Benign Lesions of the Stomach.**—Munro analyzes one hundred and fifty cases which have been followed in most cases for two years from the time of operation. Immediate and permanent benefit has been obtained in congenital pyloric obstruction and perforated chronic ulcer. Good results have also been obtained in (a) active ulcers near the pylorus, but not necessarily occluding it; (b) in ulcers of the duodenum, but not in all cases; (c) in chronic ulcers of the lesser curvature and anterior wall in the pyloric half of the stomach, especially when there is active hæmorrhage; (d) in some cases of saddle ulcer; (e) in ulcers of the posterior wall, near the cardia, which infiltrate toward the upper edge of the stomach; (f) in ulcers of the lesser curvature when combined with adhesions which interfere with the motion of the stomach; (g) in some ulcers of the posterior wall when the pylorus is not mechanically interfered with; (h) in ulcers at the œsophageal angle of the lesser curvature; (i) in ulcers of the greater curvature; (j) in hour glass stomach; (k) in stricture of the pylorus; (l) in thickening of the pyloric ring without evidence of an active ulcer; (m) in dilated sagging stomachs secondary to some process in or near the pylorus which interferes mechanically with the progress of the gastric contents.

Proceedings of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-second Annual Meeting, held in Washington, on Tuesday, Wednesday, and Thursday, May 7, 8, and 9, 1907.

The President, Dr. FRANCIS P. KINNICUTT, of New York, in the Chair.

The Pathological Anatomy of Lymphosarcoma and Its Status with Relation to Hodgkin's Disease.—In this paper Dr. W. G. MACCALLUM, of Baltimore, said that at present the classification of the enlargements of the lymphatics, based as it was upon morphology and pathological histology, was insufficient. When we had arrived at some definite knowledge of the ætiology of these conditions, our ideas regarding them would be cleared. The author agreed to the ideas advanced by Dorothy Reed concerning the nature of Hodgkin's disease. The pathological tissue extended through the capsule of the gland. He showed specimens in which there was extensive extension into the lungs. Lympho-

sarcoma invaded the other organs by contiguity. Histologically, the tissue was composed of a delicate stroma in which the cells, which were all of one character, lay; a picture quite different from that of Hodgkin's disease. He exhibited a specimen from a case of lymphosarcoma involving all the organs in the mediastinum, one involving all the abdominal organs, and one involving the intestines, suprarenal bodies, pancreas, etc. There was not a very sharp line between lymphatic leucæmia and lymphosarcoma, and there was a condition known as leucosarcoma which presented characteristics of both leucæmia and lymphosarcoma. It was possible that lymphosarcoma might be the result of an infection which started in the pharynx or the intestines. Histologically, the growths did not exactly resemble tumors.

Dr. H. A. CHRISTIAN, of Boston, said that the distinction between these various diseases, as made at present, was rather more definite than was justified by the number of borderland cases. The classification from the histological point of view was not confirmed by the clinical findings in the cases. He referred to a number of cases of Hodgkin's disease which had occurred in the Boston City Hospital.

Dr. ALFRED S. WARTHIN, of Ann Arbor, Mich., said that the distinction between Hodgkin's disease and lymphosarcoma did not appear to him to be so sharp as had been suggested by MacCallum. He referred to a case which was clinically one of lymphosarcoma of the mediastinum, but which was histologically a case of Hodgkin's disease.

Dr. MACCALLUM said that he had seen a number of cases which were borderland cases; clinically Hodgkin's disease, but histologically not Hodgkin's disease. He depended upon the histological examination for his final opinion.

Chylous Ascites and Chylous Pleurisy in a Case of Lymphocytoma Involving the Thoracic Duct.—Dr. GEORGE DOCK, of Ann Arbor, Mich., said in this paper that the distinction between Hodgkin's disease and lymphosarcoma was not always sharp. He reported the case of a man, aged fifty-nine years, who complained of an abdominal tumor of about six years' duration. One year before his death he had chylous ascites and chylous pleurisy. The superficial lymph nodes were moderately enlarged. The abdominal tumor resembled a large spleen in shape, and other smaller abdominal tumors could be made out. There were 8,651 leucocytes in the circulating blood, with a relative increase of lymphocytes. A differential count showed 69.8 per cent. of lymphocytes, 26.9 per cent. of polymorphonuclears, 1.3 per cent. of eosinophiles, and 3 per cent. of basophiles. At autopsy there was found a tumor of the mesentery which was continuous with the thoracic duct, converting that structure into a tumor from 4 to 6 cm. thick, extending all the way up into the neck. There were sarcomatous growths in the lungs, the liver, and the kidneys resembling lymphosarcoma and leucæmic deposits. Clinically, the case was one either of lymphatic leucæmia or of Hodgkin's disease; anatomically, it was a case of lymphosarcoma. The patient presented a history of untreated empyema after pneumonia. The empyema ruptured, and the tumor developed near the point at which the rupture took place.

Dr. MACCALLUM said that this was a borderline case which belonged to the class of leucosarcomata. He referred to a similar case.

Dr. WARTHIN referred to four cases of lymphosarcoma, one of which subsequently became leucæmia. He had seen transitions from leucæmia with small cells into another form with large cells. He thought that all these cases represented overgrowths of the parent cells of the leucocytes, and he believed that they might be transformed into one another in the course of their

development. He had suggested the term leucoblastoma for them.

The Histological Lesions in Experimental Glanders.—In this paper Dr. C. W. DUVAL, of Montreal, said that the *bacillus mallei* might be so modified that when it was injected into animals it might produce exudative, proliferative, or degenerative lesions. He exhibited a number of lantern slides showing these various lesions: 1. A bloodvessel with a focal lesion in its walls composed of a collection of polymorphonuclear leucocytes. 2. A spleen in which fibroid thrombi filled up the blood sinuses. 3. A suprarenal body with necrotic and swollen cells surrounded by epithelioid cells and polymorphonuclear leucocytes. 4. A liver showing focal necrosis due to plugging up of the capillaries by fibrin thrombi and multinuclear cells. 5. A lung containing lesions similar to miliary tubercles. 6. A testicle showing focal collections of epithelioid cells and giant cells in the tunica vaginalis. 7. A testicle showing a number of glanders tubercle in the tunica vaginalis. 8. A heart muscle showing a focal collection of lymphoid and plasma cells. The giant cell of glanders came from the endothelium of the blood and lymph spaces. Glanders tubercles in the spleen were composed of epithelioid and giant cells. In the heart there was vacuolation of the muscles. The bloodvessels showed thickening of the endothelial lining, and degeneration of the media, particularly in its innermost zone, with sacculations.

Dr. MACCALLUM referred to a patient who had died from pneumonia, due to the *Bacillus mallei*, similar to caseous bronchopneumonia. The exudate was organized at the margin and necrotic in the centre.

Multiple Myeloma, the Histological Comparison of Six Cases.—Dr. HENRY A. CHRISTIAN, of Boston, said in this paper that the cells in myelomata had been considered by various observers to be premyelocytes, myelocytes, lymphocytes, plasma cells, or erythroblasts. Almost all authors agreed that myelomata formed a distinct class of tumors and that had their origin from the bone marrow. These differences of opinion as to the nature of the tumor cells must arise either from the fact that a variety of tumors was included under the term myeloma, or from the fact that different observers had assigned different origins to cells possessing similar histological characteristics. Few observers had studied as many as two cases. The author had compared cases and found that they possessed many characteristics in common, and that there were minor individual differences, but these were no greater than occurred in individual examples of other tumor groups. The origin of the tumor was from cells of the bone marrow. In normal bone marrow a few cells bore a close resemblance to the cells of these myelomata, and could be regarded as the ancestral cell from which the tumor cells originated. It did not seem possible to determine exactly the nature of this cell type. It bore a strong resemblance to a plasma cell, but presented certain differences. The latter were prominent in some of the tumors. There was no evidence of an erythroblastic origin.

Typhoid Endaortitis.—Dr. WARTHIN reported two cases of death following typhoid fever in which there were marked lesions in the aorta. These lesions consisted of fatty degeneration of the intima in long lines corresponding to the axis of the bloodvessel. Histologically, the intima was elevated, and there was a marked fatty change between the yellow elastic fibres. In the majority of cases the lesion was confined to the intima. He was able to demonstrate bacilli similar to typhoid bacilli in these lesions. He considered this as the first step in the development of arteriosclerosis.

The Antagonistic Action of Alcohol and Carbolic Acid.—Dr. A. E. TAYLOR, of Berkeley, Cal., said in this paper that alcohol was commonly stated to exert

an antagonistic action to carbolic acid. The matter might be tested directly by employing the antiseptic action of carbolic acid as the medium of measurement. A yeast, known to be tolerant to alcohol up to a concentration of nearly fifteen per cent., served as the subject of the experiment. By the action of the froth of this yeast upon a standard solution of sugar, with relative and varying quantities of carbolic acid and alcohol, the measurement of the carbonic acid evolved in the fermentation would be the index of the activity of the yeast, and, conversely, of the action of the carbolic acid upon the yeast and of the effect of the alcohol upon the antiseptic influence of the carbolic acid. The experiment indicated that alcohol had no direct antagonistic action to carbolic acid. It did not lessen the antiseptic action of carbolic acid. Taylor considered it fair to apply the result of this experiment to human tissues, so far as the chemical viewpoint was concerned. Sollmann had shown that, physically, alcohol was an antidote to carbolic acid only in so far as it acted as a diluent.

Dr. TORALD H. SOLLMANN, of Cleveland, said that it made no difference whether or not phenol and alcohol were given together. There was no chemical antagonism between the two substances.

Demonstration of Large Phagocytic Cells from the Circulating Blood.—Dr. H. A. CHRISTIAN and Dr. F. VAN NUYS, of Boston, demonstrated cells which were phagocytic in character, which had been obtained from the circulating blood of a Russian Jew who was suffering from aortic insufficiency, chronic bronchitis, and indefinite indications of a tumor. During the course of his disease his leucocytes had increased from 10,000 to 98,000 in twenty-four hours. There was no autopsy.

Dr. RICHARD C. CABOT, of Boston, referred to a case which was similar, with the exception of the symptoms of tumor. He called attention to the fact that a difference in the cell count was often due to technical defects. It was sometimes possible to demonstrate great differences between the leucocyte count of the blood obtained from the finger and of that obtained from the ear.

Unclassifiable Fevers.—Dr. JAMES TYSON, of Philadelphia, exhibited a number of temperature charts which illustrated cases of fever which did not meet the requirements of a diagnosis of typhoid fever, influenza, malarial fever, or any other fever due to a discoverable cause. Such cases must have some influence on public health reports and hospital statistics.

A Contribution to the Study of Long Continued Fevers.—Dr. HERBERT C. MOFFITT, of San Francisco, reported the case of a woman, aged forty-seven, who complained of chill, fever, and sweats in paroxysmal attacks, at first of a few days' duration, separated by apyretic periods of ten to fourteen days and later of twenty-two days' duration, with apyretic intervals of seven days. The patient gave a history of having had syphilis thirteen years before, a cough every winter for ten years, an operation for appendicitis eight years before, and several attacks of abdominal pain simulating cholelithiasis. She had traveled in the Far East and in Mexico. There was a quiescent tuberculous lesion at each apex. There was a dilated heart, with a systolic murmur. The spleen and the lymph-nodes were not enlarged. The abdomen was distended, but was not tender. There was no pigmentation. The liver was enlarged upward to the fourth rib anteriorly and to the angle of the scapula posteriorly. There was a moderate secondary anæmia; the leucocytes varied between 2,600 and 5,500; the large mononuclear cells formed from nine to eighteen per cent. of the leucocytes; serum reaction was negative; and blood cultures were negative. At the autopsy lymphosarcoma of one retroperitoneal gland was demonstrated, with multiple nodules in the liver.

Dr. JAMES H. HAY, of Boston, referred to a case of fever in the Massachusetts General Hospital which lasted for more than two weeks were due either to typhoid fever, sepsis, or tuberculosis. He had seen two cases of chronic fever due to syphilis of the liver and one or two due to syphilis.

Dr. JAMES HAY, of Philadelphia, referred to a case of chronic fever due to retroperitoneal tuberculosis. Attributions were the cause of repeated attacks of fever, which might be produced by the liberation of tissue products on account of the destructive changes taking place in the bloodvessels, etc.

Dr. S. WEIR MITCHELL, of Philadelphia, referred to three cases in which the temperature was habitually higher than that considered as normal for man. He had seen a few cases in which the temperature was always half a degree below normal. This sometimes followed lumbago.

Dr. GEORGE DOCK, of Ann Arbor, Mich., referred to a case of chronic fever due to syphilis of the liver. In cases of recurring fever quinine was usually of no value.

Dr. WILLIAM S. THAYER, of Baltimore, referred to two cases of lymphosarcoma of the liver and one case of carcinoma of the liver accompanied by chronic irregular fever.

Dr. REGINALD H. FITZ, of Boston, referred to a case of chronic fever which was treated with large doses of quinine and arsenic. The diagnosis lay between tuberculous peritonitis and Banti's disease.

Dr. JOSEPH SAILER, of Philadelphia, referred to a case of chronic fever in which the periods of pyrexia lasted from five to seven days, with apyretic intervals of from seven to ten days' duration. There was a tumor in the left lower quadrant of the abdomen which proved to be a dermoid cyst. After the operation the fever disappeared.

A Further Study on the Spirilla of Relapsing Fevers.—In this paper Dr. F. G. NOVY, of Ann Arbor, Mich., said that there were surely two and possibly three, distinct relapsing fevers; relapsing fever proper, due to the *Spirillum Obermeieri*, African tick fever, due to the *Spirillum Duttoni*, and a relapsing fever met with in Russia and in India, which was probably equally distinct. It was possible to cultivate the spirilla in colloidum sacs introduced into the peritoneal cavities of animals. That the spirillosis met with in Russia and India was distinct from the two other forms of spirillosis was indicated by the lack of influence of immune serum on the spirillum. Furthermore, there was great difficulty experienced in shipping the spirillum of the Russian relapsing fever alive, even for three days. The other spirilla remained alive for a much longer time. There was a form of relapsing fever in Cuba and in Panama, but the author had not been able to obtain the organisms. Infection with the *Spirillum Obermeieri* did not protect against infection with the *Spirillum Duttoni*. Atoxyl had no influence in the treatment of African tick fever. The author had succeeded in curing a case of anthrax infection by treatment with atoxyl, and he, therefore, concluded that, because atoxyl limited an infection, it did not prove that the infection was due to a protozoan parasite.

On the Measurement of Functional Heart Power.—Dr. RICHARD C. CABOT, of Boston, said in this paper that direct examination of the heart, even when supplemented by radioscopes and the study of the pulse and blood pressure, told us but little as to the amount of power possessed by the heart. In order to arrive at some estimate of the functional power of the heart, Cabot employed the Herz method, in which the pulse was counted for a number of minutes before, and again after slow extension and flexion of the forearm. In a normal individual this muscular movement had no influence upon the pulse, but in patients with

weak hearts the pulse was said to fall. Cabot had not found this method satisfactory. He then tried the method of Levy, which required that both femoral arteries be compressed. In a normal heart this procedure was followed by a rise in blood pressure of from 10 to 20 mm. In a weakened heart this rise of blood pressure did not occur. He was unable to find that this method had any practical value. He then tried Graupner's method, which determined the relation of pulse rate and blood pressure after exertion. If a patient made some definite exertion, such as running up a flight of stairs, the pulse was accelerated, and after a short time returned to normal. After the pulse rate has returned to normal the blood pressure rose. This was known as the "*Erholungsphänomen*." In seriously weakened hearts the rise of blood pressure after the pulse returned to normal did not occur. He exhibited several charts illustrating the relation of the pulse rate and blood pressure in patients in whom the heart was negative by the ordinary methods of examination. The method was not, however, entirely satisfactory for clinical use.

Dr. WILLIAM S. THAYER, of Baltimore, asked Dr. Cabot if he had made any observations on the delay of closure of the pulmonic valves in patients with weak hearts after exertion.

Dr. CHARLES G. STOCKTON, of Buffalo, asked Dr. Cabot if he had made any observations of the blood pressure after the administration of arterial relaxants to patients with weak hearts. In normal hearts arterial relaxants caused a rise in pressure; in patients with weakened hearts the blood pressure failed to rise.

Dr. HENRY SEWALL, of Ann Arbor, Mich., said that it was indispensable that the estimation of the minimum blood pressure in its relation to maximum blood pressure should be made in studying cardiac diseases.

Dr. CABOT said that he had made no observations of the methods referred to by Dr. Thayer and Dr. Stockton. The significance of the "*Erholungsphänomen*" was not yet understood. It appeared to be a method of determining weakness in a normal appearing heart.

Observations upon Certain Reflexes, Lowering Blood Pressure, which Arise from Stimulation of the Inflamed Pleura.—Dr. JOSEPH A. CAPPS and Dr. DEAN D. LEWIS, of Chicago, said in this paper that in healthy dogs irritation of the pleura by mechanical, chemical, thermal, and electrical stimuli caused very little change in the blood pressure. In dogs with artificially produced pleurisy, stimulation of the pleura sometimes gave rise to a marked and possibly fatal fall of the blood pressure. In some cases of paracentesis thoracis the patient died, and no anatomical cause of death could be found. Sudden reduction of blood pressure might be due to rapid withdrawal of pleural fluid, to the withdrawal of a large amount of fluid, to the withdrawal of fluid which had been present a long time, and to senile changes. This reflex might be cardioinhibitory, when the patient would recover; or it might be vasomotor and fatal. The fatal reduction of blood pressure might be due to irritation of an inflamed pleura.

(To be concluded.)

Book Notices.

Letters on Psychotherapeutics. By Professor H. OPPENHEIM, of Berlin University. Translated by ALEXANDER BRUCE, M. D., F. R. C. P. S., Editor of the *Review of Neurology and Psychiatry*. Edinburgh: Otto Schulze & Co., 1907. (Through G. E. Stechert & Co., New York.)

The translator has conferred a favor in making these letters accessible to the English reading profession, because they suggest a form of psychotherapeutics that

will be useful to many physicians. The author states that they have served as models of correspondence with those affected with various forms of mental disease. The letters indicate the character of the complaint in those to whom they were addressed, and the general method adopted by the writer to remedy the condition.

The Treatment of Skin Cancers. By W. S. GOTTHEIL, M. D., Adjunct Professor of Dermatology at the New York Postgraduate Medical School and Hospital, etc. Third Edition, Revised and Enlarged. New York: International Journal of Surgery Company, 1907. Pp. 89.

In this little book the entire subject of cutaneous epithelioma is discussed from the standpoint of the dermatologist rather than the surgeon. Dr. Gottheil believes that most skin cancers are better treated with escharotics than with the knife, and, of the numerous local caustics he mentions, a paste of arsenous acid is to be preferred. Arsenous acid is said to have an elective action on the pathological tissue which may be depended upon to destroy epitheliomatous infiltration adjacent to the macroscopic lesion. As irritation is an undoubted factor in the local origin of cancer, it would seem that the application of powerful chemical irritants in the treatment would in general be less desirable than removal by a clean surgical incision.

Des Microbes du paludisme. Par P. I. KOUBASSOFF. Recherches microbiologiques, épidémiologiques et cliniques. Avec microphotographies des microbes du paludisme à différents degrés de leur développement. Moscou: I. N. Kouchnéreff et Cie, 1906. Pp. 68.

The scope of this monograph may be determined by the fact that the author states that in his examinations of the blood of fever patients during the febrile paroxysm he finds the spores of *penicillium* and *aspergillus*, and that from these originate the several bodies that cause the different forms of paludal fever. The results observed do not corroborate those witnessed by many well known investigators, and the author will have to await confirmation of his observations before they will be accepted.

BOOKS, PAMPHLETS, ETC., RECEIVED.

Morris's Human Anatomy. A Complete Systematic Treatise by English and American Authors. Edited by Henry Morris, M. A., and M. B., Lond.; F. R. C. S., Eng.; President of the Royal College of Surgeons of England, etc., and J. Playfair McMurrich, A. M., Ph. D., Professor of Anatomy, University of Michigan, etc. Fourth Edition, Revised and Enlarged. In Five Parts. Part I.: General Morphogeny, Osteology, Articulations. Part II.: The Musculature, the Organs of Circulation, the Lymphatics. Philadelphia: P. Blakiston's Son & Co., 1907. (Price, \$1.50 for Volume I, and \$2.00 for Volume II.)

Précis de technique orthopédique. Par P. Redard. Avec 492 figures dans le texte. Paris: F. R. de Rudeval, 1907.

Epilepsy and Epileptics. Transactions of the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics. Sixth Annual Meeting, held at New Haven, Conn., November 8, 1906. Volume IV. Edited by William P. Spratling, M. D., 1906.

Surgical Diagnosis. By Daniel N. Eisendrath, A. B., M. D., Adjunct Professor of Surgery in the Medical Department of the University of Illinois, etc. Philadelphia and London: W. B. Saunders Company, 1907.

Poisons: Their Effects and Detection. By Alexander Wynter Blyth, M. R. C. S., F. I. C., F. C. S., etc., and Meredith Wynter Blyth, B. A., B. Sc., F. I. C., F. C. S., etc. Fourth Edition, Thoroughly Revised, Enlarged, and Rewritten. London: Charles Griffin & Co., Limited, 1906. (Through D. Van Nostrand Company, New York.) (Price, \$7.50.)

Official News.

Public Health and Marine Hospital Service Health Reports:

The following table of mortality affords from cholera, and other diseases, with reference to the American General, Public Health and Marine Hospital Service, during the week ending June 12, 1907:

Places.	Date.	Cases.	Deaths.
Illinois—Chicago	June 1-8	7	1
Indiana—Evansville	June 6	1	1
Kansas—Kansas City	June 1-8	6	1
Kentucky—Covington	June 1-8	2	1
Kentucky—Henderson	May 1-11	1	1
Kentucky—Louisville	May 1-11	6	1
Iowa—Iowa City	May 1-11	3	1
Michigan—Saginaw	May 20-June 1	1	1
New York—New York	June 1-8	5	1
North Carolina—22 counties	May 1-30	213	1
North Carolina—Charlotte	June 1-8	1	1
Ohio—Cincinnati	May 31-June 7	1	1
Ohio—Columbus	May 1-11	18	1
Texas—Galveston	May 24-June 1	1	1
Washington—Spokane	May 25-June 1	6	1

From S.S. *Hannover*.

Washington—Spokane	May 25-June 1	6	
<i>Smallpox—Foreign</i>			
China—Hankow	Apr. 20-27	3	
China—Shanghai	Apr. 20-27	1	14
China—Tientsin	Apr. 20-27		Present.
France—Paris	May 11-18	13	1
Germany—Gera	May 11-18	17	
Germany—Mannheim	May 11-18		1
Great Britain—Southampton	May 18-25	1	
India—Bombay	May 7-14		3
Italy—Genoa	May 16-23	19	
Italy—Porto-Alexandria	May 19-26	2	
Italy—Turin	May 12-19	4	
Japan—Nagoya	May 16		Epidemic.
Madeira—Funchal	May 12-26	25	3
Mexico—Aguas Calientes	May 25-June 1	1	20
Russia—Moscow	Apr. 20-May 4	17	4
Russia—Odessa	May 11-18	4	1
Spain—Valencia	May 19-26	1	
Turkey—Bassorah	May 4-11	5	

Brazil—Manaos	May 4-11	1	1
Cuba—Habana	June 3	1	1
Cuba—San Nicolas	June 7	2	1
Guatemala—Guatemala	May 7	1	Present.
Guatemala—Zacapa	May 29	1	Present.
West Indies—Trinidad, Port of Spain	May 11-18	2	1

India—Bombay	May 11-18	1	1
India—Rangoon	Apr. 27-May 4	9	1
Africa—Cape Colony, King Will.	Apr. 22-May 4	3	2
Germany—Grodan	June 3	1 on S.S.	2
India—Bombay	May 7-14	188	1
India—Rangoon	Apr. 27-May 4	58	1
Japan—Osaka	May 15	5	1
Japan—Yokohama	May 30	1	Present.
Turkey—Istanbul	May 6-11	12	12
Turkey—Island of Bahrein	May 22	1	Epidemic.
West Indies—Trinidad	June 11	2	1

Public Health and Marine Hospital Service:

Official List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the United States Public Health and Marine Hospital Service, for the seven days ending June 12, 1907:

BREADY, J. E., Acting Assistant Surgeon. Granted leave of absence for four days, from June 15, 1907.

CARLTON, C. G., Pharmacist. Granted leave of absence for thirty days, from July 1, 1907.

CURRIE, D. H., Passed Assistant Surgeon. Relieved from duty at San Francisco Quarantine Station, and directed to proceed to Honolulu, Hawaii, for temporary duty.

HUNTER, W. R., Acting Assistant Surgeon. Granted leave of absence for fourteen days, from June 10, 1907.

LA GRANGE, J. V., Pharmacist. Directed to proceed from Savannah, Ga., to Camp Perry, Fla., for special temporary duty, upon completion of which to rejoin his station.

MASON, W. C., Acting Assistant Surgeon. Granted leave of absence for six days, from June 23, 1907.

ROYSTER, W. L., Acting Assistant Surgeon. Granted leave of absence for seven days, from June 9, 1907, under paragraph 210, Service Regulations.

SHOCKLEY, M. A. W., Captain and Assistant Surgeon. Granted leave of absence for fifteen days, from June 1, 1907.

TOWNSEND, F., Acting Assistant Surgeon. Granted leave of absence for seven days, from June 10, 1907, under paragraph 210, Service Regulations.

WARD, J. LA B., Acting Assistant Surgeon. Granted leave of absence for seven days, from June 10, 1907, under paragraph 210, Service Regulations.

Board Convened.

A board of medical officers was convened to meet at Galveston, Texas, June 10, 1907, for the physical examination of an officer in the Revenue Cutter Service. Detail for the board: Passed Assistant Surgeon G. M. Corput, chairman; Acting Assistant Surgeon W. H. Gammon, recorder.

Army Intelligence:

Official List of Changes in the Station and Duties of Officers serving in the Medical Department of the United States Army, for the week ending June 15, 1907:

BINGHAM, E. G., First Lieutenant and Assistant Surgeon. Assigned to duty at the Army General Hospital, Presidio of San Francisco, Cal., and granted leave of absence for thirty days.

COLLINS, C. C., Captain and Assistant Surgeon. Relieved from duty at Fort Walla Walla, Wash., and ordered to Fort Snelling, Minn.

CORBUSIER, W. H., Lieutenant Colonel and Deputy Surgeon General. Ordered to make inspection of the medical department, hospitals, and sanitary conditions of posts in the Department of the Columbia.

DUNCAN, L. C., Captain and Assistant Surgeon. Appointed a member of an army retiring board, to meet at Fort Wright, Wash.

FRICK, E. B., Major and Surgeon. Granted thirty days' leave of absence.

GILLESPIE, J. D., Major and Surgeon. Granted two months' leave of absence, to take effect on or about July 25, 1907.

HARRIS, J. R., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Assiniboine, Mont., and ordered to Fort Worden, Wash., for duty.

HUTTON, PAUL C., Captain and Assistant Surgeon. Leave of absence extended fourteen days.

LYSTER, W. J. L., Captain and Assistant Surgeon. Assigned to special duty in San Francisco, Cal., until July 5th, when he will proceed to Manila, P. I., in compliance with orders heretofore issued.

MUNSON, E. L., Major and Surgeon. Granted thirty days' leave of absence.

SHOCKLEY, M. A. W., Captain and Assistant Surgeon. Appointed a member of an army retiring board, to meet at Fort Wright, Wash.

SWEAZY, V. E., Captain and Assistant Surgeon. Leave of absence extended fifteen days.

TRUBY, WILLARD F., Captain and Assistant Surgeon. Leave of absence extended ten days.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending June 15, 1907:

ALFRED, A. R., Surgeon. Detached from course of instruction at the Naval Medical School, Washington, D. C., and ordered to the naval rendezvous, Pittsburgh, Pa.

BOGAN, F. M., Passed Assistant Surgeon. Detached from course of instruction at the Naval Medical School, Washington, D. C., and ordered to the naval rendezvous, Minneapolis, Minn.

DICKINSON, D., Medical Director. Ordered to additional duty as a member of the Navy Retiring Board, Washington, D. C.

HIBBETT, C. T., Medical Inspector. Detached from the naval rendezvous, St. Louis, Mo., and ordered to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C., for temporary duty.

JONES, A. Mc K., Acting Assistant Surgeon. Detached from the naval rendezvous, Chattanooga, Tenn., and

Washington, D. C., for examination for assistant surgeon; then await orders.

KELLEY, H. L., Assistant Surgeon. Appointed an assistant surgeon, on June 5, 1907.

MCGUIGAN, J. H., Pharmacist. Unexpired portion of sick leave revoked; ordered to Naval Hospital, New York, N. Y., for treatment and observation.

McLARTY, C., Pharmacist. Detached from the Naval Hospital, Yokohama, and ordered to duty at the Naval Hospital, Mare Island, Cal.

MOORE, J. M., Surgeon. Detached from the naval rendezvous, Minneapolis, Minn., and ordered to the naval rendezvous, Chattanooga, Tenn.

ODELL, H. E., Surgeon. Detached from duty at the Naval Hospital, Washington, D. C., and ordered to the Naval Hospital, Mare Island, Cal.

PAGE, J. E., Surgeon. Granted leave of absence for three months when discharged from treatment at the Naval Hospital, Mare Island, Cal.

PAYNE, J. H., JR., Passed Assistant Surgeon. Detached from course of instruction at the Naval Medical School, Washington, D. C., and ordered to the naval rendezvous, Providence, R. I.

PHILLIPS, T. N. K., Pharmacist. When discharged from treatment at the Naval Medical School Hospital, Washington, D. C., ordered to the Naval Hospital, Yokohama, sailing from San Francisco via the *Korea*, about July 9th.

PLEADWELL, F. L., Surgeon. Detached from duty at the Naval Hospital, Yokohama, and ordered home to await orders.

PLUMMER, R. W., Passed Assistant Surgeon. Detached from course of instruction at the Naval Medical School, Washington, D. C.; ordered to the *Constellation*, and to additional duty at the naval training station, Newport, R. I.

PRYOR, J. C., Surgeon. Detached from the Naval Medical School Hospital, Washington, D. C., and ordered to the Naval Hospital, Yokohama, sailing from San Francisco via the *Siberia*, about July 25th.

STEADMAN, W. G., Acting Assistant Surgeon. Detached from the naval rendezvous, Providence, R. I.; ordered to Washington, D. C., on July 1st, for examination for appointment as assistant surgeon, and then to await orders.

VERNER, W. W., Passed Assistant Surgeon. Detached from the naval rendezvous, Pittsburgh, Pa., on June 15th, and ordered to the naval rendezvous, St. Louis, Mo.

ZALESKY, W. J., Passed Assistant Surgeon. Commissioned a passed assistant surgeon, from April 12, 1907.

Births, Marriages, and Deaths.

Born.

GOSMAN.—In Carlisle, Pennsylvania, on Sunday, June 9th, to Dr. G. H. R. Gosman, United States Army, and Mrs. Gosman, a son.

Married.

AMENT—KRAUSS.—In St. Louis, Missouri, on Tuesday, June 4th, Dr. Wilber F. Ament and Miss Louise Krauss.

CLARK—McMAHON.—In Philadelphia, on Wednesday, June 12th, Dr. William Clark and Miss Mary Agnes McMahon.

FOULKROD—ALLEN.—In Philadelphia, on Thursday, June 13th, Dr. Collin Foulkrod and Miss Gertrude Allen.

HARRELSON—FLEISCHMANN.—In Kansas City, Missouri, on Tuesday, June 4th, Dr. N. O. Harrelson and Miss Gertrude Fleischmann.

LENTINE—HAYES.—In Middlebury, Vermont, on Thursday, May 30th, Dr. George E. Lentine, of Boston, and Miss Anna Dausy Hayes.

LYON—SLATE.—In Williamsport, Pennsylvania, on Monday, June 10th, Dr. Edward Lyon and Miss Florence Wall-

MARDORF—SPIEGLEHALTER.—In St. Louis, Missouri, on Saturday, June 8th, Dr. William C. Mardorf and Miss Ella Hermona Spieglehalter.

NELIGAN—O'SHEA.—In Roxbury, Massachusetts, on Wednesday, June 5th, Dr. John P. Nelligan and Miss Gertrude H. O'Shea.

MCCARTHY—McANDREWS.—In Valparaiso, Indiana, on Wednesday, June 5th, Dr. Robert G. McCarthy and Celia S. McAndrews.

MCGUIRK—GILBANE.—In Providence, Rhode Island, on Wednesday, June 12th, Dr. William Robert McGuirk and Miss Mary Alice Gilbane.

POWELL—GARDNER.—In Baltimore, on Thursday, June 13th, Dr. Rawley Holland Powell and Miss Blanche Gardner.

PRICE—GEORGE.—In Baltimore, on Friday, June 14th, Dr. Marshall Price and Miss Henrietta George.

ROBINSON—EVEY.—In Bala, Pennsylvania, on Monday, June 10th, Dr. Edwin T. Robinson, of Philadelphia, and Miss Florence Evey.

STEWART—SEXTON.—In Williamsport, Pennsylvania, on Wednesday, June 5th, Dr. Alonzo H. Stewart and Miss Ethel J. Sexton.

SUTTON—JUDSON.—In Clayton, Michigan, on Wednesday, June 5th, Dr. Mahlon Sutton and Miss Alice Judson.

TENNANT—ROANE.—In Brooklyn, N. Y., on Tuesday, June 18th, Dr. Albert A. Tennant, of Richmond, Va., and Miss Lelia E. Roane.

UNDERWOOD—EDGINGTON.—In Memphis, Tennessee, on Wednesday, June 5th, Dr. Robert Underwood, of Detroit, Michigan, and Miss Katherine Edgington.

Died.

BURCHMORE.—In Evanston, Illinois, on Saturday, June 8th, Dr. John H. Burchmore, aged fifty-eight years.

CADWALADER.—In London, England, on Wednesday, June 12th, Dr. Charles Evert Cadwalader, of Philadelphia, aged sixty-seven years.

CHAPIN.—In Chicago, on Sunday, June 2nd, Dr. Marvin Chapin, aged eighty-six years.

CORBUS.—In Evanston, Illinois, on Thursday, June 6th, Dr. J. R. Corbus, of Chicago, aged sixty-five years.

DAVID.—In Chicago, on Tuesday, June 11th, Dr. Cyrenus A. David, aged sixty-two years.

DETWILER.—In Bethlehem, Pennsylvania, on Friday, June 8th, Dr. William F. Detwiler, aged eighty-three years.

FRAZIER.—In Crescent, Missouri, on Friday, June 7th, Dr. S. H. Frazier.

GILLESPIE.—In Ravenswood, Virginia, on Thursday, June 6th, Dr. William F. Gillespie, aged sixty-seven years.

HAWKINS.—In Pulaski, N. Y., on Wednesday, June 5th, Dr. John Moore Hawkins.

HECKMAN.—In Roanoke, Virginia, on Thursday, June 13th, Dr. David P. Heckman, aged seventy-six years.

KUBIN.—On board the steamship *Prinz Eitel Friedrich*, on Wednesday, June 12th, Dr. William Kubin, of East Orange, New Jersey.

LAIGHT.—In Rome, Italy, on Monday, April 1st, Dr. Charles Laight, aged sixty-one years.

MARMION.—In Washington, D. C., on Saturday, June 8th, Dr. Robert Augustine Marmion, Medical Director in United States Navy, retired, aged sixty-two years.

MORRISSEY.—In New York, on Friday, June 14th, Dr. John J. Morrissey, aged forty-eight years.

MYERS.—In Rochester, Pennsylvania, on Monday, June 10th, Dr. A. Harold Myers, aged fifty-one years.

RIDDELL.—In Richmond, Virginia, on Thursday, June 6th, Dr. Thomas Jefferson Riddell.

RIES.—In Jeffersonville, Indiana, on Sunday, June 8th, Dr. Carrie M. Ries, aged thirty-six years.

RING.—In New York, on Sunday, June 16th, Mrs. Hannah D. Ring, wife of Dr. Charles A. Ring.

SEELEY.—In St. Luke's Hospital, New York, on Friday, June 14th, Dr. Lamac Seeley, aged twenty-five years.

SHUPE.—In Westernport, Maryland, on Wednesday, June 5th, Dr. John B. Shupe, aged fifty-six years.

STICKNEY.—In Ashburnham, Massachusetts, on Tuesday, June 4th, Dr. Alonzo Lawrence Stickney.

WALLIAN.—In New York, on Wednesday, June 12th, Dr. Samuel S. Wallian, aged seventy-one years.

WHITSEY.—In Cleveland, Ohio, on Wednesday, June 5th, Dr. H. E. Whitsey, aged forty-four years.

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Original Communications.

THE PRENUPTIAL SANITARY GUARANTEE.*

By E. L. KEYES, M. D.,
New York.

The subject which I am called upon to present to-night has not, as yet, received great attention in this country, but it has been thoroughly exploited in the Brussels International Congress of the European Societies of Social Prophylaxis, and at Paris in 1903 before the French Society of Sanitary and Moral Prophylaxis, as well as less prominently elsewhere; and there remains in an argumentative way very little to be said that has not been already advanced.

Out of a mass of literature recording the intellectual struggles which have taken place upon this arena, I have been able to extract, in generalizing, only six propositions that have been seriously put forward suggesting means applicable to prenuptial sanitation. One of these is general; three are direct and apply immediately to the contracting parties contemplating matrimony; two are indirect, their aim being to protect the individual long before matrimony has become a question, by striving to take away from him false hopes of speedy and permanent cure in case of personal infection, and by furnishing to him sufficient wisdom to beget prudence and awaken solicitude.

These propositions have not been generally adopted; they have been vigorously disputed; nor is there to-day any general accord in the profession upon any of them—unless it be the last two. I state them here with some of the arguments which have been urged against them in rebuttal, in order to get them out of the way before expressing my personal point of view.

The propositions in round terms are these:

First.—The present law regarding privileged communications shall be abolished or modified. I dismiss this first general proposition, in so far as it regards the medical secret, with the simple statement that the law is the effect of the existing sentiment in the community, and not its cause. When that sentiment changes, then also will the law change. *Causa sublata tollitur effectus.*

Second.—It is expedient to institute legislation which shall call for a sanitary guarantee of the physical status (*quoad* the venereal diseases) of any one contemplating matrimony, as a condition for issuing the marriage license; and such legislation shall re-

* Read before the American Society of Sanitary and Moral Prophylaxis, April 11, 1907.

lieve the physician from the obligation of the medical secret—under the written authorization of his client. Or, instead of this latter clause as a part of the same idea, the State shall appoint licensed examiners, whose duty it shall be to investigate the physical condition of all applicants for a marriage certificate and report to the proper authorities.

There are at least six sufficient objections to this scheme:

1. Such an examination, to be consistent, must apply to the woman as well as to the man—a shameful attack upon modesty, even in its suggestion, and certainly not to be tolerated in any self respecting community.

2. If such an examination were carried out it would fail to protect. It might be made in a period of calm of the malady. An obliging, sound substitute might be examined as proxy. If the examination were made some time before the ceremony, there would be ample opportunity to nullify its certification. If made close up to the date of marriage and any rupture should follow its disclosure, the scandal would become an outrage.

3. If the family physician were called upon to furnish the credentials, the young man, knowing this, would never apply to his family physician when he acquired a venereal disease.

4. If any indifferent physician could give the certificate, charlatans would establish bureaus for the purpose of issuing such certificates.

5. Many errors in diagnosis would be inevitable. Cases of lichen planus, eczema seborrhoicum, some forms of gouty eczema and lichen, some of the ecthymata, some forms of psoriasis would all occasionally condemn an innocent victim to suffer undeserved rebuke; while many cases of latent gonorrhoea and syphilis would pass undetected.

6. The appointing of specially qualified examining physicians for every village in the State would be out of the possibilities.

These and many other minor reasons render such legislation inappropriate.

Third.—A suggestion has been made to the effect that any one inflicting a venereal disease upon another, whether knowingly or innocently, shall be punishable by law. This opens the door so widely to blackmail, and would be so seldom made use of by the innocent and modest afflicted one that it needs little comment.

Fourth.—The final direct proposition is the instructive leaflet prepared by Darier and presented to the French Society by Jullien, as the outcome of the incubation of the committee appointed to devise ways and means for the sanitary guarantee of mat-

rimony. Needless to say that, although the idea of the distribution of such a paper was approved by the society after five lengthy and learned sittings, the matter otherwise was left in the air.

The remaining two suggestions I believe to be valuable. I shall return to them later.

I now pass to a presentation of my personal point of view, the consideration to-night being confined to the venereal diseases. How shall individuals contemplating matrimony be insured against venereal contamination? This is the riddle. Its solution has not yet been reached by the most thorough discussion, nor in my opinion is it likely to be. And even if it could be reached, the guarantee to posterity of immunity from venereal disease would be useless, unless the same guarantee were so extended as to include the entire period of married life—and no one has as yet proposed the systematic inspection of the marital couch by the health authorities.

Upon the honor of the individual and a knowledge of the disease must depend the conservation of the community from contamination. Argument as to the desirability of devising means for the protection of the innocent in matrimony may triumphantly demonstrate conclusions upon one side; but sentiment, tradition, conventionality, and manifest expediency are equally powerful in reaching an opposite conclusion, and between the two opinions there is, as yet, no compromise.

Attempts at legislation in the direction of ensuring the physical soundness of the individual contemplating matrimony have already been instituted in Holland, Spain, and several of our Western States, but so recently that I know of no records of the practical efficiency of the enactments.

A very considerable element of the question hinges upon the so called medical secret, since a knowledge of the physical condition of the individual cannot be obtained by the State, the family, or the affianced couple except through the cooperation of the physician. Yet this secret, after all, does not exist in reality; but only such portions of it as the community tolerates and approves. Here, as elsewhere, it is the consent of the governed that establishes the potency of a custom or law. *Mos et consuetudo vincunt legem.*

The practice of medicine is a humanitarian trade. It deals with the dispensing, not of justice but of mercy; and its first object is to relieve suffering for humanity's sake, in order to restore the individual to a condition of functional potency in the community. We, as physicians, seek to pour oil and wine into the wounds of the sufferer by the wayside, whether his injuries were received in fighting for the right or for the wrong. It is our first duty to attend to the physical needs of the individual—be he criminal or saint—in order to relieve the sufferer; and not first to constitute ourselves judge and jury and to withhold our remedies until the defendant shall have been acquitted.

But society, as it is organized, pretends to claim from every one a first duty to the community. In the performance of this duty the rights of the individual, if they conflict with the good of the community, must be accorded a secondary place; and it is exactly at this parting of the ways that we find ourselves in face of the medical secret: How is it

possible, or is it at all possible, to reconcile these two diverging interests?

From a theoretical standpoint there is no escape from the course which should be pursued. If sanitary regulations are to be applied for the protection of the community from danger within itself, these regulations should cover the entire territory. If one contagious malady is to be reported, all should be so reported. Why should measles and typhoid be arraigned, and the much more noxious gonorrhœa and syphilis escape? Viewed in the light of common sense there is no excuse for such a position, except for the fact that uncommon sense frequently demonstrates that the shortest distance (in time) between two given points is not a mathematical straight line. An obstacle may frequently be overcome by going around it when an attempt to pass through it or over it would result in disastrous failure.

And this, it seems to me, is the kernel of the whole matter. The medical secret is an elastic pretension, to be sacredly guarded where honor or sufficient expediency dictate, otherwise ignored.

It is a joy to the young mother to have her physician announce to the world the birth of her first-born. It is considered no error to state that Mr. So-and-So has the grippe or an apoplexy; it is a little more offensive to gossip about his diarrhœa or cystitis; it is beyond the limit of good taste and painfully near the danger line to even hint that alcohol lies at the root of his malady; and it becomes a crime to allow it to be inferred that his disorder is of venereal origin.

What fools we mortals be! And yet, are we fools?

The integrity of the family is one of the strongest bulwarks of the State. The efforts of conservative people on all sides to put obstacles in the way of divorce attest the high position accorded by the community to the continuance of the family union once legally inaugurated. After the first glamor has worn off the emotional sensations experienced by people in the early matrimonial relationship, a tolerance, or an antagonism, or a warm friendship, becomes established between the husband and wife and is likely to continue to the end. If the *modus vivendi* be a condition of tolerance or antagonism, any suspicion of sexual disloyalty would at once establish a cataclysm which would shake down the tottering structure, and the already loose bonds holding the family together would be rudely burst asunder.

In monogamous communities the loyalty of the husband to the wife, or of the betrothed one to his lady, and to her alone, is the keystone to the arch of the continuance of family union. Loss of money and failure to support are tolerated with an appearance of resigned contentment; sexual disloyalty is intolerable. Personal violence does not destroy affection. This is too well known and too generally recognized to require demonstration, yet it seems to me to be so luminously illustrated by the humorous words of Mr. Dooley that I may, I trust, be pardoned for interpolating them here.

After remarking that in her heart every woman likes the strong arm, he says: "The husband that gives his wife a violet bokay is as apt to lose her as th' husband that gives her the violet eye. Th' man

that breaks th' furniture, tips over th' table, kicks th' dog, and pegs th' lamp at th' lady iv his choice is not more often in 'our justly popylar divorce courts' thin the man who comes home arly to feed th' canary." And so it is. Neglect, desertion, lack of support, indifference, physical violence, drunkenness, can all be tolerated, all endured, and affection survive; not so with sexual unfaithfulness.

And on the other side it is far worse. Women do forgive sexual disloyalty sometimes if the culprit returns to his allegiance and renounces the rival—not so man. To him purity in the object of his choice is an essential to the continuance of affection. His Dulcinea is the lily beyond suspicion; once smirched, she is ruined forever, and the spot can not be effaced. He, the man, is more rugged. He is an oak leaf and not a lily; and he believes, and woman believes, that he can stand a little smirching and yet pass muster; not so the lady. Othello expresses dramatically the disgust and horror of the situation: "I had rather be a toad and feed upon the vapor of a dungeon than keep a corner in the thing I love for others' uses."

The suspicion even of venereal disease carries with it the sexual idea, but the idea of something more than the sexual act alone. A girl who is raped does not seem really to have lost her virginity or to have been "ruined," as it is called; she retains the respect of the community; the widow may be as pure as snow in the eyes of her lover. But the venereal imputation carries with it the idea of the sexual consent of the free will of the individual; and such a consent on the part of the woman, if illegitimate, is a bar to matrimony far greater than any disease. The very idea of it is unthinkable, and this sentiment is possessed by man in every grade of society.

How then is a physical guarantee of absence of venereal possibilities to be applied before matrimony? For if it is granted to one of the contracting parties, it should also be given to the other; and this may not be.

The reporting of any contagious malady is really an outrage of individual right in the interest of the good of the majority. And it has in it an element of positive injustice in every case (and more especially in the case of the venereal maladies), in that it causes the individual to be punished twice for the same offence. Two men go on a debauch; one gets venereal disease. The latter suffers the pain of his crime against conventional morality and atones for it by becoming ill. But over and above, as a penalty for being caught, it is proposed to punish him by the humiliation of exposure, while his more fortunate companion in infamy escapes contamination in his amorous approaches, gets no disease, no public exposure, and perhaps is looked up to by the community as a model of propriety, a crystallization of all the virtues. That the community is to be benefited does not make this punishment less acute.

The community is made up out of individuals, and the individual forfeits certain of his rights, for the good of the whole, but not his moral rights; he remains individually responsible to himself and to his conscience along moral lines. The community as an entity is not paramount. It was made by man for man, and not man for it! The individual ultimately is superior to the community. If a man

were one of such a community as a swarm of bees, or even one soldier in an army, or one hand in a factory, it would be different. In such instances the community is an entity with a *raison d'être* wholly superior to any reason for existence of the individual as such. The ultimate object of the bee colony is to make honey, of the army to preserve order and achieve conquest, of the factory to perfect a given product. But the human community, as organized in civic society, does not achieve anything, excepting to insure the rights, liberties, comforts, protection, etc., of the individual. It exists for the individual, and not the individual for it. Besides having a body whose wants have to be attended to—like the bee—and an intelligence to look after that body—like the bee—man—unlike the bee—has a soul, and a conscience, and a free will superior to instinct, and he possesses inherent principles of integrity, of honesty, of chivalry, of honor, that, as guiding motives, are often superior to the general regulations which he has adopted for the purposes of community coherency. Therefore his individual liberty in moral matters must not be too closely assailed by the community, or he will have none of it, and the community will suffer by his defection.

These venereal matters, unfortunately, involve the sexual side of man.

If syphilis were acquired as is scarlet fever, there would be no protest if the fact were proclaimed from the house top. But since syphilis is usually known to be acquired by a voluntary act involving moral turpitude, according to existing sentiment, therefore, that syphilis may not be even whispered abroad without placing a man in a position from which the moral attitude of the community causes him to shrink.

This brings me to the final propositions that have been suggested. They cover, it seems to me, the entire possibilities of the case and are most worthy.

One is that legislation be called upon to suppress the appearance of all advertisements promising a safe and speedy cure of the venereal diseases, and that quacks, treating exclusively the diseases of men and advertising in this general direction, be summarily dealt with; in this way cutting off, to some extent, a hope of the easy cure of venereal maladies, and forcing the possessor of such maladies to seek legitimate channels for relief. This society is already working in this direction.

And finally, knowledge of venereal diseases, of their wide extent, their fearful possibilities, and their indefinite duration, should be spread around in every direction until the community is saturated with such knowledge, because this course, which also is being followed by this society in a progressive way, must be the final reliance, aided by the honor and honesty of man.

Approaching then the community in a spirit of kindness, and recognizing that sympathy and persuasion will accomplish more than coercion or force, let us endeavor to excite the conscience and stimulate the honesty of our patients, adopting the rôle of a friend, not an informer, a comforter, not a prosecutor, a confessor, not a detective. And as a profession let us cooperate in the endeavor to shed the light of knowledge upon all dark places, that the ignorant may have no further excuse: the careless may be aroused to conscious-

ness; the vicious shamed into quiescence; and we shall have accomplished all that the present day and generation allows toward furnishing a pre-nuptial sanitary guarantee.

109 EAST THIRTY-FOURTH STREET.

DEPARTMENTAL INFLUENCE IN THE SUPPRESSION OF SOCIAL DISEASE.*

By W. M. L. COPLIN, M. D.,
Philadelphia,

Professor of Pathology, Jefferson Medical College.

In expressing my appreciation of the privilege and honor of being your guest to-night, let me also bring you tidings of the fact that the work done by the American Society of Sanitary and Moral Prophylaxis is being more and more widely realized and is receiving everywhere the honorable commendation that it so richly deserves. The object of your crusade is one upon which professional and lay minds may well exert a combined energy with confidence that every effort will be productive and the final result of inestimable value to human life and happiness. The ground has been well tilled, and the fruitful soil has already yielded an abundant harvest. To all that has been so well done I may add but little and nothing strikingly original. I take it that these discussions are to bring out individual opinions and encourage that interchange of ideas from which the grain may be separated and the seed spread broadcast in the hope that larger and larger harvests may be reaped.

While the title given my share of this evening's discussion was apparently intended to include the health department only, I shall presume on your good intentions sufficiently to invade certain collateral fields of departmental energy. Neither time nor the scope of my subject will permit me to discuss such important social and economic questions as the influence of crowding, labor competition, want of home environment, the migration to cities, child labor, the single standard of morality, ignorance and inadequate moral training, and like influences in determining the incidence of venereal disease. In some form each is of no little weight, and two or more combined may be all powerful. In the beginning I think it would be wise to recognize the clearly established tendency of modern reformers to regard the making of laws and the formulation of regulations as the only necessary step in securing desirable advances. As soon as an evil becomes conspicuous there is at once evinced a maniacal tendency to rush to law making bodies and spread upon the statutes mandatory acts to which are appended punitive provisions often of the severest nature. While this tendency is by no means the product of recent times it has gained in efficiency nothing, and remains as unproductive in its results as when practised by the barbarians of antiquity or the struggling civilizations of centuries now remote. It neglects the important, I venture to say the absolutely essential, feature in effective legislation, namely, a popular recognition of the necessities of the case, and consequently fails to secure the active support of the public—without which no law can be rendered satisfactorily operative—and consequently becomes ineffective. Judges to whom we

must look for construction recognize the wisdom and justice of interpretations adapted to the times and conditions, and consequently modify opinions accordingly. Under such influences, which you will understand I am not criticising, laws, like language, become obsolete. As illustrating the beneficent results of wise interpretation and liberal construction one need but point to the inoperative blue laws no longer enforced in any of the large cities.

I presume that you expect me to say something with regard to the licensed prostitute and the inspected brothel, but I am not one of those who believe that the medical supervision of prostitutes is wise or efficacious. The fact that no medical supervision can be depended upon to establish the non-infectiousness of the individual prostitute at once establishes the inutility of the proposition. Supervision and inspection imply licensing, which gives to vice a suggestion of legal sanction, and this to the lay mind is synonymous with the admission that medical men regard prostitution as physiologically demanded. At the present time certain houses of ill fame systematically subject the inmates to what passes for medical inspection and proclaim to visitors this fact as an evidence of assured protection and safety. To the young and inexperienced undue confidence in medical certification is dangerous in the extreme. The fact that the notoriously dangerous clandestine prostitute escapes and, in the presence of what passes for regulation, reaps her victims by the score, is an insurmountable obstacle to any form of official supervision of the individual.

The proper control of the sale of intoxicants must be looked upon as absolutely essential in suppressing one of the most important dangers through the influence of which the greatest harm is accomplished. Especially to be suppressed are those places where secret drinking is permitted. The youth, both male and female, especially the latter, when normal minded, shrinks from the public saloon and all places in which congregate undesirable characters. Fortunately the spirit of adventure rarely dominates the female mind, and as a result of this normal modesty and timidity, public resorts—public in the proper construction of the term—exert no seductive influence. If the law against selling to minors and drinking on the premises was strictly enforced, an incalculable benefit would result. It is this danger bred through unregulated hotels and houses of assignation that insidiously accomplishes what, under normal conditions, would be impossible. The youth, both male and female, most to be protected and not infrequently succumbing, commonly admit that infection resulted or was brought about while under the influence of alcoholic stimulation. In alleged druggings I have no confidence; they are not the dangers that they are popularly supposed to be and are adequately guarded against by existing regulations.

The openly conducted principally public brothel located in a low dive, saloon, or "speak-easy," with its coterie of denizens of the worst grade, flauntingly operating their calling, should be rigorously suppressed. An all important consideration is the method of suppression; scattering must be sedulously avoided; the house should be closed and the inmates sent to an institution, hospital or reformatory, and there kept under supervision until a clin-

* Read by invitation before the American Society of Sanitary and Moral Prophylaxis, April 11, 1907.

real cure is obtained, and their nonineffectivity established. These houses are commonly situated in red light districts remote from respectable neighborhoods, cheaply conducted by conscienceless persons who decline no grist coming to their mills; it would be a matter for surprise if one contained a single inmate incapable of disseminating disease. I am aware that my views with regard to such establishments are not universal, indeed I doubt if they are shared by the majority and admittedly are open to criticism; I believe, however, that the good results following a judicious execution of the course indicated would far exceed any dangers which might otherwise merit special consideration.

In this connection it may be well to ask what is to be done with the professional prostitute who, soliciting on the street, or presenting herself at the out patient departments of hospitals and clinics, or in private consulting rooms, is found to be infected, but who at the same time continues to ply her nefarious vocation. Similar individuals of the male sex are not uncommon, and the sum total of the dangers arising from both cannot be neglected. They persist in cohabitation, mix and superadd venereal disease to existing infection, and offer the greatest possible danger. Many of this class are recognized by experts as high grade mental defectives, a few are sexual perverts, and nearly all possess the psychical constitution of criminals. I believe they should be corralled and placed under custodial care for a sufficient time to render them innocuous. Educational opportunities, manual training, and the usual reformatory methods may be tried, but usually offer little encouragement in the regulation or restoration of members of this group. Fear of punishment and especially the danger of custody at labor are the best regulatory means which society possesses for this class of individuals. Lest I be misunderstood, permit me to disavow explicitly any intention to convey the belief that I am an advocate of police supervision with all its attendant crookedness. It has been proved to be the foulest of all proposed regulatory forces. It is not probable that the "vice squad" of the Philadelphia police accomplishes much more than its historic predecessors, whether in the reign of the Roman potentate or the Austrian queen. Henry VIII and Frederick III, reincarnate, are no more effective than the images mirrored by the centuries. Regulation under educated professional supervision is degrading enough and sufficiently undesirable; police regulation in American cities is and must be expected to be unspeakably repulsive—often criminal to the last degree.

A sadly neglected group of dependent children, forced into public or private institutions, the inmates of day nurseries and orphan asylums, the deserted babe, born parentless, and even those tenderly committed to hospitals for the sick infant, need a closer attention and more strict supervision than officialdom has bestowed upon them. The epidemics of gonorrhœal vaginitis that run their devastating course among these unfortunates are the blackest crimes that besmirch the escutcheon of noble charity. Year after year, often in the same institutional ward, this plague reeks in its rottenness. It is as preventable as intoxication and as avoidable as lying, but remains unstayed. Careless nurses and

negligent internes merit corporal punishment, and the employment of unskilled attendants for these poor charges is a crime for which no adequate penalty has been devised. I knew an institution in which seventeen gonorrhœas were traced to gonorrhœa in a single month, and throughout the year land of ours, yearly, hundreds, probably thousands, are started in their struggle for life with the crippling burden of diseased annexa for which neither they nor their parents are to blame. Over these institutions no adequate supervision is maintained; there are exceptions, but they are few and, as a rule, unimportant. While we are soliciting laws for the protection of those able to care for themselves if they so desire, let us not forget what may be done for the defenseless.

Another important aspect of this question, upon which authorities are not agreed, is the action to be taken concerning those about to enter into the marriage relation. The indiscriminate mating of the human family is admittedly in many instances dangerous to the individual, the progeny, and to society. Marriage of the epileptic, the imbecile, the insane, the tuberculous, the alcoholic, the sexual pervert, the physically decrepit, and the mentally degenerate, as well as the venereally infected, cries out for some feasible regulatory control. The apparent indifference of the lay mind and especially parental laxity cannot be looked upon with composure, but I am not convinced that the public is educated to that point where official intervention and marital certification would be regarded with very general favor. There are undoubtedly conditions under which the medical examination of those about to marry would commend itself, but neither parent nor groom would be likely to look with favor upon the medical examination of the prospective bride. The man is the more frequent sinner in this respect, and in an experimental way I am prepared to advocate the medical inspection of all men contemplating marriage. I am convinced that no great practical benefit would result from such examination *per se*; it would, however, have an educational value, might awaken the slumbering duty of the indifferent parent, and would undoubtedly exert a deterring influence upon marriageable males.

In the crusade against venereal disease the most important influence at present to be exerted must be educational rather than restrictive. The public mind must awaken to the dangers, and there must be pressed home the established truth that immorality imperils the public conscience and jeopardizes the public health. Only within recent years and not yet as fully as it should be, has the medical profession attained a commendable position upon this subject. Many physicians educated a quarter of a century ago, or in some cases even more recently, have failed to give due publicity to the danger of venereal disease to the health of the individual. Especially is this true of gonorrhœa, at one time lightly regarded, but now known to be not only immediately dangerous, but efficient in disabling the individual throughout a lifetime. It was once believed that the only important systemic complication was involvement of the joints, but now we know that aside from the dangerous influences on the reproductive organs there is scarcely a tissue which may not at some time be affected. With the

full realization of these facts the medical profession may impress upon the laity and especially upon patients the immediate danger to the sufferer and the necessity for protecting others. One cannot visit a busy venereal clinic as ordinarily conducted without being impressed by the routine handling of cases and the neglect of physicians properly to instruct patients. I cannot think that the time is ripe for the enforced registration of all venereal diseases, but I do believe that health authorities would be justified in requiring the physician to advise the patient of the dangers of the disease, and to this end would recommend that the health department issue properly worded printed instructions which could be given to these patients, and at the same time hold the doctor personally responsible for the delivery and explanation of the directions given. Circulars are issued for controlling such contagious diseases as diphtheria and scarlet fever, and full printed data are available for tuberculous patients; it seems to me more important with regard to venereal disease than the infections mentioned. The necessary printed matter should be prepared by experts familiar with the difficulties in regulation and able to convey in simple terms the necessary information.

An all important educational element in this campaign is the instruction of the youth of our land in the principles of sexual hygiene. Here more than in any other pedagogic field is required the exquisite skill of the most tactful, experienced, calm, and judicious teacher. It is necessary to sail between the Charybdis of inadequacy and the Scylla of redundancy. The necessary information must be given without the danger of arousing any prurient curiosity or awakening slumbering impulses which later defeat the very object for which the effort is made. Such teachers must be absorbed in their subject, must possess a refined nicety of judgment, an accurately poised sense of proportion, and be able to weigh their thoughts and speech upon the alchemist's most delicate balance. Exaggeration is as dangerous as brevity and glittering, unsatisfactory generalities are ineffectual.

In this contest against social disease let us not forget that we are engaged in no dream of yesterday, no contest born of a present decade, but a crusade older than that of Walter the Penniless against a scourge mature and militant when the walls of Babylon were young. No legislative act, no ordinance of councils, no decree of officialdom can accomplish a noteworthy success until layman and expert have received and accepted the established fact that venereal disease is both avoidable and preventable, and that each citizen is, within himself, an armored and invincible host. The enlightened public opinion of progressive civilization has suppressed bigamy and has corrected the legal wrongs of the wife and mother, and when, in its might, the same agent resolves to protect her health from the vice of all time—social disease—greater advances may be made, but until that time shall have arrived such organizations as the American Society of Sanitary and Moral Prophylaxis must without ceasing push forward the educational movement upon which, in my opinion, ultimate victory to an immeasurable degree must depend.

Conclusion.—As a summary it may be stated that

I cannot endorse, (1) the medical inspection of prostitutes, (2) the licensing of prostitutes, (3) the medical supervision of brothels, (4) the medical inspection of women contemplating marriage, and (5) the obligatory registration of all cases of venereal disease.

It would seem that judiciously administered the following measures in some form might be given extended trial:

1. A more detailed supervision of the sale of alcohol, particularly to minors.
2. The suppression of the flauntingly conducted brothel.
3. The custodial care and treatment of those who knowingly propagate venereal disease.
4. Proper supervision of institutions for infants.
5. As a prerequisite to the marriage license, the medical inspection and certification of males.
6. A most exhaustive educational crusade directed toward training the minds of the young and enlightening adults of both sexes, and especially parents.

JEFFERSON MEDICAL COLLEGE BUILDING.

PROFESSIONAL SECRECY AND THE OBLIGATORY NOTIFICATION OF VENEREAL DISEASES.*

BY W. A. PURRINGTON,
New York.

Your president has done me the honor of asking me to address you from the standpoint of the law upon the topic assigned to me on the evening's programme; to discuss, that is to say, the legal aspects of the physician's duty, (1) to conceal, for the patient's benefit, what knowledge he has acquired in the professional relation, (2) to disclose that same knowledge for the general welfare.

There is a prevalent idea among physicians that they are under a legal obligation at all times to be silent as to what they have learned professionally of a patient or his affairs. There was no such obligation at common law. There is none to-day in this State, or, so far as I know, in any State or Territory of this country. There is in France. There physicians, surgeons, health officers, pharmacists, midwives, and all other persons entrusted, by reason of their office (*état*) or profession, with secrets, are liable to an imprisonment of from one to six months and a fine of from \$20 to \$100 if they disclose these confidences, except in those cases where the law requires them to lodge information (*ou la loi les oblige à se porter dénonciateurs*).

What we do have in this State, and in about half of the other States which, with wisdom or unwisdom, have copied or imitated our statute, is a rule of evidence that forbids licensed and registered physicians, professional or registered nurses, to testify in legal proceedings, without the patient's consent, to any knowledge *acquired in attending the patient in a professional capacity, and necessary to enable them to act in that capacity*. We will speak of this rule later; but let me say here, as I have said elsewhere, that it is, in my judgment, a means of fraud far more often than it is a protection to honesty and virtue.

There is a moral obligation upon all persons to

* Read before the American Society of Sanitary and Moral Prophylaxis, April 11, 1907.

sat guard confidences. Gossip and tale bearing have been always esteemed dishonorable, but the human mind works curiously, and the same man who, among his fellows, so far forgets decency as to boast of his *bonnes fortunes* will upon the witness stand in the divorce court "perjure himself like a gentleman." And so a physician who out of court will discuss with others the detail of a patient's maladies will refuse to speak of the case in legal proceedings.

The so called Hippocratic oath, so far as secrecy is concerned, was little more than a promise to abstain from idle, indiscreet conversation. It ran in this way: "I swear by Apollo, the physician, and Æsculapius, and Hygeia, and Panacea, and all the gods and goddesses, that according to my ability and judgment I will keep this oath and this stipulation . . . whatever I see or hear in the life *or men, whether in connection with my professional practice or not, that ought not to be spoken of abroad*, I will not divulge; considering that all such knowledge should be kept secret." This is simply a promise to act like a gentleman. Observe, also, that the vow of secrecy covers all information, whether acquired in the professional relation or not, and is limited to matter that *ought not to be spoken of abroad*. The right to disclose what should be known seems to be expressly reserved. This ancient oath is no longer universally administered. In the city of New York the University and Bellevue and Cornell schools have discarded it. The College of Physicians and Surgeons preserve it in a modified form, the oath administered to the graduating class being: "That you will keep private and inviolable all family secrets which may be confided to you as physicians, and will protect so far as in you lies the interests committed to your charge." It also requires of the graduates this promise: "We will inviolably keep the *innocent* secrets of the patients and their families for whom we may be called to prescribe." Here, too, is a very different obligation from that contemplated by the legal rule of evidence above alluded to, which exempts from disclosure only what was learned in the professional capacity and was necessary to enable the physician to act in that capacity.

It is worth while to note how this restriction upon medical testimony came about in New York.

At common law a client's communications to his attorney in reference to the cause of action in which the latter was retained were regarded as privileged from disclosure. This was upon the theory that, unless the client could speak freely, his side of the cause could not be properly presented, and the due administration of justice would be thwarted. If you wish to be cynical, you may say that lawyers and judges made the custom, and that it was for their interest to offer inducements to clients to come into the law courts. Personally, I prefer to attribute the rule to a sense of honor and justice.

In 1776, Elizabeth, calling herself Duchess of Kingston, was on trial before her peers in the House of Lords. She was charged with bigamy in that being the wife of Augustus John Hervey, then living, she feloniously and by force of arms married Evelyn Pierrepont, Duke of Kingston. She denied the marriage with Hervey, but there was reason to

believe that she had borne him a child. Mr. Caesar Hawkins, surgeon—later Sir Caesar—being called as a witness for the crown to prove the birth, and the lady's admission of her marriage to Hervey, was asked: "Did you know from the parties of any marriage between them?" He replied: "I do not know how far anything that has come before me in a confidential trust in my profession should be disclosed consistent with my professional honor." It was held that he should answer, Lord Mansfield saying: "If a surgeon was voluntarily to reveal these secrets, to be sure he would be guilty of a breach of honor and of great indiscretion; but to give his information in a court of justice, which by the law of the land he is bound to do, will never be imputed to him as any indiscretion whatever."

Lord Barrington being called to prove that the Duchess had admitted the first marriage to him protested that as a man of honor he should not be called on to reveal confidential communications, and on this point their lordships were much more troubled than over the surgeon's scruple. They adjourned for deliberation, and decided that even a peer of England must reveal in court the secrets of a lady. Six years later, in the case of *Wilson vs. Rastall*, Buller, J., uttered an *obiter dictum*, i. e., an expression not material to the decision of the issue before him. He said: "It is indeed hard in many cases to compel a friend to disclose a confidential conversation, and I should be glad if by law such evidence could be excluded. . . . There are cases to which it is much to be lamented that the law of privilege is not extended; those in which medical persons are obliged to disclose the information which they acquire by attending in their professional character," and he cited the *Kingston* case as in point.

This obiter appealed so strongly to the revisers of the New York Statutes that, shortly afterwards, they incorporated in their revision a rule that no person, duly authorized to practise physic or surgery, should disclose any information acquired in attending a patient professionally and necessary to enable the practitioner to prescribe for the patient as a physician, or do any act for him as a surgeon. But they attached no penalty to a breach of the prohibition, which has always been treated as only a rule of evidence; nor did they adopt Buller's suggestion that friends should also be exempted from disclosing confidential communications. They did, however, extend the rule to penitent and clergy. About half of our States have adopted the substance of this legislation in varying phraseology. Massachusetts and New Jersey, however, are not among them, or were not when I had occasion to examine the subject some time ago, but one can never tell what the last legislature of a State has spawned. Our own law has been modified from time to time; and whereas it is a general rule that any person may waive his rights, the statute now provides that a party to a law suit may not waive this privilege except on trial and in open court; although his attorney may do so before trial. So that the attorney has become greater than the client, and may waive the latter's privilege, when the client himself may not do so.

The avowed object of this anomalous provision

of law was to prevent insurance companies in their policies and other wicked corporations in their written agreements from taking advantage of ignorant contracting parties, and securing for themselves, in the event of litigation, a right to exhibit the true physical condition of the insured or injured person.

There are many injustices resulting from this legislation. To enumerate them all, were it possible to do so, would be to transcend the limits of this paper. But let two instances suffice: A. procures insurance on his life upon a statement that no one in his family has ever died of consumption. That statement is a condition of the insurance. A. dies, and his representatives claim the amount of the policy. Payment is refused upon the ground that his father died of consumption, and therefore that the contract of insurance was procured by a false representation. Suit is brought, and the company calls the physician who attended A.'s father to prove that his patient died of consumption, and that he filed a certificate to that effect with the health department as required to do by law. You see at once that the physician is called upon to reveal no secret, for the cause of death is already published under the express command of the law. The reason of the privilege no longer exists, and upon the familiar principle that where the reason of the rule fails, the rule itself ceases to exist, it would seem that the physician should be allowed to testify to the fact already published to the world. But his testimony is excluded and the insurance company to this extent is deprived of its defense. Again, note this type of cases frequently occurring. A well known oculist of this city asked me some time ago whether he could properly testify in a Massachusetts case at the request of the Boston and Maine Railroad, under these circumstances: There had been a slight accident on the road, and one of the passengers, a woman, made claim against it for damages, alleging that a defect in vision from which she suffered was due to injuries received in the collision. The road's attorney discovered that, more than twenty years before, she had been operated upon in the Massachusetts General Hospital by my friend for this identical condition. Her claim was fraudulent. She was really trying to steal the defendant's money with the aid of the law. I advised the surgeon that whether he should go on or not was a matter resting in the forum of conscience; that so far as the law was concerned he was free to testify, Massachusetts never having adopted the New York rule.

It seems clear enough, as a matter of justice, that if a man, for the sake of winning money in a law suit, puts in issue his bodily condition, makes it, indeed, the measure of his damages, the defendant, and the court, should be entitled to know all about that condition, its causes and extent, and to that end should be permitted to call his attending physician; but the law forbids this, unless the physician be unlicensed, in which event the sacredness of the privilege disappears.

The question has often arisen whether in criminal actions this principle can be invoked for the defence, the last instance being in the recent Thaw trial. Here, again, limitations of space prevent anything like full discussion. I have considered the matter in Hamilton's *System of Legal Medicine*, and Professor Wigmore has more recently treated the topic

in his monumental work on *Evidence*. The saying is that the statute is to be used as a shield for the patient, not a weapon of defence for the wrongdoer. Even with a murderer, however, who defends on the ground of insanity his physician may not be called against him. But it has been held that the physician of the victim may be called, and that the slayer cannot exclude the testimony by invoking the victim's privilege. This was ruled in the poisoning cases of Pierson and Carlyle Harris. The acme of absurdity was reached in the Depoister case where defendant, charged with criminal assault on a little child, sought to exclude the testimony of the physician examining her.

The statutes of different States vary in their provisions, and every case must be decided under the law of the forum.

So much for the statute creating the privilege as a rule of evidence. But there are others expressly requiring medical men to divulge the information acquired in attendance and necessary to insure proper treatment of the case, namely, those requiring physicians to report to boards of health births, deaths, and contagious diseases. It is a matter of common belief that many physicians consider these laws to be more honored in the breach than in the observance; whether, for instance, the birth of a child to an unmarried woman should be reported puzzled the French writers on the subject, but in one actual case in court it seems to have been held sufficient to report the fact of a birth without revealing the name of the mother. So, while their writers, and notably Brouardel, are of the opinion that a physician is not justified in revealing to a father whose daughter is about to wed a syphilitic the condition of the prospective groom, Vibert is of the opinion, citing a decree of the court of Dijon, that a physician who should fail to inform a wet-nurse that the child entrusted to her was infected with congenital syphilis would be guilty of a base act and liable in damages, should the disease be communicated; and yet this same writer expresses an opinion that a physician who should report a servant's infected condition to an employer would be liable for damages for breach of his duty.

Under our system of jurisprudence physicians reporting venereal diseases might become liable to the persons wronged in two ways: First, it is slanderous to say, and libelous to write, that a person is so infected. For both slander and libel a civil action lies against the defamer in which, as a general rule, the truth is a complete justification or defense. For libel, i. e., written defamation, a criminal action also lies; to which it is a defense to show that the libelous matter is true and was published from good motives to justifiable ends.

When the statute imposes a duty on the physician to report contagion, his report is privileged, is not presumed to be malicious, and is only actionable upon proof of malice and lack of probable cause for its publication; but if negligence or ignorance in making such a report is proved, an action will lie as in other cases of malpractice to recover damages therefrom resulting. A case arising some twenty years ago, and familiar to many of you, was *Brown vs. Purdy*. Dr. Purdy, who had been president of the County Medical Society, was called to attend Miss Brown, whose skin was in eruption. Diag-

nosticating the case as smallpox, he reported it to the health board, which sent one of its own inspectors, who, having made a similar diagnosis, removed the patient to the smallpox hospital. Maintaining that the eruption was only an eczema, Miss Brown brought action and recovered a substantial verdict, which was reversed upon appeal on the ground that in making the report Dr. Purdy only did his legal duty and was not liable for the mistakes of the health officers. There was no slander or libel, for the report was privileged. The case would have been otherwise if he had reported to one to whom he owed no duty.

Conclusion.—To sum up the legal aspects of this matter:

First.—There is no common law duty upon the physician to keep sacred what he has learned in attending his patients, and he is required by law to reveal it as a witness in court.

Second.—In New York, and about half of the other States, he may not testify to what he has learned in his professional capacity that was necessary to enable him to act in that capacity, although he may be compelled to reveal all secrets he may have learned that were *not* necessary to enable him to treat the case. He is, moreover, compelled to testify under certain circumstances in criminal cases; e. g., as to the cause of death of the victim of murder; and he is also expressly required by the laws and health ordinances to report contagious diseases.

Third.—The privilege belongs to the patient, not to the physician, and the latter may be compelled to testify as to the professional relation when the privilege is properly waived.

Now, a final word as to the ethical side of the question, taking as a text the case of a physician whose patient, in an infectious stage of venereal disease, insists on consummating a marriage.

I assume from what appears in the *Transactions* of this society, and your president's work on *Social Diseases*, that modern medical science considers that the venereal diseases are among the greatest scourges of the race; that the one formerly regarded by medical men as comparatively innocuous is, in its sequelæ, perhaps the more dreadful of the two; that the sin of the infected is constantly visited upon the innocent, and entails sterility, insanity, and a host of maladies, to the danger of the State.

If these assumptions are true, no one will dispute that whoever knowingly communicates either of the venereal maladies to another, inflicts upon that other a direct bodily injury and a grievous personal wrong. Indeed, to many honorable and sensitive persons death would be more welcome than a life polluted by these shameful diseases, accompanied with a consciousness that the evil had been transmitted, however innocently, to children.

The highest law, human or divine, is "Thou shalt not kill," as the King James version translates the commandment, or "Thou shalt do no murder," as the Book of Common Prayer renders it in closer conformity to human law. But we are, by the law, authorized to kill under certain circumstances. Homicide is expressly justified when committed by the slayer in lawful defense of himself, his kin, his servants, or even persons in his company, whenever

there is reasonable ground to apprehend a design by the person slain to commit a felony *or a great personal injury*, and after *reasonable warning* has been carried out. So abortion, criminal if committed with evil intent, is lawful if performed to save the mother's life.

Now if this great dominant commandment "Thou shalt not kill" is subject to limitations, it would seem obvious that even if there were, as there is not, a general legal obligation upon physicians to conceal what they have learned of the patient's condition, that duty would be less in degree than the greater duty of saving life and preserving health; and it would seem to follow that whenever the duty of preserving a patient's secret conflicts irreconcilably with the higher duty to the individual or the State, the former should yield. In the law he who aids and abets the perpetration of a crime is himself a criminal. In the domain of morals he who assents to the perpetration of a wrong that he might prevent is a wrongdoer. St. Paul only held the garments of those who stoned Stephen; he threw no stone himself, but he never forgot that he stood by and assented. If he who communicates a venereal disease inflicts a bodily injury to the person, and a wrong to the State, and if the law justifies homicide committed in resisting great bodily injury, then it would seem justifiable even to kill in order to prevent willful infection. And it would be justifiable, except for the fact that homicide is permitted only as the last resource; not when other means of resisting the evil are at hand. If one should see a physically clean man about to outrage a woman, he would be justified in killing him, if there were no other means to prevent the wrong; and the average man would shoot such a miscreant like a mad dog.

The Articles of War of the United States Army expressly provide that such creatures may be killed, declaring that any soldier, whether officer or private, committing wanton violence against the person in an invaded district, even after forcible capture of the place, may be punished under court martial by death, *and if caught in the act may be shot on the spot*. Poisoning weapons or wells or sending out infection in any way is forbidden as uncivilized under the laws of war. If this is so against an enemy, why is not poisoning the springs of life in those most entitled to love and protection equally so? Upon what ground is a person who deliberately proposes to spread contamination entitled to any privilege?

So it seems to me that a physician who knows that an infected patient is about to carry his contagion to a pure person, and perhaps to persons unborn, is justified both in law and morals in preventing the proposed wrong by disclosing his knowledge, if no other way is open. Were I a physician, it seems to me that if I abstained from preventing such a wrong it would be much more from fear of the results to myself of the disclosure, loss of practice, and the like, than from any sense of duty to the miscreant capable of so base an action.

If A. comes to a lawyer and says, "I have committed a crime, defend me," the secret is kept. It is a tale of the past. But if he comes saying, "I intend to commit a certain crime," it is the lawyer's duty to prevent him: there is no secrecy, except

when the confidence is given for legitimate purposes.

The refusal of boards of health to classify the venereal diseases as contagious, and the advisability of reporting these maladies in all cases, are practical and difficult questions of wide scope, and not discussible in this paper, which is already too long.

Standing here to expound the law, without giving any opinion on the wisdom of making such reports as a practical method of modifying the evil, I have only to say that if such disclosure is the best way of dealing with the problem the law does not forbid, but rather commands it.

78 WALL STREET.

GASTROINTESTINAL DISTURBANCES IN INFLUENZA.*

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In the majority of cases of grippe, the gastrointestinal tract is only slightly affected. Vomiting is a frequent initial symptom, and there is a tendency to constipation. Often, however, loss of appetite is the only symptom. On the other hand, we see cases in which the disturbances of the alimentary canal completely dominate the clinical picture, where the respiratory organs are not at all affected, and where the nervous symptoms have only mildly developed. In most of these cases the diagnosis is only made when the patients are observed in the midst of an epidemic. It may happen that one member of a family presents the symptom complex of the respiratory form, while another member, taken sick at the same time, shows only disturbances of the digestive organs. In a certain number of cases both the respiratory and the alimentary tract are involved at the same time. In another group first the one tract is affected, and then the disease invades the other. When the alimentary canal is the initial seat of the disease and the diagnosis is still uncertain, the sudden development of a bronchitis or pneumonia may clear up the situation.

It is said that in cases where gastrointestinal symptoms predominate, lower temperatures prevail than in cases of the respiratory form and that they have a strong tendency to linger for a protracted period. Aside from this they present different clinical pictures, resembling as many different diseases of the digestive organs. In fact one can observe all the manifold symptoms which we see in the acute diseases of the digestive tract, from the mouth down to the rectum, and varying in intensity from the mildest catarrh of each part to the most violent hæmorrhagic inflammation. The great tendency to hæmorrhages which is so common in grippe, shows itself everywhere in the digestive tract. We see bleedings from the gums, from the pharynx, and we observe the passing of blood by rectum. The bleeding may be chiefly due to the pronounced hyperæmia of the affected mucous membrane, and is then only of moderate character. In other cases, however, the inflammation is so intense that it leads to necrosis and to the formation of more or less numerous ulcers in the stomach, as

well as throughout the small and large intestines. The frequent bloody evacuations in such cases of hæmorrhagic enteritis makes them appear like cases of dysentery.

In mentioning briefly a few of the manifestations which go with gastrointestinal grippe I wish to call your attention to the tongue, which in most of these cases is very heavily coated with a dry, dirty, grayish film. This unusually heavy coating, which is not observed in ordinary cases of grippe, is considered as very characteristic of the gastrointestinal type. When the stomach is affected, vomiting, otherwise only an initial symptom, may become very persistent. We find the stomach of such patients exceedingly tender on palpation and the spontaneous pain may become very severe. Attacks of severe epigastric pain are not only seen during the period of fever, but also during convalescence. We see similar attacks of colic in the lower parts of the abdomen in cases where the intestines are involved. The inflammation of the intestines causes more or less diarrhœa and often pronounced meteorism. When such patients with diarrhœa and meteorism complain about severe headaches or become delirious they look very much like those with typhoid fever, especially when the spleen is enlarged. In grippe, statistics about the enlargement of the spleen differ quite considerably. On the whole, however, it must be said that in the majority of cases the spleen is not palpably enlarged. Aside from the lack of a pronounced enlargement of the spleen, there are, as a rule, other symptoms which make it comparatively easy to exclude typhoid fever at a stage when we could not rely on the Widal test for a diagnosis, e. g., the sudden onset of the grippe with chills and high temperatures, with severe pains in the back or the limbs, the absence of roseola, the development of herpes labialis, etc.

In some cases the enteritis becomes particularly severe in the cæcum and the appendix, or it is altogether restricted to this region. We get then the symptom complex of appendicitis. The importance of grippe as an ætiological factor in appendicitis has been greatly exaggerated by some authors. It is nevertheless true that in a certain number of cases appendicitis is really caused by the grippe. That fact has been conclusively proved by obtaining influenza bacilli from the diseased appendix. In another group of cases the inflammatory process extends rapidly over the entire alimentary canal, causing such violent vomiting and diarrhœa as is otherwise only observed in cases of cholera. Again the inflammation of the bowels may be so intense that it permeates the whole wall of the viscera, thus causing peritonitis with serofibrinous or purulent exudation. The occurrence of such cases of peritonitis without perforation of the gut has been demonstrated by post mortem findings. There are other cases where the peritonitis follows perforation, especially of the appendix.

I mention all these serious conditions to show to what this treacherous disease may lead.

A word should be said about the frequency of jaundice in grippe. The statement made by some writers that jaundice is of frequent occurrence is not substantiated by trustworthy reports. Although undeniable cases of jaundice have been observed, their number is small. As a rule the liver is only

* Read at the Symposium before the Eastern Medical Society, New York, 1910.

slightly enlarged, in accordance with the severity of the infection and the height of the fever. In rare cases, however, the influenza bacilli create more serious disturbances in the liver, even to the extent of causing a liver abscess.

In addition to the inflammatory processes brought on by grippe we must discuss those conditions which are caused by the action of toxins. That the toxins of grippe are severe poisons is demonstrated by their deleterious action on the alimentary canal. The paralyzing effect which these toxins have on the glands, as well as on the nervous system of the digestive tract, are often the cause of the slow recovery which we witness so frequently in cases of grippe. In some cases long continued loss of taste is a very annoying symptom. In others complete loss of appetite and a general weak and low activity of some or all of the gastrointestinal functions make it difficult and sometimes almost impossible for the patient to take and digest sufficient food for a speedy recovery. Sometimes the loss in weight is so great and all efforts to have the patient regain the loss are so futile that the suspicion of a malignant growth is aroused. Even after full recovery in every other way the organs of the alimentary tract often remain in a weakened condition. I am frequently told by patients that the digestive disturbances from which they are suffering date back several years to an attack of grippe. Most of them suffer from atonic constipation, others from a tendency to diarrhœa. They frequently complain about abnormal sensations in the abdomen during digestion, the stomach especially being often the seat of annoying sensations. Thus we readily understand why the memory of this disease stays so long with its victims.

52 EAST FIFTH-EIGHTH STREET.

ACUTE ŒDEMATOUS EVERSION OF THE VENTRICLE OF MORGAGNI.

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Eversion of the ventricle is an exceedingly rare condition, generally presenting a chronic course, but usually not a menace to life. In the case I present the symptoms were of a dangerous order, indicating fatality.

Etiology.—I have been able to find only a few cases of œdema of the ventricle and these of a mild type. Two cases are reported by Hajek, one occurring with a luetic ulcer of the vocal cord, the other accompanying a tuberculous ulceration of the anterior part of the ventricle. Koschier found at autopsy an œdematous eversion of the ventricle; Costellat, quoted by Sestier, reports a case of double œdematous eversion. Œdema of the ventricle may accompany an œdema of the epiglottis as in a case reported by Worthington, and is common with œdema of the aryepiglottic folds, as was first shown by Sestier. Foreign bodies may cause it, as was demonstrated experimentally by Koschier inserting a needle through the dog's ventricles. Subglottic œdema may produce œdema of the ventricle by penetrating the vocal cord, as was shown by Massier in a case reported of subglottic diphtheria where œdema of both ventricles appeared. Œdema may

appear locally because of a tumor in the ventricle as observed by Brindel, Chappell, and others.

Case.—Mrs. F. Singer, aged forty, on March 10, 1906, was taken suddenly with chill, fever, and sore throat, diagnosed as a four-day tonsillitis. In three or four days she recovered. After filling a pharyngeal point out the following Sunday the patient her voice was hoarse. The continuance of this the next day caused her some apprehension, and she went to her family physician, Dr. N. S. Drummey. He found her sitting up in bed supporting herself, cyanotic and dyspnoic, with marked stridorous respiration. Her head was extended and jugulum retracted; her chest and neck was inflated strongly, her voice hoarse, a faint whisper, her facies restless, anxious, and drawn. She complained of a lump in her throat. She told him the immediate cause of her dyspnoea was from exertion in lifting a sick friend. Œdema of the larynx was diagnosed, and I was called in consultation to operate if necessary.

On laryngoscopic examination I found the right ventricle of Morgagni everted and so œdematous as to render a view of the vocal cords impossible, the mass being as large as a pigeon's egg. The right arytenoid was practically immobile on phonation and inspiration. Posteriorly there was a small triangular space for the passage of air. Intubation was performed, immediate relief following. Twenty-four hours later the tube being removed, an examination revealed no sign of the œdema, the larynx appearing normal except for slight congestion due to the pressure of the tube.

There was no history of a foreign body or of any physical or chemical cause, although I have thought she may have overtaxed her voice. She has continued her singing the past four years without any recurrence of this œdema.

Pathology.—The connective tissue of the ventricle is closely attached anteriorly to the thyroid cartilage and to the internal and external arytenoid muscle, causing the œdema to be sharply limited at this point. It is much freer posteriorly, being in direct connection with the loose connective tissue of the aryepiglottic fold. On the edge of the vocal cord the connective tissue adheres closely. Posteriorly the mucosa extends over the processus vocalis on to the inner surface of the arytenoid, where it is closely attached, thus rendering this point free even in a high degree of œdema.

Œdema of the ventricle thus hindered anatomically gives rise to a long oval tumor which fills out the whole ventricle and sometimes narrows the entrance to a linear fissure. The ventricle is obliterated when of a higher degree, and in the double case of eversion mentioned by Costellat, the ventricles touched. Where the larynx was almost completely filled, the size of the tumor is dependent on another anatomical condition, namely, an increased amount of connective tissue allowing greater expansion and due to the deep upward reaching recess between the thyroid cartilage and the internal lateral wall of the ventricle, known as the appendix of the ventricle.

Distinctive Diagnosis.—Laryngocœle ventricularis simulates this condition closely. It is very rare, and usually connected with a pouch externally. It may, however, be limited to the larynx. During phonation the appendix of the ventricle is especially filled with air, but this action being intermittent, it quickly resumes normal size. The false cords show the effect in sometimes protruding enough almost to touch one another and render the vocal

cords invisible. In Cohen's case it resembled a polyp, globular, of about the size of a cherry, and pale in color, owing to distention of the mucosa. Pelletier reports a case resembling a polyp of the right vocal cord. In inspiration it interposed itself between the cords, but its disappearance and recurrence differentiate it from oedema. Its course is chronic. Oedema must not be confounded either with various kinds of tumors of the larynx.

Treatment.—I have found intubation, as recommended by O'Dwyer, efficient in this case and in mild cases of oedema of the larynx. Ingals reports two cases of oedema of the larynx in which the tube failed to relieve. It is always advisable to have a tracheotomy set ready for use if occasion demands. Gottstein advises pilocarpine. Steam has been recommended, but its use seems questionable, since one of the most common causes of oedema of the larynx in children is the inhalation of steam from a tea kettle. Bryan suggests a cold coil for the neck, but the weight would be objectionable. Semon performed thyrotomy for eversion very effectively. Scarification is a worthy method of reducing oedema of the larynx, but in the case reported this could not be tried, the patient being unable to stand the strain.

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76 COMMONWEALTH AVENUE.

THE RADICAL MASTOID OPERATION.

*Indications for and Results from its Employment.**

BY W. SOHIER BRYANT, A. M., M. D.,
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The radical mastoid operation is one of the greatest achievements of modern otology. It offers a certain cure in the most obstinate cases of otorrhoea, thereby doing away with disturbances of the peripheral space organ; facial paralysis; total loss of hearing; metastatic abscess and general sepsis; sinus and jugular phlebitis and thrombosis; pachy-leptospinal and cerebrospinal meningitis; epidural, cerebral, and cerebellar abscess; or a fatal termination of the chronic condition.

There are various methods of procedure which are described by various authors under the heading of The Radical Mastoid Operation, differing in certain technical points which we need not consider in detail in this article.

For convenience we may place the indications for this operation in two categories: First, those cases of acute mastoid involvement with extensive infec-

tion or destruction of the temporal bone, the complete eradication of which destroyed tissue is demanded, requiring therefor the complete evacuation of all the cellular structures connected with the middle ear and mastoid; second, certain cases of chronic suppuration of the middle ear. In these types of cases the radical mastoid or mastoidotomy operation accomplishes the removal of the source of the suppuration and provides sufficient outlet for any further morbid accumulation from within the middle ear cavities, thus insuring final termination of the suppuration.

The point to be decided in the second category of cases is whether the operation offers the most desirable means of checking this annoying and dangerous ear affection. We may look at the question from several points of view: First, whether the condition of the ear is serious enough to demand surgical interference; second, whether the ear disease is a serious menace to the rest of the body; third, whether the condition of the ear indicates an improbability or impossibility of arriving at a cure without the radical operation; fourth, whether cleansing and mild methods of healing have proved futile after having been applied with the requisite skill; fifth, whether the patient is in a sufficiently good general physical condition apart from aural causes of weakened vitality, to undergo an operation of this magnitude; sixth, whether for some personal choice of the patient the radical operation is demanded. When any one of those questions can be truthfully answered in the affirmative the radical mastoid operation is indicated.

First, there are cases where there are symptoms of meningeal, cerebral, or cerebellar complications of the ear infection, or phlebitis, or general sepsis, or where there is probability of rapid development of one of these dangerous complications.

Second, cases where the patients suffer from slow general infection from the ear, or where there are more local manifestations of spread of the septic forces in the cervical glands, tonsils, and respiratory tract.

Third, there are cases where the bony walls or contents of the tympanum are carious over more than small areas, and where a tuberculous process is at work.

Fourth, there are cases which are often amenable to the milder means of treatment about which there is more diversity of individual opinion than about the rest. This absence of unanimity of opinion is due to the varying success of different specialists with the milder means of treatment. Under the term milder treatment we include ossiculectomy, tympanic curettage, removal of granulations or inspissated accumulations, and most important of all, the various means of mild antiseptic cleansing treatment with fluid or dry applications. This latter form of treatment may have to be prolonged and persisted in for months, but in the writer's experience a satisfactory result is sure if thus carried out. His experience has been that all cases not included under other classes will yield to the treatment described under this class and do not require a radical operation.

Fifth, there are cases where the magnitude of the radical operation must be considered. The operation should be completed in less than an hour, and

no shock is expected. Loss of blood is trivial. The convalescence, adult stage, lasts from five to six days. Complete and final convalescence should be obtained in from two to three weeks. In spite of the mild nature of this operation in taxing the vitality of the patient there are some who could not well stand it.

Sixth, there are people who think that if an operation is done the cure is simple and sure.

The results of the radical operation performed by the most approved methods are three, viz.: Cessation of suppuration, complete lack of external deformity, and greatly improved hearing. No complications should follow the operation.

The question of postoperative hearing is an exceedingly important one and has recently been studied quite thoroughly by Heath, of London, who has succeeded in producing very satisfactory hearing following his operative work. In his article (*Lancet*, August, 1906) he gives the details of cases, in all of which the results were good as to cessation of the suppuration, cosmetic effect, and especially so in regard to the increase of hearing. These cases were operated on in June of the same year (1906). The special point in his technique is the preservation of the mechanism of the middle ear and the restoration of its functions.

The writer has done some work in the same general line with equally good results, but with certain differences of technique. He reported a case before the American Otological Society in June, 1906. This case was operated on in July, 1905, with immediate cessation of suppuration and the restoration of normal hearing. No noticeable scar resulted. (See also *New York Medical Journal*, LXXXIV, No. 16, pp. 780-1, October 20, 1906.)

In the mind of the profession certain accidents are associated with the radical operation. The chief of these is injury to the facial nerve. This accident happens from two causes: First, mechanical violence; second, perineuritis following the operation. The first cause is avoidable by good technique, and even if the damage occurs it is fortunately very seldom a permanent one; the latter is rare and is never permanent. Another accident is loss of hearing due to injury to the middle ear. This can be avoided by following the improved technique. As illustrative cases of what can be accomplished under favorable conditions I offer the following:

CASE I.—A lad, of seventeen, had had chronic suppuration of the middle ear for several years. When first seen he had swelling and tenderness behind and above the auricle, severe headaches, and slight rise in temperature. His hearing was almost *nil* on the affected side. A radical operation was performed. The patient was up on the second day and out of doors on the seventh day. The ear was wholly healed, and the suppuration permanently stopped, the hearing restored to normal, and by the eighteenth day the scar was scarcely perceptible.

CASE II.—A girl, twelve years old, had had a suppurating ear most of her life. When first seen by me there was a foul discharge from two suppurating sinuses leading into the mastoid antrum, one behind and one above the attachment of the auricle. She had practically no hearing in the ear at all. The radical mastoid operation was performed. She was up on the second day and out walking on the ninth. The ear was wholly healed and permanently dry on the sixteenth

day. The suppurating sinuses had healed and the hearing was much improved.

Conclusions

1. The radical mastoid operation assures cessation of the purulent otitis.
2. It is an operation for the immediate relief of this condition.
3. It may be the operation of final recourse.
4. The hearing is much improved after the operation, since in a number of cases the auditory function of the middle ear can be almost completely restored. A very small number of cases derive no improvement in their hearing from the operation.
5. The cosmetic results are very satisfactory.
6. Paralysis of the facial nerve is a very rare and unexpected accident in skilful hands.
7. The results are uniformly satisfactory when the best technique is employed.

57 WEST FIFTH STREET

THE DIAGNOSIS AND TREATMENT OF GASTRIC NEUROSES.*

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A consideration of the neuroses of the stomach leads us first to recognize the slight attention devoted to this field in the practice of medicine. Paper after paper is presented upon cancer, ulcer, or catarrh of the stomach, but how few upon the nervous affections! Probably every physician will agree that seventy-five per cent. of all persons who consult him for stomach trouble are suffering from some difficulty due to an abnormal pneumogastric, sympathetic, or general nerve condition. Among those who devote themselves to internal medicine exclusively this percentage is largely increased. Our knowledge is somewhat limited as to the etiology of these disorders, hence we should be benefited by a closer study of their diagnosis and treatment.

The ease with which we pronounce a diagnosis of nervous dyspepsia may be one cause for our lack of study along these lines. Such a diagnosis may be made with the least exercise of gray matter, if the symptoms appear at all obscure. Unfortunately for the simplicity of our task we do not always encounter nervous symptoms unassociated with actual organic disease of the stomach. To illustrate, we sometimes find a continuous secretion of gastric juice combined with an organic stricture of the pylorus. Here we have the symptom complex of disturbed nerve function with the systemic results of malnutrition. Before entering upon a detailed discussion of some of the nervous diseases in the stomach we must admit the necessity for one procedure, viz., the use of the stomach tube and the subsequent examination of the contents. Of the objection in the mind of the general practitioner to this premise I am well aware, but I do not agree as to its validity. Physicians say to me: "Yes, that is all very well for the specialists, but the people will not allow us to use such measures." But it seems to me this attitude of the layman is our own fault.

Presented at the Eastern District Meeting of the American Medical Association, October 6, 1906.

An explanation to the patient that common sense requires an examination of the food in the stomach during digestion to determine the causes of disturbance, seldom fails to convince him. Especially will this be true if some effort is made to point out the difference between their idea of a hasty use of a stomach pump in poison cases and your purpose to employ simply a stomach tube. How often we increase the patient's dread by ending our advice somewhat as follows: "Well, if this medicine does you no good I am afraid we shall be obliged to resort to the stomach pump."

It is my purpose in this paper to direct your attention briefly to some of the more common gastric neuroses, to discuss their diagnosis, and to indicate some points in the treatment.

1. Nervous anorexia or a complete absence of the sensation of hunger associated with loss of appetite is a very difficult condition to combat. This sensory neurosis usually follows some great mental depression, family troubles, or a similar cause. The onset of the symptoms is gradual, the patient first discarding the heavier articles of diet; later almost every form of food is refused. The diagnosis is not difficult if one sees the patient from the very beginning of the disturbance. On the other hand, if the patient consults you after emaciation has become marked and no history can be obtained, the diagnosis may be obscure. The patient's hesitancy in disclosing family troubles or worries renders the history a trying problem. In my experience the differential diagnosis between nervous anorexia and tuberculosis with slight lesion is puzzling. The train of symptoms found in nervous disease, no appetite, anæmia, pallor, asthenia, may also resemble cancer. However, loss of appetite from organic disease of the stomach, whether due to catarrh or cancer, is almost always accompanied by fear and foreboding. In nervous anorexia the patient seems to be totally indifferent to this as well as other changes in his environment. The findings in the stomach contents after test meals will aid us. The treatment of this disease, like the treatment of all other nervous diseases of the stomach, rests upon one fundamental principle, perfect frankness and honesty with the patient. I make this statement after a trial of both methods. The line of least resistance leads one to admit to the patient the existence of some organic malady, and then to cure the same by the use of placebos. This plan is rarely successful. The proper line of procedure is to make a careful diagnosis, using all the methods of precision, then to explain to the patient that the disease is neurotic in origin and assure him that his cooperation and will power are essential to a cure. The treatment of the early stages is not usually so difficult. Food should be given at frequent intervals and should be varied. Some one of the bitter tonics given half an hour before the three main meals is frequently helpful. Tincture of *nux vomica* in ten drop doses answers very well. Later, after emaciation has resulted and the condition has become chronic, very little can be done at the home of the patient. Residence in a hospital or sanatorium for several weeks with isolation is necessary. Very stubborn cases will require a few trials with forced feeding by the stomach tube. This plan serves to prove to the

patient that food causes no actual discomfort, and then he is willing to eat in the usual fashion.

2. Nervous vomiting is an affection which but to mention is to dread. All of us have at times exhausted our resources to overcome this stubborn malady. Vomiting is such a complicated process and is produced by such diverse pathological conditions that we must be very cautious in ascribing it to purely nervous influences. The diagnosis of "vomitus nervosus" must be made by exclusion. Many diseased conditions of the stomach, as well as improper articles of food, will produce vomiting. Then we may find vomiting due to spinal or cerebral irritation or to reflex disturbances from other diseased organs. It is at times produced by hysteria or neurasthenia.

The diagnosis should aim to prove the nervous nature of the malady and to determine its cause. This latter act is not always within the realm of possibility. Patients who are subject to this disorder vomit without any premonitory symptoms, and easily without effort. The kind of food ingested has no influence upon the act. Some patients will only vomit after the ingestion of the most readily assimilated food stuffs, while indigestible substances will not produce any ill effect. One of my patients habitually vomited after eating meat or egg or taking milk in any form, but could eat with impunity pastry, cakes, salads, and lobster. Another class of patients will vomit in a fasting condition as frequently as when the stomach contains food. The intermittent depression of spirits at times complicates this state. In my own cases this has not been sufficiently frequent or marked as to approach the state of melancholia. A single examination of the stomach contents after a test meal, when the patient will allow the food to remain long enough, is not always sufficient. If only one test is made the conclusions are not invariably helpful. A majority of cases show the normal degree of acidity and the usual amount of fermenting power. One at times finds cases with a variation from normal to hypoacidity or hyperacidity. Several tests will clear this point. A case of nervous vomiting taken from my records will illustrate one type.

CASE I.—The patient, an unmarried female, nineteen years of age, was seen in consultation with Dr. D. V. Courtright, of Circleville, April 17, 1904. The family history was negative. She had not suffered from any severe illness. About six months ago the patient began to vomit after taking food, and did not notice nausea or soreness. Vomiting occurred about once a day in the beginning of the attack, gradually increasing in frequency until at the time of examination everything eaten was vomited. The patient's weight after the beginning of the trouble was 210 pounds. At the time of examination she weighed 180 pounds, a loss of 30 pounds. The patient was somewhat pale. No evidence of disease could be found in the chest or abdomen. No tender points were present along the spine or upon the trunk.

While in my office, the patient, not having eaten for seven hours, was given a stale roll and ten ounces of tea. She was then asked to lie down and an effort was made to divert her attention from herself by conversation. In about three minutes, with no effort, she vomited an ounce of food. This was repeated twice before the expiration of the hour required for the test. Three ounces of stomach contents were then removed by the

tube. This was found both before and after the operation, and was really normal. The hemoglobin was 60 per cent. Serum specimens of the blood showed no changes. The urine was normal. Dr. Courtright treated the patient by the use of bromides, morphine, and rest in bed with rectal feeding for ten days, but with a gradual return of the symptoms. The patient was still vomiting and had lost in all 60 pounds. Dr. Courtright agreed with me in advising the parents of the girl to place her in a hospital for treatment, but this they were unwilling to do.

The regimen of the hospital with the use of the high frequency current, forced feeding, and hydrotherapy usually effect a cure in these cases. Then, again, some state that they were cured by Christian science.

The term *neurasthenia gastrica*, or nervous dyspepsia, implies those vague, incompletely defined disturbances which occur during the digestive act. The patients show no demonstrable change in the stomach. Many and varied clinical symptoms with no organic lesions are present in this disease. This unbalanced state may follow debilitating or chronic diseases, sexual excess, abnormal conditions of the genitourinary organs. Hysteria and neurasthenia are often complicated with nervous dyspepsia. The patient afflicted with this malady experiences discomfort after food, a sensation of fulness, slight burning, belching, drowsiness, fulness in the forehead. These symptoms often continue through the period of digestion, and are followed by sensations of dizziness or weakness. In many cases the patient will be uncomfortable at all times, whether the stomach is empty or full. The intestines are not free from apparent disturbance. The patient says he feels that his abdomen is filled with gas and he is usually constipated. We find men much more frequently affected than women. At times the nutrition becomes involved and the patient loses in weight.

The diagnosis is arrived at by close observation, persistent questioning about the condition, thus obtaining a clear history. Together with these points one must study the gastric secretion, not only after a test breakfast, but also after a test dinner. We are not justified in diagnosing nervous dyspepsia if we find food in the stomach six hours after a dinner consisting of mixed foods. The presence of persistent increase in hydrochloric acid will eliminate cases of simple hyperchlorhydria. Some mild cases of nervous dyspepsia resemble very closely gastric ulcer. The absence of blood in the gastric contents and intestinal excretion is a strong point favoring the existence of nervous dyspepsia. The pain usually disappears upon pressure when due to nervous dyspepsia, and is increased if due to ulcer. If nervous dyspepsia is associated with neurasthenia we find typical tender spots. When we bear in mind that ulcer of the stomach is met with at times in neurasthenic individuals we realize, more forcibly the difficulty in diagnosis. It has been found that operations performed for gastric ulcer associated with neurasthenia are not very successful. In cases where the diagnosis is uncertain the patient should be subjected to the rest cure, as in either event the best results will be brought about by such a course. A few patients with nervous dyspepsia will be cured

merely by general stimulation and assurance that no organic lesion exists.

Two instances explain this:

CASE I.—A person coming from a general hospital of Cleveland, Ohio, consulted me for what he called gastric ulcer. The patient presented the appearance of perfect health. His weight four months previously was 200 pounds. At this time a friend died after hemorrhages from gastric ulcer. Upon examination he stated that he had lost twenty pounds, which loss was caused by a gastric ulcer which had been in the region of the pylorus. Examination of contents of stomach after test meals of the blood, urine, and of chest and abdomen were made with no evidence of disease. He was assured that worry was the sole cause of the disturbance, and with the use of strychnine as a tonic for a short time he became perfectly well.

CASE II.—The second patient was seen in consultation with Dr. K. A. Norris, of Columbus. Her husband was ill with cancer. She feared she had cancer of the stomach. The usual examination and assurances of the absence of gastric disease relieved her to such an extent that she left her sick bed, began eating and rapidly regained her normal state of euphoria.

These two instances are unfortunately oases in the desert of many failures. In the diagnosis from the gastric findings, it is important to remember that we may have a variation from the normal findings to total absence of acid or great hyperacidity. The significance is found in the variation under the same conditions and the use of same meals.

We should not be discouraged in the treatment of this disease if we do not immediately effect a cure. Patients who seem very slightly affected may resist many methods of treatment, while those whose nutrition is involved and seem hopeless will show surprising results under treatment. The ideal method with these cases is to place them in a hospital with the use of cold baths, forced feeding with highly nutritious food, general tonics and rest in bed for some time; but manifestly this is impossible in the majority of cases. When patients are treated by office methods their confidence in the ability to take an increased amount of food must be established. The intragastric use of electricity does seem to have some actual effect upon the hypersensitiveness of the gastric nerves. Some allege the good results are only due to suggestion. This point is not worthy of debate, so long as we accomplish good results. Cold baths, shower baths frequently repeated are very efficient. In addition to these measures one should employ the well known plans used in the treatment of neurasthenia. The danger in patients whose symptoms seem to point to the stomach alone is to concentrate the efforts upon the assistance of digestion. The bodily state must be studied in its entirety if we wish to be successful.

LOCAL ANÆSTHESIA

Spinal Anæsthesia.—Dr. H. H. Roberts, in speaking on spinal anæsthesia, remarks in the *Scottish Medical and Surgical Journal* that the chief advantages are: No preparation of the patient is required prior to the operation, and immediately after it the patient may safely take food. In the case of accidents it may be useful for this reason. The shock caused by a general anæsthetic is greater than that following this method, and it is on this account that spinal anæsthesia is specially applicable for weak and elderly people. It is a method which will appeal to many patients who fear chloroform.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Discussions in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:—

LXIII.—How do you treat gonorrhœal epididymitis? (Closed June 15, 1907.)

LXIV.—How do you treat influenza? (Answers due not later than July 15, 1907.)

LXV.—How do you prevent contraction in the scars of burns? (Answers due not later than August 15, 1907.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisers will receive a prize of \$25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not required) that the answers be short; if practicable, no one answer to contain more than six hundred words.

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of \$25 for the best essay submitted in answer to question LXII has been awarded to Dr. George A. Graham, of Kansas City, Mo., whose article appeared on page 1179.

PRIZE QUESTION NO. LXII.

THE PHARMACOPŒIAL PREPARATIONS TO BE KEPT ON HAND BY GENERAL PRACTITIONERS.

(Concluded from page 1182.)

Dr. Maxwell S. Simpson, of Middle Valley, N. Y., observes:

A practical answer to the query is of necessity influenced by the status of the practitioner in question. If the practice is limited to city work, reliance will be given to orders upon the neighboring pharmacy, and the list will be short, even emergency remedies may be greatly reduced in number. If the work is rural and the pharmacy at a remote distance, as it often is, the other extreme is reached, the list is greatly increased and may be extensive. These conditions may be further influenced by location, by occupation of the clientele, by season of the year, and, if the physician who dispenses his own remedies endeavors to render his preparations pleasing alike to eye and palate, a matter to which too little attention may be given, this factor will further enlarge the list.

The answer then resolves itself into a selection from the pharmacopœia of those preparations (meaning, in a general way, drugs, chemicals, and their products) that are reliable, uniformly active, and are easily and conveniently handled by the practitioner, as against those less frequently of service or of purely pharmaceutical use. And the list should be large enough to meet the exigencies of an extensive practice from one end of the year to the other. One of the greatest drawbacks to a physician dispensing his own remedies is the probability of not having at hand the remedy which might better be used, and would be used if dependent upon

prescription, where the burden would be upon the pharmacist.

The list herewith presented is selected from the eighth decennial revision of the *United States Pharmacopœia*, and each of proved value by clinical experience. In brackets are given those preparations which anyone with a few simple pharmaceutical utensils and a slight degree of pharmaceutical skill can prepare extemporaneously from the others of the list. The asterisk indicates a selection which will be most valuable in the practice of the physician who relies almost exclusively upon written prescription for the bulk of his work.

Acacia, granulated (mucilago acaciæ; syrupus acaciæ).

*Acetphenetidum.

Acidum aceticum.

Acidum boricum, crystals, *impalpable powder.

Acidum citricum (syrupus acidi citrici).

*Acidum hydrochloricum.

*Acidum nitricum.

*Acidum oleicum (oleatum atropinæ; o. cocaïnæ; o. hydrargyri; o. quinina; o. veratrinæ; the freshly made preparations are best).

Acidum phosphoricum dilutum.

Acidum sulphuricum (a. s. aromaticum).

Acidum tartaricum.

Acidum tannicum (glyceritum acidi tannici).

Adeps lanæ.

*Æther.

*Alcohol.

Alumen (a. exsiccatum).

Ammonii benzoas.

Ammonii bromidum.

Ammonii carbonas (liquor a. acetatis).

Ammonii chloridum, granular salt, *compressed tablets.

Ammonii iodum.

*Antipyrina.

*Apimorphinæ hydrochloridum, hypodermatic tablets.

Aqua ammoniæ fortior (a. ammoniæ; *spiritus a. aromaticus; linimentum a.).

*Aqua hydrogenii dioxidi—Squibb's *Solution Materials* gives preparation.

*Argenti nitras.

*Argenti nitras fusus.

Arseni iodum, tablet triturates or coated tablets.

Arseni trioxidum, tablet triturates.

*Atropinæ sulphas, hypodermatic tablets.

Balsamum toltanum (tinctura toltana; syrupus toltanus).

*Bismuthi subgallas.

*Bismuthi subnitras, powder, compressed tablets.

*Calx chlorinata.

Camphora (aqua camphoræ; spiritus c.; linimentum c.; ceratum c.).

Cataplasma kaolini.

*Charta sinapis.

*Chloralum hydratum, crystals.

*Chloroformum (aqua chloroformi; emulsum c.; spiritus c.; linimentum c.).

Chrysarobinum (unguentum chrysarobini).

*Cocainæ hydrochloridum, crystals, hypodermatic tablets, ophthalmic discs.

*Codeina, pills or tablets.

*Collodium cantharidatum.

*Collodium flexile.

- Copaiba.
 Cresotum (aqua cresoti).
 Cresol (liquor cresolis compositus).
 Creta preparata (mistura cretae, pulvis cretae compositus).
 Digitalis, powdered (English leaves not more than one year old) (infusum d.).
 Elixir aromaticum (e. adjuvans).
 Emplastrum adhaesivum.
 Emplastrum belladonnae.
 Extractum male.
 Ferri et ammonii citras (vinum ferri).
 Ferri et quinae citras solubilis (vinum ferri amarum).
 Ferri et strychninae citras.
 Ferri hydrochloridum cum magnessi carbonato kept in two solutions.
 Ferri pyrophosphas solubilis.
 Fluidextractum aromaticum.
 *Fluidextractum belladonnae radices.
 Fluidextractum buchu.
 Fluidextractum capsici.
 Fluidextractum citrea (vinum citrea).
 *Fluidextractum ergotae.
 Fluidextractum gentianae.
 Fluidextractum glycyrrhizae.
 Fluidextractum hyoscyami.
 Fluidextractum ipecacuanhae (syrupus i.; vinum i.; tincturae i. et opii).
 *Fluidextractum nucis vomicae.
 Fluidextractum rhamni purshianae aromaticum.
 Fluidextractum rhei (syrupus r.; mistura rhei et sodae).
 Fluidextractum zingiberis (syrupus z.).
 *Glycerinum (g. amyli; g. phenolis).
 Glycyrrhizinum ammoniatum.
 *Hydrargyri chloridum mite, powder and tablets.
 Hydrargyri iodum flavum.
 Hydrargyri iodum rubrum.
 Hydrargyri oxidum flavum (unguentum h. o. f.).
 Hydrargyrum ammoniatum (unguentum h. a.).
 Hydrargyrum cum creta.
 Iodolum.
 *Iodum (tinctura iodi; liquor i. compositus; unguentum i.).
 Ipecacuanha, powder.
 Linimentum saponis (l. chloroformi).
 Liquor calcis.
 Liquor formaldehydi.
 Liquor plumbi subacetatis.
 *Liquor potassii arsenitis.
 Lithii citras (l. c. effervescens).
 Magnesii carbonas (liquor m. citratis).
 Magnesium oxidum ponderosum.
 Magnesii sulphas (m. c. effervescens).
 Mangani dioxidum praecipitatum, compressed tablets.
 *Menthol.
 *Morphinae sulphas, crystal, tablet triturates, hypodermatic tablets; (pulvis m. compositus).
 Naphthalinum.
 Oleum anisi (aqua a.; spiritus a.).
 Oleum aurantii corticis (spiritus a. compositus).
 Oleum caryophylli.
 Oleum cinnamomi (aqua c.; spiritus c.).
 Oleum gaultheriae (spiritus g.).
 Oleum limonis.
 Oleum menthae piperita (aqua m. p.; spiritus m. p.).
 Oleum olivae.
 Oleum rosae.
 Oleum sinapis volatile.
 Oleum theobroma (solidatum, compositum, etc.).
 t.; linimentum o. t.).
 *Oleum tigllii.
 *Oleum tritici (solidum, liquidum, etc.).
 *Pepsinum, scales and tablets.
 Petrolatum album.
 *Petrolatum liquidum.
 *Phenol (p. liquifacatum; glyceritum phenolis; unguentum p.).
 *Phenylis salicylas, crystals and compressed tablets.
 Pilulae asafetidae.
 *Pilulae catharticae compositae.
 *Pilulae catharticae vegetabiles.
 *Pilulae laxativae compositae.
 Plumbi acetas.
 Plumbi nitras.
 Potassii acetas.
 Potassii bicarbonas.
 *Potassii bromidum, granulated salt and compressed tablets.
 *Potassii chloras, granulated salt and compressed tablets.
 Potassii citras (p. c. effervescens).
 Potassii et sodii tartras (pulvis effervescens compositus).
 *Potassii iodidum.
 *Potassii permanganas.
 Pulvis aromaticus.
 *Pulvis glycyrrhizae compositus.
 Quinina.
 *Quininae sulphas, capsules and coated tablets.
 Rheum (pulvis rhei compositus; pilulae rhei compositus).
 Saccharum (syrupus).
 *Saccharum lactis.
 *Santoninum, tablet triturates.
 Sapo mollis.
 *Serum antidiphthericum. To be kept in stock, and less than one year old, unless provision can be made for prompt supply from a dealer.
 *Sodii bicarbonas, powder and compressed tablets.
 Sodii boras, powdered.
 Sodii bromidum.
 *Sodii chloridum.
 Sodii citras.
 Sodii phosphas (s. p. effervescens; s. p. exsiccatus).
 *Sodii salicylas, powder and compressed tablets.
 *Spiritus aetheris compositus.
 *Spiritus aetheris nitrosi.
 *Spiritus frumenti.
 *Spiritus vini gallici.
 *Strychninae nitras, hypodermatic tablets.
 *Strychninae sulphas, tablet triturates or coated tablets.
 *Sulphonethylmethanum.
 *Sulphonmethanum.
 Sulphur lotum.
 *Suppositoria glycerini.
 Syrupus ferri iodidi.
 Syrupus pruni virginianae.

Symplicis scilla
 Symplicis scilla compositus
 Terpini hydras.
 Talcum purificatum.
 Thymolis iodium.
 Tinctura aconiti.
 Tinctura cardamomi composita.
 Tinctura capsici.
 Tinctura cinchonæ composita.
 *Tinctura digitalis.
 *Tinctura ferri chloridi, more than a year old;
 (liquor f. et ammonii acetatis).
 Tinctura gambir composita.
 Tinctura gentianæ composita.
 Tinctura opii camphorata.
 *Tinctura opii deodorata.
 Tinctura rhei aromatica (syrupus r. a.).
 Vinum rubrum.
 Zinci oxidum (unguentum z. o.).
 *Zinci sulphas.

Dr. Abner C. Matthews, of Earlville, N. Y., states:

Hypodermic tablets of apomorphine hydrochloride 0.1 gr. each ought to be kept constantly on hand by every general practitioner of medicine. Other hypodermic tablets, which he ought never to be without, are the following: Potassium permanganate, $\frac{1}{4}$ gr.; strychnine nitrate, 1-30 gr.; codeine sulphate, $\frac{1}{4}$ gr.; atropine sulphate, 1-60 gr.; cocaine hydrochloride, $\frac{1}{4}$ gr.; hyoscyamine hydrobromide, 1-100 gr.; pilocarpine hydrochloride, $\frac{1}{8}$ gr.; physostigmine sulphate, 1-100 gr.; morphine sulphate, $\frac{1}{8}$ gr., uncombined, and morphine sulphate, $\frac{1}{4}$ gr., combined with atropine sulphate, 1-150 gr. Of course, these doses, as here set down, may be varied to meet the requirements of individual cases.

The tablets of codeine sulphate are included in this list because they come very nicely into use when the patient has an idiosyncrasy to morphine. Any of these hypodermic tablets may, of course, be given by the mouth, if objection is made to the needle, or if for any other reason its use is not deemed advisable by the physician having charge.

Two other very important drugs to have ready at hand are the spirit of nitroglycerin and the tincture of digitalis. There are five fluidextracts which ought always to be in readiness and which will be found to do most excellent service on many different occasions. They are as follows: The fluidextract of ergot, the fluidextract of cannabis indica, the fluidextract of grindelia, the fluidextract of veratrum viride, and the fluidextract of viburnum prunifolium.

In addition to cocaine hydrochloride, which has been already mentioned, the well equipped general practitioner will have chloroform, ether, and a tube of ethyl chloride.

There are two pharmacopœial preparations which by some might be considered as quite unimportant, and yet I venture to affirm that they ought to be constantly on hand; I refer to absorbent cotton and white castile soap. Personally, I have for the past fifteen years always been in possession of some rectal suppositories of the extract of opium each containing one grain, and I desire to say that during that fifteen years I have been

thankful many, many times that I was fortunate enough to have them.

There are, at least four oils which are surely entitled to a place in this paper; they are the oil of cloves, the oil of olive, oil of turpentine, and the oil of erigeron.

Syncope is common and may be fatal. The general practitioner should be in readiness at all times to combat this condition by having constantly on hand the following: Some form of alcoholic stimulant, preferably brandy; also the aromatic spirit of ammonia and pearls of amyl nitrite each containing three minims.

The following list of pharmacopœial preparations come extremely handy at times: Alcohol, tincture of iodine, chloralformamide, chloral hydrate, Tully's powder, bromoform, acetphenetidin, syrup of ipecac and tincture of benzoin.

The general practitioner should be in readiness to quickly prepare antiseptic solutions. To this end, he should have on hand carbolic acid, the bichloride of mercury, and the solution of hydrogen dioxide.

A few good astringents ought not to be forgotten. Monsel's solution, alum, and gallic and tannic acids meet that requirement very well indeed. It may not be inappropriate to remark, in passing, that the field of usefulness of tannic and gallic acids is not always limited to their astringent action.

We all have our hobbies. Mine is antitoxine. It should be on hand constantly and occasionally changed. With a case of diphtheria to attend to, it is surely a poor time to go around ringing telephone bells and consulting railroad time tables.

In conclusion, ammonia, magnesium sulphate, the tincture of aconite, dialyzed iron, citric acid, and dilute acetic acid should never be omitted from the armamentarium of the general practitioner.

The hypodermic tablets mentioned can be kept in a neat pocket case made for the purpose, and it is surprising how easily the other preparations referred to may be arranged—a part in the physician's regular case and the remainder in his emergency case.

Dr. H. C. Macatee, of Washington, D. C., says:

The question may be answered from the point of view of two sets of general practitioners: The city or town practitioner with easy access to good drug stores, and the country practitioner, who must be his own druggist and carry his materia medica in his saddle bags. I shall answer from the point of view of the urban practitioner.

The pharmacopœial preparations of first importance to the doctor are those which should always be found in his hypodermic case, and the hypodermic case should always be found in his pocket. According to individual preference, a selection should be made from the following list of drugs: Strychnine sulphate, morphine sulphate, atropine sulphate, nitroglycerin, apomorphine hydrochloride, hyoscyamine hydrobromide, to which may be advantageously added digitaline, codeine sulphate, heroin hydrochloride, and ergotine. It must be added that these drugs for hypodermic use should be renewed from time to time to insure freshness and potency; especially is this true of apomorphine.

Other preparations may be listed under two heads:

First Class: Those required for medical and surgical emergencies, and to treat the patient over the morning, when taken ill at night.

Second Class: Those required for convenience in office practice.

First Class—

Anesthetics, ether, chloroform—for convulsive seizures, obstetrical and surgical emergencies.

Analgetics, pulvis ipecacuanhæ et opii, tr. opii camphorata, salol and acetphenetidol—for febrile and painful affections.

Antidotes, alcohol for carbolic acid poisoning and burns, ferric hydroxide with magnesia for arsenical poisoning.

Antispasmodics, amyl nitrite (in pearls) spt. ætheris compositus, for angina pectoris and painful abdominal crises.

Emetics, syrupus ipecacuanhæ, alum—for spasmodic croup, acute indigestion, and poisoning.

Hypnotics, chloral hydrate in simple elixir, sodium or potassium bromide in simple elixir—for acute nervous or hysterical attacks, mania a potu, or insomnia, etc.

Purgatives, calomel, compound laxative pill, oleum tigllii—the latter for prompt hydragogue catharsis in apoplexy or uræmia.

Stimulants, whiskey, spt. ammonii aromatici, tablets or solution of sodium chloride for making normal salt solution for hypodermoclysis.

Hæmostatic, fluidext. of ergot—for metrorrhagia, parturient or otherwise.

Second Class—

Anæsthetics (local), cocaine hydrochloride for minor surgical emergencies, adrenalin chloride (1-5000) with 2 per cent. cocaine for examinations of eyes, nose, and throat.

Antiseptics, tablets of corrosive sublimate, phenol, solution of boric acid, hydrogen dioxide, alcohol.

Astringents, 2 per cent. and 5 per cent. solutions of silver nitrate, for minor catarrhal conditions of the nose and throat.

Lubricant, petrolatum.

Protectives, collodium, adhesive plaster.

Reagents, nitric acid and Fehling's solution for immediate recognition of albuminuria or glycosuria.

With this comparatively brief list of pharmacopœial preparations, the general practitioner may successfully meet any of the exigencies which may befall him, when access to the apothecary is not practicable. The practice of keeping a large number of drugs in the office is expensive to the physician, if due regard is had to the freshness of the preparations, and expensive to the patient's interests, if such regard is not had; moreover, the practice of habitually dispensing medicines is not to be commended, for reasons not connected with this discussion. The rule governing the matter should be laid down largely by local peculiarities with respect to access to the pharmacy.

In recommending this list, it has been kept in mind that many remedies, such as mustard, lime water, castor oil, epsom salts, etc., can be found in any well regulated household; also that the hypodermic case will often supply every need.

Dr. Lucien Lofton, of Belfield Emporia, Va., writes:

Liquor ferri subsulphatis.

Oleum ricini.

Spiritus ætheris comp.

Spiritus frumenti.

Aqua destillata.

Aqua hydrogenii dioxidi.

Acidum hydrochloricum.

Acidum sulphuricum aromaticum.

Acidum boricum.

Potassii bromidum.

Magnesium sulphas.

Zinci sulphas.

Hydrargyri chloridum corrosivum.

Hydrargyri chloridum mite.

Bismuthi subnitras.

Ether.

Chloroformum.

Alcohol.

Iodoformum.

Apomorphinæ hydrochloridum.

Atropinæ sulphas.

Codeinæ sulphas.

Carbo ligni.

Pilocarpinæ hydrochloridum.

Strychninæ sulphas.

Morphinæ sulphas.

Argenti nitras.

Phenol.

Spiritus ammoniæ aromat.

Acidum tannicum.

Tinctura ferri chloridi.

Magnesium oxidum.

Argenti nitras.

Amylis nitris.

Dr. Lucien Lofton, of Belfield Emporia, Va., writes:

The question "what Pharmacopœial preparations should be kept on hand by the general practitioner" will apply to all physicians doing general medical work at every point of the compass. No man is so well armed as the one forewarned, consequently, in a restricted sense, I would suggest, first have a place for everything and everything in its place.

The list of medicines I carry, and therefore suggest, are:

Opium, or one of its derivatives.

Strychnine.

Aromatic spirit of ammonia.

Sweet spirit of nitre.

Hoffmann's anodyne.

Podophyllum.

Tr. of belladonna.

Tr. of digitalis (fresh).

Tr. of iron chloride.

Potassium permanganate tablets.

Veratrum viride.

Fowler's solution of arsenic.

Syrup of ipecac.

Croton oil.

Carbolic, hydrochloric, nitric, and salicylic acids.

Fluidextract of viburnum opulus.

Fluidextract of ergot.

Fluidextract of cascara sagrada.

Syrup of rhubarb.

Lithium citrate.
 Citrate of caffeine.
 Castor oil.
 Calomel.
 Tr. of aconite.
 Ess. of pepsin.
 Tr. of iodine.
 Spirit of chloroform.
 Hydrogen dioxide.
 Asafetida.
 Quinine (any good salt).
 Blue ointment.
 Adrenalin.
 Ethyl alcohol.
 Petrolatum.
 A well selected case of hypodermic alkaloids.

Therapeutical Notes.

Experimental Reproduction of Trachoma in the Monkey.—Nicolle and Cuenod (*Le Bulletin médical*, May 15, 1907), in a recent communication to the Académie des Sciences, demonstrated the inoculability of trachoma, or granular conjunctivitis. They made their experiments upon two monkeys of the species *Macacus sinicus*, a species of monkey which shows a special susceptibility to many diseases usually regarded as special to man, such as soft chancre, syphilitic chancre, and mild leprosy. In both cases inoculation with material taken from granular lids gave positive results. The microscopical examination of a granulation taken on the thirty-sixth day showed absolute similarity between the experimental trachoma of the monkey and the spontaneous (?) trachoma of man.

The Seeds of Jute.—Professor Kobert has recently made a study of seeds of the different varieties of corchorus or jute (*Apotheker Zeitung*, No. 19, 1907). The seeds of one variety, the *Corchorus fascicularis*, are quite harmless, and having a sweetish taste, are eaten by the natives. The *Corchorus olitarius* contains a purgative principle. The seeds of the *Corchorus capsularis*, *Corchorus bengalensis*, *Corchorus acutangulus*, *Corchorus argutus*, and the *Corchorus trilocularis*, contain a kind of fat, and the last three contain also a fluorescent, poisonous glucoside, the corchorin of Tsuno. Corchorin is an intensely bitter substance, easily soluble in water and alcohol, and insoluble in ether, chloroform, and benzol. It is not precipitated by sugar of lead, but is precipitated by ammoniated lead acetate. With concentrated sulphuric acid it gives a blue green color. It may be precipitated from concentrated aqueous solution with ammonium sulphate. Corchorin is highly poisonous, and belongs to the digitalin group.

Specimen Showing Cure of Aortic Aneurysm by Potassium Iodide.—Lamy and Cléret presented a specimen to the Société médicale des hôpitaux (*Le Bulletin médical*, May 11, 1907) of a voluminous aneurysm of the ascending aorta, which had been almost completely cured by concentric obliteration of the sac. The patient, a man of sixty-five years, had contracted syphilis at forty years of age. During the last five years of his life he had suffered with aortic aneurysm, with very marked prominence

of the chest wall in the left sternomammary region with strong pulsation. There were no signs of nervous or of venous compression, but the trachea was flattened on the right side a little above the bifurcation. He had noisy breathing, a hoarse cough, and attacks of suffocation in the dorsal decubitus. During the last five years of his life he had lived almost continuously in the hospital. His treatment had been simply potassium iodide in small doses (1 to 1.50 grammes, or 15 to 22 grains) at intervals. His nourishment was the ordinary diet of the hospital. No special treatment was given to produce coagulation. This case shows with what reserve we should appreciate the reports of the value of special treatments. The patient was ultimately carried off by a grippal bronchopneumonia.

Granular Vernal Conjunctivitis.—Anenfeld, in a contribution to the annual meeting of the Société française d'ophtalmologie (*Le Bulletin médical*, May 11, 1907), reviewed the literature of spring catarrh, which was first described by Beer in 1815. It is observed most frequently in females, between two and twenty years of age. It is especially frequent in Constantinople, and rarely occurs in Paris. Its title is derived from the fact that its appearance is always in the spring, or in the summer, and lasts from four to six years, then passes away gradually. Histologically, it is composed of flat proliferations of the upper eyelid (almost never of the lower), and does not invade the conjunctival fornix nor the semilunar fold. It may extend beyond the superior border of the lid. This bosselated, opalin, gelatiniform thickening may reach the level of the cornea. Its appearance is characteristic, in color gray or reddish, sometimes brownish, or injected. In light cases an injection of vessels in the form of a coarse network is seen, combined with ciliary injection. It is sometimes very difficult to distinguish this spring catarrh from trachoma, certain syphilitic changes, or from atypical forms of tuberculosis. The diagnosis of the affection is based upon its temporary character, its peculiar consistency, and the white color of the secretion, together with eosinophilia. No microorganism has been discovered up to the present time, and there is no necessity for assuming the existence of an infectious agent. The cause has been thought to reside in some inflammations of the annexa of the eye, or to associated skin diseases (psoriasis guttata, lichen, prurigo, chronic eczema, eczema solare), and also to internal infections and general diseases. There are present some associated adenitis and blood changes (leucocytosis and diminished hæmoglobin), which may play an important part in the ætiology of the disease. Thus far, treatment has been found ineffectual to shorten the disease, and the therapeutics is therefore only symptomatic. A change of climate is beneficial, especially to a winter one. The exclusion of light from the eyes is very important. Tonics, such as arsenic, iron, glycerophosphates, are useful as re-constituents. The application of radium has seemed to hasten the cure. When the proliferations are too voluminous they may require surgical treatment. Local remedies are less valuable than keeping the patient shielded from bright light, or making him wear a bandage, or constantly use smoked glasses. Hygienic measures are very useful.

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THE "PRENUPTIAL SANITARY GUARANTEE."

At a meeting of the Society of Sanitary and Moral Prophylaxis held on April 11th several important papers were read, all of which, together with a summary of the discussion, we publish in this issue of the *Journal*. Of special value, in our opinion, is Dr. Edward L. Keyes's paper entitled *The Prenuptial Sanitary Guarantee*. Dr. Keyes is one of the closest and most convincing reasoners that we have in the profession at the present time, and what he writes demonstrates the utter impracticability of all proposed schemes for insuring either party to a matrimonial contract against the danger of contracting venereal disease from the other party. Moreover, it ought to go far toward reclaiming those impulsive individuals who fancy that all things desirable for the betterment of society are to be attained by legislation.

That would be a shocking state of things in which a man had to obtain a medical certificate of freedom from venereal disease before he could get a marriage license; still more shocking that in which a woman was under the same necessity, and, as Dr. Keyes says, it would not be fair to enforce the requirement in the case of men and not in that of women. As is well known, men who have had syphilis are not necessarily ineligible to matrimony, and we think it is not very uncommon for such men to ask for medical advice as to whether or not they may safely marry; possibly women do the same

thing, especially if thought be given to the danger of an instance. Virtuous women do, however, sometimes submit of their own accord to a gynecological examination to ascertain whether or not they are innocent of becoming inmates of a hospital of incurables, or the necessity of bearing children without sufficient means to secure its welfare. In such a case a woman; it springs from a conscientious desire not to saddle her proposed husband with an unsatisfactory wife. It may even be supposed that a female victim of "syphilis insontium," knowing her innocence, would invite medical examination for a like honorable purpose, and that without any hesitation.

But coercion, we believe, is not to be thought of. The compulsory clean bill of health as a preliminary to matrimony seems to us preposterous. The honor and the honesty of men and women must continue to be relied upon, and it will be an evil day for humanity when to any great extent they prove untrustworthy.

PROFESSIONAL SECRECY.

It seems to us that some unnecessary sentimentalism has been allowed to gather about the question of the physician's duty with regard to preserving his patients' secrets inviolate. The matter was rather fully treated of at the meeting of the Society of Sanitary and Moral Prophylaxis which we have already mentioned, notably, from the legal point of view, by Mr. Purrington, whose years of service as counsel for the Medical Society of the County of New York have rendered him particularly capable of appreciating medical feeling on the subject.

It seems that in the State of New York and in many of the other States there is in force a rule of evidence which forbids "licensed and registered physicians, professional or registered nurses, to testify in legal proceedings, without the patient's consent, to any knowledge acquired in attending the patient in a professional capacity and necessary to enable them to act in that capacity." The specification appears to us nonsensical, for who is to determine what information was "necessary to enable them to act in that capacity"? Moreover, why should the prohibition apply only to "registered" physicians and nurses, leaving others unrestrained? And it is not in "legal proceedings" alone that the unwarranted disclosure of patients' secrets is likely to do them an injury.

Every sensible practitioner of medicine refrains from divulging his patients' private affairs unnecessarily, whether his knowledge of them was or was not essential to his conduct of a case. To gossip about them is highly reprehensible, but no physician would hesitate to say to a consultant, in a case

of cerebral endarteritis, "This man gives a straight history of syphilis," or, in the case of a woman with septicæmia, "This infection is undoubtedly gonorrhœal." Such pieces of information are necessary, and the attending physician is perfectly sure that they will be kept inviolate by the consultant.

For his own protection, as in cases of criminal abortion, the physician is sometimes forced to acquaint a professional colleague or the coroner with such facts as he may know or suspect, and we do not see how he can do justice to the child if he fails to specify the names of both parents in cases of illegitimate birth. In dealing with the laity it is often necessary to prevaricate. When the late Dr. Fordyce Barker was asked "What is the matter with Miss So-and-So?" he invariably replied "She has a bad cold." Even on the witness stand a physician may usually parry a cruel and senseless question and yet not "perjure himself like a gentleman." One can often truly say "I don't know," for absolute certainty as to individual ailments is exceptional. In these matters, we think, physicians will always be governed by their consciences rather than by statute or by any prevailing sentiment.

THE COMBINING PROPERTIES OF THE OPSONINS OF AN IMMUNE SERUM.

The behavior of opsonins to heat was one of the earliest sources of difference of opinion concerning their characteristics. One set of observers found that they were thermolabile, and another set found that they were thermostable. The fact of the matter is that there are two kinds of opsonin; one, found in normal serum, which is thermolabile; and the other, found in immune serum, which is thermostable. Some authors believe these substances to be identical, and others consider them to be different in their nature. In order to compare the characteristics of these two opsonic bodies, Muir and Martin (*Proceedings of the Royal Society*, lxxix, B 531) have tested the specificity of their combining affinities. In other words, they have studied the absorptive power of one bacterium for the opsonin of other bacteria. Two specimens of antistaphylococcic serum were used, and the opsonic power of these sera were compared with the opsonic power of normal serum when tested with *Staphylococcus aureus*, *Bacillus coli*, *Bacillus dysenteriae*, *Spirillum cholerae*, *Bacillus typhosus*, and *Staphylococcus albus*. As a result of their studies they conclude, first, that the thermolabile opsonin of a normal serum and the thermostable opsonin of an immune serum are two distinct classes of substances. In addition to differing decidedly as regards their resistance to heat, they differ in their combining relationships. Secondly, they conclude

that the thermostable opsonin of the antiserum investigated is a true antistubstance and possesses the comparatively specific characters of antistubstances in general. It is left undetermined whether it has the constitution of an agglutinin or of an immune body, though certain facts are in favor of the former. They further conclude that emulsions of other organisms than the organism used in immunization (*Staphylococcus aureus*) do not absorb the immune opsonin; but, on the other hand, they do absorb large amounts of the normal complement-like opsonin. Moreover, powerful complement absorbers—red blood corpuscles, bacteria treated with an immune body, and serum precipitate—have no effect on the thermostable immune opsonin, whereas they remove almost completely the thermolabile opsonin of the normal and immune serum alike.

THERAPEUTIC LUMBAR PUNCTURE IN TUBERCULOUS MENINGITIS.

Probably there is no other form of tuberculous manifestation which is so justly dreaded as that which attacks the cerebral meninges. Only a few cases of recovery are on record. Jacobi has met with two cases; Freyhan and Leube have each reported one case; Whitcombe and Brown had a case of recovery; and recently another case has been placed on record by Hougardy (*Annales de la Société médico-chirurgicale de Liège*).

The patient whom Hougardy presented was a boy, eleven years of age, who about a year previous began to exhibit the usual prodromes of leftmeningitis—headache, capricious appetite, irregular action of the bowels, irritable temper, and a variable disposition, followed by an attack of convulsions, especially of the right half of the body, terminating in coma. For several months he had had a cough and had expectorated blood, but no bacteriological examination of the sputum had been made. The hæmoptysis had ceased after a prolonged visit to the country. When the boy was brought into the hospital, on the second day of the convulsions, it was observed that they had become bilateral, but were more marked on the left than on the right side. There was cutaneous hyperæsthesia, and the meningeal sign (*raie méningitique*) was clearly defined. Pressure upon the eyes provoked cries of pain, the neck was very rigid, and the belly scaphoid. The eyes were fixed, the pupils unequal and insensible to light. The respiration was stertorous, the pulse small and very rapid, and the temperature 105.4° F. There was no albuminuria, but Ehrlich's reaction was shown. The diagnosis was confirmed by lumbar puncture, which showed not only a super-tension and lymphocytosis in the cerebrospinal fluid, but also the tubercle bacillus.

The only treatment consisted in nutritive formula, with a small hypodermic injection of morphine at night, to relieve restlessness, and lumbar puncture repeated every two or three days. The symptoms slowly yielded and the temperature fell by lysis for nearly a week and then was subnormal for two days. At the end of three weeks the child recognized its mother and began to talk intelligibly. Another lumbar puncture, a few days later, still revealed an excess of lymphocytes, but showed no tubercle bacilli. The child's condition continued to improve in a most satisfactory manner, and when presented he had been entirely free from morbid manifestations for nine months. His intelligence was intact and his motor functions and special senses were normal.

The clinical history of this case has been given in some detail in order to show the gravity of the child's condition, and especially to emphasize the value of lumbar puncture, not only from the diagnostic standpoint, but also as the most efficient therapeutic resource at our command, in this most serious disease of childhood. It cannot be merely a coincidence that Freyhan's patient also was subjected to lumbar paracentesis, and that the diagnosis was established by the detection of tubercle bacilli in the cerebrospinal fluid. Further experience with this procedure, it is hoped, may lead to a revision of the present unfavorable prognosis by systematic writers and clinicians.

THE BLACKWELL'S ISLAND PATHOLOGICAL INSTITUTE.

The profession will receive with great satisfaction the announcement that Mrs. Russell Sage has given the sum of \$300,000 as the foundation of a fund of which the income is to be devoted to the maintenance of an institute of pathology in connection with the City (Charity) Hospital on Blackwell's Island and the other charitable institutions on the island. Those institutions furnish an immense field for pathological research, and it is now reasonably sure that it will be cultivated in a manner commensurate with its importance. It is pointed out that the island service is particularly rich in morbid conditions incident to old age.

It is especially gratifying to learn that the work under the foundation is to be supervised by a board made up of such men as Dr. Edward G. Janeway, Dr. Theodore C. Janeway, Dr. D. Bryson Delavan, Dr. Simon Flexner, and Professor Graham Lusk. The profession has the utmost confidence in all these men, and they are all known to be men of action. Little by little the organized agencies for medical research in New York are growing in number and in adaptation to their purposes. We may be sure

that the new scheme of pathology will be of the least important of them.

THE AMENDMENT NEW YORK LAW REGARDING SUBSTITUTION.

Elsewhere in this issue we print the full text of the act to amend section 401 of the penal code recently passed by the legislature and approved by the governor. It will be seen that it deals somewhat more stringently than the old law with substitution in filling prescriptions and with certain other matters connected with the retailing of drugs, medicines, and food preparations, though it wisely leaves the apothecary at liberty to advise a customer as to the comparative merits of various products not called for on a written prescription, but asked for by the purchaser on his own motion. The amendments are said to have met with a good deal of opposition, and much credit is due those who have secured their final enactment. We do not see how any fair and reasonable person can object to their provisions.

A NEW MENACE TO THE NERVOUS.

We are entirely in sympathy with those men and women of New York who have endeavored to secure the suppression of unnecessary noises, for we believe that assaults on the organ of hearing are distinctly injurious to the sick and actually provocative of nervous derangement in persons predisposed to it. But we have an idea that it is not through the sense of hearing alone that such injury may be wrought; shocking sights, too, may provoke morbid manifestations in persons of a nervous temperament. We protest therefore against the new iron poles which some electric lighting company has been permitted to set up in the middle of Broadway in the Morningside Heights district. They are lofty but of most inartistic slimness, of the same diameter throughout, and each of them is planted in a hog'shead filled with broken stone, the hog'sheads resting on the surface of the ground. The sight of them is enough to drive some persons crazy, and there are many sensitive young men and women in the neighborhood, students of Columbia University and Barnard College.

Since the foregoing was written the hideous structures in question have been removed.

THE SEQUELÆ OF INFANTILE CONVULSIONS.

It seems that the convulsions of infancy are not sufficient unto themselves; at least they appear to be indications of further trouble to come. Such a conclusion is reached by Kiemich and Birk in a recent article (*Childs Arch für Kinderheilkunde*, 1907,

Monatsschrift, Wechenschrift, May 13th). They find that almost all sucklings who have convulsions show either physical or mental weakness at a more advanced age, and that the number and severity of the convulsions bear no relation to the degree of corporeal or intellectual feebleness. The convulsions are not held to be the cause of this enfeeblement, but simply an advance indication of its manifestation. A malign heredity is said to be the cause of both. It would be interesting to know if in a large family of children, some subject to convulsions and others altogether free from them, the ulterior impairment of bodily or mental vigor was observed in all of them. If it was not, the theory of heredity would seem to be somewhat invalidated.

Obituary.

WILLARD PARKER, M. D.,
OF NEW YORK.

Dr. Parker died on Monday of this week, after an illness of only a few weeks' duration. Up to the time of his last illness he had impressed his friends as possessing rather more than the amount of vigor commonly observed in a man of his age. He was a son of the illustrious surgeon of the same name. He was a graduate of the College of Physicians and Surgeons, of the class of 1870. He did a general practice, largely among families that had known him from his youth. Dr. Parker was of a singularly frank and cordial nature, one that won for him the love of those who were at all intimate with him. He was remarkable for the great number of eminent men of various callings with whom he was acquainted.

News Items.

Charitable Bequest.—By the will of Bridget Markham the Little Sisters of the Poor, Philadelphia, receive \$300.

Scientific Society Meetings in Philadelphia for the Week Ending July 6, 1907.—*Monday, July 1st*, West Philadelphia Medical Association.

The Medical Society of the County of Chemung, N. Y.—At the semiannual meeting of this society, held at Elmira, on Tuesday, June 18th, the programme included the following papers: Flat Foot Deformities, by Dr. A. W. Booth; Fracture of the Hip in the Aged, by Dr. C. G. R. Jennings; Stricture of the Urethra, by Dr. A. J. Westlake.

Personals.—Dr. Harmon Smith has been appointed surgeon to the Throat Department of the Manhattan Eye, Ear, and Throat Hospital.

Dr. Andrew H. Smith, of New York, has retired from practice and removed his residence to Geneva, Ontario County, N. Y.

The Rochester, N. Y., Blackwell Medical Society.—The following officers have been elected by this society for the ensuing year: President, Dr. M. Louise Hurrell; vice-president, Dr. M. May Allen; secretary, Dr. Harriet M. Turner; treasurer, Dr. Sarah H. Perry; councilors, Dr. Sarah R. Adamson Dolley and Dr. Cornelia White Thomas. Dr. Evelyn Baldwin was the retiring president.

Philadelphia Personals.—A portrait of the late Dr. John H. Packard is to be painted and hung in the Pennsylvania Hospital. The managers, the visiting staff, and the ex-residents of the hospital are to defray the expense of the memorial.

Dr. Mary A. Laughlin, of Hagerstown, Md.; Dr. J. Frank Raine, of Sykesville, Pa.; Dr. J. M. Talbot, of Valdosta, Ga.; and Dr. J. R. Durham, of Warren, Pa., are registered

at the Philadelphia Polyclinic and College for Graduates in Medicine.

The Henry Phipps Institute for the Study, Prevention, and Treatment of Tuberculosis Training School for Nurses held commencement exercises on the evening of Thursday, June 20th. Dr. Charles Hatfield and Dr. Joseph Walsh delivered addresses. Miss Anna L. Morris, Miss Margaret Flynn, Miss Anna Murphy, Miss Anna Herman, Miss Kathryn McDevitt, and Mrs. Margaret Cole received the diploma of the school.

The Bureau of Vital Statistics of the Department of Health of the State of Pennsylvania has issued its report for the year 1906. During the year there were 10,632 deaths from tuberculosis, 4,039 from typhoid fever, 2,484 from diphtheria, 1,683 from whooping cough, 1,583 from measles, 525 from scarlet fever, and 85 from malarial fever. During the hot months of the year there were 1,901 deaths from diarrhoea and enteritis in children under two years of age.

The Richmond, Va., Academy of Medicine and Surgery.—The programme for a meeting of this academy, held on Tuesday evening, June 25th, included the following titles: The Comparative Prevalence of Tuberculosis in Virginia and Suggestions for Reducing the Same, by Dr. J. E. Harris, of Ironville, Va.; What Can be Done for the Tuberculous Poor in the City of Richmond? by Dr. William H. Parker; discussion lead by Dr. E. C. Levy. Plans for a permanent home for the academy were also to be considered at this meeting.

The Vermont School of Instruction for Health Officers.—The annual session of this school was opened at Burlington, on June 17th, with an attendance of about 200. Addresses were made by the Governor, Fletcher D. Proctor, and others. The programme for the four days' session included papers and discussions on sanitation and the prevention of diseases, by Dr. Thomas Darlington, of New York; Professor C. E. Winslow, Dr. E. O. Otis, of Boston; Dr. C. L. Wilbur, of Washington, D. C.; and Dr. Frederick L. Hills, of Rutland, Mass.

Changes at the Yale University Medical Department.—Dr. Ross Granville Harrison, associate professor of anatomy at Johns Hopkins University, has been elected Bronson professor of comparative anatomy. He will hold seats both in the academic and scientific faculties. He succeeds Professor Sidney I. Smith, retired. Dr. Joseph Marshall Flint, former editor of the *Journal of Anatomy*, has been elected professor of surgery. He has just returned from two years of study in Europe, and is at present professor of anatomy in the University of California. Professor Flint succeeds Professor William H. Carmalt, retired.

Philadelphia Pædiatric Society.—At the regular monthly meeting of the Philadelphia Pædiatric Society, held on June 11th, Dr. J. Claxton Gittings read a paper on subcutaneous emphysema following exploratory puncture of the chest. Dr. R. O. Clock reported two cases of tetanus neonatorum. Dr. D. J. Milton Miller read a paper on pulmonary gangrene in young children. Dr. Alfred Hand exhibited a child with Addison's disease and a girl, aged four, with chronic marasmus. Dr. Arthur Newlin showed a case of torticollis. Dr. J. Douglas Blackwood demonstrated specimens of the spirillum of Vincent's angina and of the spirillum of noma.

Commencement Exercises of the University of Pennsylvania.—The annual commencement exercises of the various departments of the University of Pennsylvania were held in Philadelphia, on Wednesday, June 19th. The annual oration was delivered by John A. Johnson, Governor of Minnesota. The honorary degree of Doctor of Medicine was conferred upon Dr. Leonard Pearson, the dean of the Department of Veterinary Medicine of the university, and the honorary degree of Master of Science was conferred upon Dr. Hideyo Noguchi, of Japan. The degree (in course) of Doctor of Medicine was conferred upon a large number of candidates, as also were the degrees of Doctor of Dental Surgery and of Doctor of Veterinary Medicine.

The Health of Pittsburgh.—During the week ending June 15th the following cases of transmissible diseases were reported to the Bureau of Health of Pittsburgh: Chickenpox, 11 cases, no deaths; typhoid fever, 130 cases, 11 deaths; scarlet fever, 8 cases, 1 death; diphtheria, 4 cases, 2 deaths; measles, 20 cases, 4 deaths; whooping cough, 21 cases, 1 death; tuberculosis, 12 cases, 7 deaths. The total deaths

from all causes reported 174. It is interesting to note that the death rate of all communicable diseases is only 1.04 per 1,000 population. The health officer, Dr. J. L. Taylor, has been successful in alerting the people to lead the drinking water to the large number of cases of typhoid fever.

The Associated Physicians of Long Island.—The programme arranged for the meeting of the Associated Physicians of Long Island, held at Patchogue, on Saturday, June 23, was presided over by Dr. George McNaughton and Dr. Robert L. Dickinson, of Brooklyn, to be discussed by Dr. Charles Jewett, Dr. John O. Polak, Dr. L. Grant Baldwin, Dr. Clarence R. Hyde, and others. The officers of the association are: President, Dr. Arthur H. Terry, Patchogue; first vice-president, Dr. Frank Overton, Patchogue; second vice-president, Dr. H. Beeckman Delatour, Brooklyn; secretary, Dr. James Cole Hancock, Brooklyn; treasurer, Dr. Charles B. Bacon, Brooklyn; directors, Dr. Arthur H. Terry, Dr. Elias H. Bartley, Dr. Frank Overton, Dr. James Cole Hancock, Dr. Charles B. Bacon.

The Unsanitary Condition of Factories for the Production of Food Stuffs.—A news item in the *New Orleans Times-Democrat* for June 17th, describing a tour of inspection made by the Health Officer of New Orleans among the ice cream manufacturing plants of that city, leads us to point out this typical field for the exposure of the functions of the health officers of all large cities, and probably of smaller ones, also. There are many firms engaged in manufacturing food stuffs, particularly food stuffs of the variety known as refreshments, which would not bear careful inspection by a modern health officer with proper ideas of cleanliness. Unfortunately the class of articles concerned is sold for a small price to people of limited means, who have no idea of the process of manufacture, their sole aim being to please the psychosensory centres of taste in their cerebrum.

The Late Dr. William J. Herdman.—The following resolutions were adopted by the *American Neurology and Mental Diseases* of the American Medical Association, at the recent meeting in Atlantic City.

Whereas, Death has removed from our midst Dr. William J. Herdman; and

Whereas, Dr. Herdman was for many years a teacher of nervous and mental diseases and an active worker in this section of the American Medical Association, and served a term as secretary and chairman; and

Whereas, Dr. Herdman always brought to his work great thoroughness, painstaking care, and a trained intelligence; therefore be it

Resolved, That in the death of Dr. Herdman this section has lost a valued contributor, the American Medical Association an unusually efficient member, and his colleagues a trusted friend. C. C. Hersman, Hugh T. Patrick, committee.

The Philadelphia County Medical Society.—At the semi-monthly meeting of the Philadelphia County Medical Society, held on June 26th, Mr. M. I. Wilbert exhibited a series of official preparations. Dr. S. Solis-Cohen read a paper on the lack of necessity for proprietary mixtures. Dr. Horatio C. Wood, Jr., read a paper on official *versus* proprietary preparations. The discussion was opened by Mr. Joseph W. England and Mr. Frank E. Morgan.

The semi-monthly meeting of this society, held on the evening of June 12th, was devoted to a symposium on opsonin treatment. Dr. Benjamin A. Thomas read a paper on the variability and unreliability in the determination of opsonic indices. Dr. Jay F. Schamberg made a preliminary report on the use of bacterial injections in diseases of the skin. Dr. D. H. Bergey read a paper on the nature of opsonins and the limitation of the use of bacterial injections. Dr. Nathaniel H. Gildersleeve read a paper on the technique of the determination of the opsonic index, with remarks upon the value of the same. Dr. A. A. Uhle made a preliminary report on the results of opsonic treatment in various clinical conditions.

The Sanitarium of Our Lady of Victory, Kingston, N. Y.—The first graduating exercises of the Benedictine Training School for Nurses, of this sanitarium, were held on June 12th. The graduating class was composed of four young women: Mary A. Hamburger, of Kingston; Maud D. Winchell, of Kingston; Ruth A. Riesenbergh, of Bloomington, and Josephine B. Hudler, of Mt. Pleasant. The

commencement exercises were held by Rev. Stephen J. O'Connell, pastor of the Catholic Church, Kingston, N. Y. The exercises were held in the gymnasium of the sanitarium, and were attended by a large number of guests. The exercises were held in the evening, and were a most successful one. The graduates were presented with diplomas by the Rev. Father O'Connell. The exercises were held in the evening, and were a most successful one. The graduates were presented with diplomas by the Rev. Father O'Connell.

W. Mahben, Dr. Harvey C. Keator, Dr. C. I. Keator, attending surgeon, eye, ear, nose, and throat, Dr. C. I. Keator, attending bacteriologist, Dr. Charles W. Crispell, attending physician.

Infectious Diseases in New York:

For the week ending June 22, 1907, as compared with the corresponding week of last year, 1906, and 1905, the following deaths reported for the two weeks ending June 22, 1907:

	June 22, 1907		June 15, 1906	
	Deaths	Rate	Deaths	Rate
Scarlet fever	1	0.01	1	0.01
Diphtheria	1	0.01	1	0.01
Whooping cough	1	0.01	1	0.01
Measles	1	0.01	1	0.01
Smallpox	1	0.01	1	0.01
Typhoid fever	1	0.01	1	0.01
Cholera	1	0.01	1	0.01
Other	1	0.01	1	0.01
Total	7	0.07	7	0.07

The Mortality of Baltimore.—The report of the Health Department for the week ending June 22, 1907, showed a total of 173 deaths, as compared with 166 for the corresponding week of last year; 220 in 1905; and 154 in 1904. The annual death rate in a thousand of population was: Whole, 15.46; white, 14.01; colored, 23.11. The principal causes of death were: Typhoid fever, 1; scarlet fever, 1; influenza (la grippe), 2; consumption, 24; cancer, 6; apoplexy, 10; organic heart disease, 7; bronchitis, 4; pneumonia, 10; diarrhea, under two years of age, 9; Bright's disease, 13; congenital debility, 15; lack of care, 1; old age, 7; suicide, 1; accidents, etc., 12. The nativity of the decedents was: United States, white, 95; foreign, 31; colored, 41; unknown, 6. Five deaths occurred at Bayview Asylum; 19 in hospitals and 19 in other institutions. Sixteen coroners' inquests were held. The following number of cases of infectious diseases were reported, as compared with the corresponding week of last year:

	1906	1907	1906	1907
Scarlet fever	0	1	Measles	21
Diphtheria	0	8	Whooping cough	0
Smallpox	2	13	Cholera	0
Typhoid fever	10	12	Cholera infantum	7
Measles	22	1		

Statement of Mortality of Chicago for the Week Ending June 15, 1907, compared with the preceding week and with the corresponding week of 1906. Death rates computed on United States Census Bureau's figures of midyear populations—2,107,620 for 1907 and 2,030,185 for 1906:

	June 15, 1907	June 8, 1907	June 15, 1906
Total deaths, all causes	471	574	490
Age under 14 (141,000)	141	132	110
Age 14-24 (141,000)	141	132	110
Age 25-34 (141,000)	141	132	110
Age 35-44 (141,000)	141	132	110
Age 45-54 (141,000)	141	132	110
Age 55-64 (141,000)	141	132	110
Age 65-74 (141,000)	141	132	110
Age 75-84 (141,000)	141	132	110
Age 85-94 (141,000)	141	132	110
Age 95-104 (141,000)	141	132	110
Age 105-114 (141,000)	141	132	110
Age 115-124 (141,000)	141	132	110
Age 125-134 (141,000)	141	132	110
Age 135-144 (141,000)	141	132	110
Age 145-154 (141,000)	141	132	110
Age 155-164 (141,000)	141	132	110
Age 165-174 (141,000)	141	132	110
Age 175-184 (141,000)	141	132	110
Age 185-194 (141,000)	141	132	110
Age 195-204 (141,000)	141	132	110
Age 205-214 (141,000)	141	132	110
Age 215-224 (141,000)	141	132	110
Age 225-234 (141,000)	141	132	110
Age 235-244 (141,000)	141	132	110
Age 245-254 (141,000)	141	132	110
Age 255-264 (141,000)	141	132	110
Age 265-274 (141,000)	141	132	110
Age 275-284 (141,000)	141	132	110
Age 285-294 (141,000)	141	132	110
Age 295-304 (141,000)	141	132	110
Age 305-314 (141,000)	141	132	110
Age 315-324 (141,000)	141	132	110
Age 325-334 (141,000)	141	132	110
Age 335-344 (141,000)	141	132	110
Age 345-354 (141,000)	141	132	110
Age 355-364 (141,000)	141	132	110
Age 365-374 (141,000)	141	132	110
Age 375-384 (141,000)	141	132	110
Age 385-394 (141,000)	141	132	110
Age 395-404 (141,000)	141	132	110
Age 405-414 (141,000)	141	132	110
Age 415-424 (141,000)	141	132	110
Age 425-434 (141,000)	141	132	110
Age 435-444 (141,000)	141	132	110
Age 445-454 (141,000)	141	132	110
Age 455-464 (141,000)	141	132	110
Age 465-474 (141,000)	141	132	110
Age 475-484 (141,000)	141	132	110
Age 485-494 (141,000)	141	132	110
Age 495-504 (141,000)	141	132	110
Age 505-514 (141,000)	141	132	110
Age 515-524 (141,000)	141	132	110
Age 525-534 (141,000)	141	132	110
Age 535-544 (141,000)	141	132	110
Age 545-554 (141,000)	141	132	110
Age 555-564 (141,000)	141	132	110
Age 565-574 (141,000)	141	132	110
Age 575-584 (141,000)	141	132	110
Age 585-594 (141,000)	141	132	110
Age 595-604 (141,000)	141	132	110
Age 605-614 (141,000)	141	132	110
Age 615-624 (141,000)	141	132	110
Age 625-634 (141,000)	141	132	110
Age 635-644 (141,000)	141	132	110
Age 645-654 (141,000)	141	132	110
Age 655-664 (141,000)	141	132	110
Age 665-674 (141,000)	141	132	110
Age 675-684 (141,000)	141	132	110
Age 685-694 (141,000)	141	132	110
Age 695-704 (141,000)	141	132	110
Age 705-714 (141,000)	141	132	110
Age 715-724 (141,000)	141	132	110
Age 725-734 (141,000)	141	132	110
Age 735-744 (141,000)	141	132	110
Age 745-754 (141,000)	141	132	110
Age 755-764 (141,000)	141	132	110
Age 765-774 (141,000)	141	132	110
Age 775-784 (141,000)	141	132	110
Age 785-794 (141,000)	141	132	110
Age 795-804 (141,000)	141	132	110
Age 805-814 (141,000)	141	132	110
Age 815-824 (141,000)	141	132	110
Age 825-834 (141,000)	141	132	110
Age 835-844 (141,000)	141	132	110
Age 845-854 (141,000)	141	132	110
Age 855-864 (141,000)	141	132	110
Age 865-874 (141,000)	141	132	110
Age 875-884 (141,000)	141	132	110
Age 885-894 (141,000)	141	132	110
Age 895-904 (141,000)	141	132	110
Age 905-914 (141,000)	141	132	110
Age 915-924 (141,000)	141	132	110
Age 925-934 (141,000)	141	132	110
Age 935-944 (141,000)	141	132	110
Age 945-954 (141,000)	141	132	110
Age 955-964 (141,000)	141	132	110
Age 965-974 (141,000)	141	132	110
Age 975-984 (141,000)	141	132	110
Age 985-994 (141,000)	141	132	110
Age 995-1004 (141,000)	141	132	110
Age 1005-1014 (141,000)	141	132	110
Age 1015-1024 (141,000)	141	132	110
Age 1025-1034 (141,000)	141	132	110
Age 1035-1044 (141,000)	141	132	110
Age 1045-1054 (141,000)	141	132	110
Age 1055-1064 (141,000)	141	132	110
Age 1065-1074 (141,000)	141	132	110
Age 1075-1084 (141,000)	141	132	110
Age 1085-1094 (141,000)	141	132	110
Age 1095-1104 (141,000)	141	132	110
Age 1105-1114 (141,000)	141	132	110
Age 1115-1124 (141,000)	141	132	110
Age 1125-1134 (141,000)	141	132	110
Age 1135-1144 (141,000)	141	132	110
Age 1145-1154 (141,000)	141	132	110
Age 1155-1164 (141,000)	141	132	110
Age 1165-1174 (141,000)	141	132	110
Age 1175-1184 (141,000)	141	132	110
Age 1185-1194 (141,000)	141	132	110
Age 1195-1204 (141,000)	141	132	110
Age 1205-1214 (141,000)	141	132	110
Age 1215-1224 (141,000)	141	132	110
Age 1225-1234 (141,000)	141	132	110
Age 1235-1244 (141,000)	141	132	110
Age 1245-1254 (141,000)	141	132	110
Age 1255-1264 (141,000)	141	132	110
Age 1265-1274 (141,000)	141	132	110
Age 1275-1284 (141,000)	141	132	110
Age 1285-1294 (141,000)	141	132	110
Age 1295-1304 (141,000)	141	132	110
Age 1305-1314 (141,000)	141	132	110
Age 1315-1324 (141,000)	141	132	110
Age 1325-1334 (141,000)	141	132	110
Age 1335-1344 (141,000)	141	132	110
Age 1345-1354 (141,000)	141	132	110
Age 1355-1364 (141,000)	141	132	110
Age 1365-1374 (141,000)	141	132	110
Age 1375-1384 (141,000)	141	132	110
Age 1385-1394 (141,000)	141	132	110
Age 1395-1404 (141,000)	141	132	110
Age 1405-1414 (141,000)	141	132	110
Age 1415-1424 (141,000)	141	132	110
Age 1425-1434 (141,000)	141	132	110
Age 1435-1444 (141,000)	141	132	110
Age 1445-1454 (141,000)	141	132	110
Age 1455-1464 (141,000)	141	132	110
Age 1465-1474 (141,000)	141	132	110
Age 1475-1484 (141,000)	141	132	110
Age 1485-1494 (141,000)	141	132	110
Age 1495-1504 (141,000)	141	132	110
Age 1505-1514 (141,000)	141	132	110
Age 1515-1524 (141,000)	141	132	110
Age 1525-1534 (141,000)	141	132	110
Age 1535-1544 (141,000)	141	132	110
Age 1545-1554 (141,000)	141	132	110
Age 1555-1564 (141,000)	141	132	110
Age 1565-1574 (141,000)	141	132	110
Age 1575-1584 (141,000)	141	132	110
Age 1585-1594 (141,000)	141	132	110
Age 1595-1604 (141,000)	141	132	110
Age 1605-1614 (141,000)	141	132	110
Age 1615-1624 (141,000)	141	132	110
Age 1625-1634 (141,000)	141	132	110
Age 1635-1644 (141,000)	141	132	110
Age 1645-1654 (141,000)	141	132	110
Age 1655-1664 (141,000)	141	132	110
Age 1665-1674 (141,000)	141	132	110
Age 1675-1684 (141,000)	141	132	110
Age 1685-1694 (141,000)	141	132	110
Age 1695-1704 (141,000)	141	132	110
Age 1705-1714 (141,000)	141	132	110

Pith of Current Literature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

June 20, 1907.

1. On Mountain Climbing for Professional Men,
By CECIL KENT AUSTIN.
2. Flushing the Intestinal Canal Through Multiple Enterotomy Openings.
By GEORGE H. MONKS.

1. On Mountain Climbing for Professional Men.—Cecil Kent Austin presents a very interesting article on mountain climbing in the Alps, as a recreation for professional men, based upon his own experience.

2. Flushing the Intestinal Canal Through Multiple Enterotomy Openings.—Monks, after a series of successful experiments on cadavers and on animals for the purpose of determining whether the intestinal canal could be cleansed by flushing through multiple enterotomy openings, and whether, if so, it could probably be done without any great degree of danger to the patient, came to the conclusion that it was a perfectly practicable and justifiable procedure. He describes the history of a little girl with acute general peritonitis, who was evidently dying of sepsis. After opening the abdomen and removal of a slightly swollen appendix the peritoneal cavity was thoroughly irrigated through a long glass tube, numerous coils of much distended small intestine being brought into the opening. An incision was made into the gut near the duodenum and a glass tube introduced into this opening. The coils outside of the abdomen were gradually distended with hot salt solution, and a second incision was made in the lowest intestinal loop presenting in the wound, the length of the intestine being about two to three feet. Much gas and foul smelling intestinal contents escaped from the lower wound. When the wash water finally came out clear the upper wound was closed, and from the lower wound the rest of the intestinal canal was flushed. The lower wound was then sewed up, the peritoneal cavity again irrigated, and the abdominal wound was closed with a small cigarette drain at its lowest extremity. The patient was discharged as being cured on the thirty-sixth day in excellent condition.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

June 22, 1907.

1. Immediate After Treatment of Patients Operated on for Cataract,
By WILLIAM H. WILDER.
2. The Immediate After Treatment of Cataract Operations,
By J. W. SCALES.
3. Operations for Secondary Cataracts,
By PETER A. CALLAN.
4. The Physiological Action, Elimination, and Therapeutical Application of Sodium Cacodylate Used Hypodermatically,
By SPENCER L. DAWES and HOLMES C. JACKSON.
5. The Action of Toxic Doses of Ether and the Influence of Amyl Nitrite Thereon,
By WILLIAM MUEHLBERG and S. P. KRAMER.
6. The Anatomy of the Middle Turbinate, with Special Reference to Its Topographical and Surgical Relations,
By HANAU W. LOEB.
7. Pathology of the Middle Turbinate,
By J. L. GOODALE.
8. The Localization of the Motor Area Based on Exact Faradization,
By ALFRED GORDON.
9. The Diagnosis of Perforation of the Bowel in Typhoid,
By CLARENCE D. SELBY.

4. The Physiological Action, Elimination, and Therapeutical Application of Sodium Cacodylate Used Hypodermatically.—Dawes and Jackson have shown by their experiments that sodium cacodylate has a distinct pharmacological action (being decomposed in the body and eliminated in the form of arsenates by the urine, the feces, and probably by the sweat and the breath), and has a toxic effect, but the urine of patients under its influence yields arsenates and reacts

to Marsh's test. It also gives many of the therapeutic effects common to the arsenic compounds.

5. The Action of Toxic Doses of Ether and the Influence of Amyl Nitrite Thereon.—Muehlberg and Kramer state that ether injected intravenously is more toxic than chloroform. The apparent safety of ether when given by inhalation depends probably on the fact that ether is more loosely combined and that it is eliminated more promptly through the lungs. Ether has a boiling point of 35° C. to 37° C., which is below the temperature of the blood, while chloroform boils at 61° C. This may account for the lessened toxicity of ether when given by inhalation. The toxicity of ether depends on concentration. Ether kills in one of three ways: By, (a) direct cardiac paralysis; (b) vagus stoppage of heart; or, (c) vasomotor paralysis. Respiratory paralysis cannot be a cause of death if artificial respiration is maintained. When ether is given intravenously it causes a fall in blood pressure due to the weakening of the heart's action and stimulation of the vagus centre. Injected into the carotid artery, ether causes convulsions, probably due to the irritation of the motor centres in the brain; a fall in blood pressure, due to vagus centre stimulation; anaesthesia and often cessation of respiration. The stoppage of respiration is, in part, due to the fall of blood pressure and, in part, to the action of ether on the respiratory centre, because when the pressure of the blood rises subsequently, as it sometimes does, the respirations are resumed during the temporary elevation. It seems highly probable that when death occurs during the early stages of the administration of ether the following conditions prevail: (a) Weakening of the heart due to the direct action of ether; (b) vagus centre stimulation; (c) vasomotor stimulation and constriction of the arterioles. If this is true for ether, it is probably likewise true for chloroform. This danger may be obviated by giving the anaesthetic in sufficiently dilute form; i. e., the anaesthetic should not be crowded. This is easier to do with ether than with chloroform, because ether appears to be more loosely combined in the blood. As a further prophylactic, the use of atropine is advisable, partially, at least, it prevents vagus inhibition. When circulatory collapse intervenes in spite of these precautions, the indications are to unload the heart of the blood containing the overdose of ether, to dilate the bloodvessels, and to assist elimination by artificial respiration, if the respiratory movements are weak. This can be done by the thoracic compression and possibly even by direct cardiac massage, provided the accident occurs during a laparotomy, but a quicker method is to use amyl nitrite. This drug dilates the peripheral bloodvessels, drains the blood from the heart, reduces the work imposed on the heart and gives that organ a chance to recuperate. Too much, however, must not be expected. If given too late—i. e., when the ether has thoroughly poisoned the cardiac muscle—amyl nitrite is useless. It should be given as soon as the pulse begins to weaken. A strong point in favor of amyl nitrite is the fact that it can be given by inhalation; that its action is, therefore, prompt and that it probably has a direct cardiac stimulatory effect.

8. The Localization of the Motor Area Based on Exact Faradization.—Gordon's two cases seem to prove that the motor area is not confined to the precentral convolution and the sulcus, but extends also to the post-central convolution, although to a much milder degree.

9. The Diagnosis of Perforation of the Bowel in Typhoid.—Selby says that unfortunately there is no one symptom, nor syndrome, the presence of which indicates with certainty the existence of perforation. The diagnosis must be based largely on the judgment

of the physician who has followed the daily variations in the course of the illness, and become so familiar with its general progress that he subconsciously recognizes the change brought about by the perforation. And herein must the surgeon, seeing the case for the first time, accept the opinion of the physician. The three cardinal symptoms are these: Suddenly appearing abdominal pain, rigidity of the muscle wall, and tenderness on pressure. When these appear in the course of any case of typhoid fever the assumption is warranted that perforation has occurred, and operation is not only indicated, but demanded.

MEDICAL RECORD

June 1, 1907.

1. Sterilized Horse Serum in Surgery, By RAYMOND PETIT.
2. Pyrexia in Tuberculosis. What It Tells Us and How It May Be Controlled, By HENRY P. LOOMIS.
3. The Problem of Infant Feeding, By O. HILFNER.
4. Some Aspects of Sterility and Its Treatment, By A. J. RONGINSKY.
5. What Are Acid Fasts? By STEPHEN J. MAHER.
6. Remarks on the Treatment of Disease and So Called "Authorities," By GEORGE F. BUTLER.
7. Abnormal Response to an Irritation of the Motor Area of the Brain, By ALFRED GORDON.
8. A Case of Multilocular Glandular Cystoma Complicating Pregnancy, By B. S. TALMEY.

1. Sterilized Horse Serum in Surgery.—Raymond Petit describes his experiments with horse serum. It has been found after several attempts that boiled horse serum is the substance which is of the most use for inducing polynucleosis. Many other substances may be used to produce polynucleosis by chemotaxis, such as physiological salt solution, peptonized bouillon, aleurone, nucleic acid, and various normal sera; but they do not produce the desired afflux of leucocytes to the same degree nor with identical effects. Aleurone, for example, draws a large number of polynuclear leucocytes, but hungry for grains of aleurone, they gorge themselves and have not the same appetite for phagocytosis with reference to microbes. The normal sera have seemed to produce the greatest polynucleosis which may be utilized for phagocytosis, and that of the horse is the best, since it is less toxic than that of the cow, and can be made almost entirely inoffensive by heating it in a water bath for two hours, for three consecutive days, at a temperature of 90° C., to destroy the alexin without altering the natural sensibilization. After having thus produced a polynucleosis in the peritonæum of animals, it has been found possible to inoculate with impunity into the serous membranes a number of lethal doses of cultures of cholera vibrios, typhoid bacilli, *Bacterium coli*, *Staphylococcus pyogenes*, etc. The results of these experiments led to the attempt to use this method in the treatment of infections in man. The results obtained have been excellent. The author is convinced that we can cure by phagocytosis, and that the afflux of polynuclears by means of sterilized horse serum takes place not only in the peritonæum, but in all the serous cavities, in the mucous membranes, and in wounds of all regions. More than a hundred cases can be cited where this treatment has been successful.

2. Pyrexia in Tuberculosis.—Loomis sums up the diagnostic value of the temperature range in a case of phthisis during active stages of the disease as follows: 1. If the daily temperature is high and never touches the normal, and especially when accompanied by a rise of two or three degrees at night, the case is probably one of acute localized miliary deposit, or possibly of acute general pulmonary tuberculosis. 2. If the daily temperature is irregular, sometimes normal, and at other times ranges between 100° F. and 101° F., and associated with an evening rise, it may be

inferred that a slow and inactive deposit of tubercle is taking place. A general gain in weight and general improvement would be observed as long as the temperature remains below 101° F. 3. If the temperature during most of the day remains about normal and the evening rise does not exceed 101° F., one may infer that the tuberculous process has advanced very slowly if at all. 4. If the day temperature remains always normal and the evening rise does not exceed 99.5° F., one may infer that the tuberculous process is quiescent. The treatment should consist in rest, mental and physical, in the open air if possible; liquid nourishment and alcohol in a form most agreeable to the patient; tepid spongings with alcohol and water, equal parts, and if these means fail, pyramidon or quinine and codeine.

4. Some Aspects of Sterility and Its Treatment.—Ronginsky observes that in seeking the cause of sterility in women not only the whole range of diseases peculiar to women must be considered, but as well the physical and social conditions of the individual. No other condition requires a more detailed knowledge of the physiological and pathological processes that take place in the female genital tract, and depending upon one's ability to distinguish the various processes will depend the success met in the treatment. Once healthy semen is deposited in the upper segment of the vagina and conception does not take place, clinically the woman is at fault. At times the cause is very obscure, but aside from the many pathological lesions that may be present, functional disturbance no matter of how mild a nature will cause the woman to be sterile. Particularly is this true in that class of women who suffer from a general muscular relaxation, are ill nourished, and highly nervous. For in order that the spermatozoon may reach its destination, two mechanical forces besides its own motile power are directly engaged in compelling it to travel in the direction of the uterine cavity. From below we find that the perineal body or pelvic floor by the constant contraction and relaxation of its muscular structure produces a wave in the direction of the cervix, hence the spermatozoa are carried along with this wave. This function of the perinæum is probably one of the most important factors in holding the uterus in its normal position. From above the uterus constantly undergoing some contractions, must, by virtue of its being hollow, have some suction power which also aids the spermatozoon in its uphill travel. In patients who suffer from a general muscular relaxation these mechanical processes are greatly diminished, with the result that conception does not take place, for in addition to it, we must not overlook the fact that the wave produced by the ciliated epithelium lining the uterus is outward, and certainly must hinder such a minute body as the spermatozoon from progressing in an opposite direction.

5. What Are Acid Fasts?—Maher, in answering this question, states that the theory was formerly accepted that the only bacilli likely to be confounded with the tubercle bacillus were the bacillus of leprosy and the smegma bacillus; and that the smegma bacillus was more readily decolorized, and the lepra bacillus less readily decolorized, than the tubercle bacillus. Nine years ago Petri and Lydia Rabinowitsch, while searching for tubercle bacilli in the butter and milk of Berlin, discovered and isolated a bacillus which answered the staining requirements of tubercle bacilli, but which did not cause tuberculosis in injected guinea pigs, and which differed from tubercle bacilli in many cultural ways. About the same time A. Möller at Görbersdorf discovered that a flask of bouillon into which a few days before he had put some green timothy grass from his garden contained a great number of bacilli which in shape and size and staining were like

tubercle bacilli, but which on isolation seemed to have markedly different biological characters. These two discoveries were quickly followed by confirmatory and supplemental findings by bacteriological workers in various parts of the world. During the last few years a whole literature has grown up about the subject, the importance and interest of which are everywhere recognized. All these germs which, with the ordinary staining methods, resemble the tubercle bacillus are now known in English as "acid fasts," in German as "saurefesten Bacillen," and in French as "bacilles acidoresistants." They have now been found in many places and under different conditions, such as acid fasts found in Nature, in butter, in man and beast as harmless and pathogenic acid fasts.

BRITISH MEDICAL JOURNAL

June 8, 1907.

1. Acute Pneumonia in Children, By H. M. MURRAY.
2. Remarks on Complete Vocal Rest During the Sanatorium Treatment of Laryngeal Tuberculosis, By N. BARDSWELL and B. ADAMS.
3. The Value of Ophthalmic Symptoms in General Diagnosis and Prognosis, By R. M. GUNN.
4. Acute Colitis and Ulcerative Colitis, By S. PHILLIPS.
5. Case of Tuberculous Meningitis in Boy Treated with Tuberculin: Recovery: Recurrence and Death, By A. DON.

1. **Pneumonia in Children.**—Murray states that in the case of young children suffering from acute disease of the lungs, it is of more importance to keep an accurate record of the respiration rate than of the pulse rate. It is a measure of the defective aeration of the blood, and reminds us that a prolonged and considerable rise in the respiration rate may be followed by a rapidly culminating exhaustion, matters of great importance in prognosis and treatment. In the early stages of acute pneumonia in children, apart from rickets, the extent and duration of the disease are the chief factors in accelerating the rate of breathing. The writer disbelieves in the current classification of pneumonia in children into lobar pneumonia and bronchopneumonia, holding that it is inaccurate and of no clinical utility. The symptoms and signs are so variable and are met with in such different combinations, that classification is almost impossible. To him bronchopneumonia simply means a pneumonia that in spreading seems to follow the distribution of the bronchial tubes, and lobar pneumonia one that spreads in a fairly even advancing line; in this sense only is bronchopneumonia a commoner disease of childhood than lobar pneumonia. Each sign and symptom should be estimated individually as to its influence on prognosis and treatment, rather than all being lumped together in an arbitrary, hypothetical group. From a study of fifty-four cases of acute pneumonia in children, the following was learned: The more definitely localized the pneumonia, the more sudden the onset. Vomiting is the most constant of the early symptoms, while convulsions are extremely rare as an initial symptom. Pain, an important and significant symptom in the adult, is rarely noteworthy in childhood. The feature most difficult to classify was the fever, it being impossible to group the cases into "continuous" and "remittent." Empyema and pericarditis are most exceptional complications in children. Relapses are always due to direct extension either from the original focus or from some other patch of consolidation. The two most important factors in forming a prognosis are age and nutrition. Most of the cases under one year of age die. Rickets is a very serious factor, especially in prolonged cases. The more sudden the onset and the more localized the consolidation, the better are the patient's chances. Because of the importance of wasting and of continued vomiting, special attention should

be paid to the diet. The writer does not employ ice bags or venesection. A free supply of fresh air is of prime importance. Drugs have little influence over the course of pneumonia in childhood, except as stimulants to the circulation or respiration.

4. **Acute Colitis.**—Phillips's article is based on a series of twelve cases of acute and ulcerative colitis. Very acute cases may commence by severe pains in the back or limbs; this may precede other symptoms by two or three days. More commonly the first symptoms indicate some abdominal disorder—acute pain, with diarrhoea or melæna; vomiting is common. Or, finally, the onset may be gradual, and strongly resemble typhoid fever. The tongue, though thickly coated at first, soon clears off and remains clean. The gums may become sore, ulcerated, or spongy, and the breath often has a horribly offensive musk like odor. The appetite and gastric digestion are preserved in a remarkable degree. Vomiting is rarely present, except at the very onset of the disease. While the pains may be quite severe, yet on the whole colitis is not a very painful disease, and very intense, even fatal, ulcerative colitis may be unaccompanied by pain from first to last. Tenderness is usually present over the part of the colon affected, most often the descending colon. The distended outline of the gut is often discernible, but the distention is not usually extreme. Diarrhoea is an early symptom, and the movements are most offensive, containing mucus, blood, and sometimes large sloughs. The circulation and respiration are singularly little affected; the pulse does not quicken, and remains strong, while there is little tendency to congestion of the lungs, etc. There is a great tendency to severe anæmia in protracted cases, due to the melæna. Leucocytosis is so frequently present that it must be regarded as a feature of the disease, most useful in diagnosis. The patient's mental condition is no criterion of the seriousness of his illness. Sleeplessness is often troublesome. Hiccough occurs in the course of ulcerative colitis so frequently that it is almost to be regarded as a symptom of the disease. And its severity, frequency, and persistency constitute it a very dangerous symptom. The temperature is usually raised, though not to a very high range; as a rule, it is of the continuous type, but it may be remittent or intermittent. Rigors may occur without any subsequent indications of local complications. Emaciation and debility are less rapid than might be expected in so grave a disease. Perforation may occur, though, considering the severity of the ulceration, it is remarkably infrequent, partly because the wall of the colon is much thicker than that of the small intestine. Peritonitis does not necessarily result from perforation—indeed, it may occur without any symptom whatever to denote it. There is a marked tendency to embolism in distant organs. The whole course of the disease tends to consist in a series of repeated attacks of inflammation of the colon. But apart from this there is a distinct tendency to relapse. Treatment should be directed to lessening the amount of toxic substances in the colon. Of all the antiseptics none is so useful in colitis as mercury, blue pill, or calomel. Diarrhoea may be checked by enemata, with or without opium. Opium is the only drug having any influence on hiccough. Nutrition must be most carefully attended to.

LANCET.

June 8, 1907.

1. Vagal and Vasovagal Attacks, By Sir W. R. GOWERS.
2. The Nature of Infectivity in Relation to Tumor Growth, By D. A. WELSH.
3. Some Physiological Effects of High Frequency Currents in Disease, By S. SLOAN.
4. Variations in the Age Incidence of Mortality from Certain Diseases, By Sir S. F. MURPHY.

5. Treatment of the Renal Vessels by the Transperitoneal Method for the Cure of Persistent Urinary Renal Fistula, with Notes of One Successful Case, By M. P. HOLL.
6. Two Cases of Infection by the Paratyphoid B. Bacillus, By F. A. GAYES.
7. A Case of Recurrent Pneumothorax, By J. C. SALE.
8. On the Differentiation of the Meningococcus from Other Gram Negative Diplococci in the Nasopharynx of Cerebrospinal Fluid Contact, By R. M. BUCHANAN.

1. **Vagal Attacks.** Gowers uses the term "vagal attacks" as a designation for prolonged seizures, the symptoms of which consist chiefly in disturbance of some of the functions of the pneumogastric, for the most part sensory and subjective. With the vagal symptoms there is often combined a slight mental change and also disturbance of the vasomotor centre causing constriction of the vessels and coldness, especially of the extremities. Associated with the latter may be some sensory impairment and sometimes also a form of slight tetanoid spasm. When the vasomotor spasm preponderates the case may be termed "vaso-vagal." The attacks are never really brief; they seldom last less than ten minutes and more often continue for half an hour or more. There is a sudden onset of slight symptoms, rapidly increasing, and the ending is gradual. The seizures recur at varying intervals, often for months or years. Women suffer far more frequently than men, and in most cases the trouble is ascribed to hysteria. The vagal symptoms are referred to the stomach, the lungs, and the heart. There is a sudden sense of oppression in the epigastrium, which is irrespective of the state of the stomach or its functions, and seems to ascend to the chest, but never higher, as is the case in epilepsy. Even more common as an early symptom is a sense of respiratory distress, sometimes amounting to actual orthopnoea. With it may be combined the cardiac symptoms—discomfort, acute pain, often a sensation of sudden stoppage of the heart followed by rapid action. A sense of impending death is often experienced. A peculiar slight mental state is common, generally described as a difficulty or slowness of mental operations, beginning quite suddenly, and striking the patient as quite abnormal. The vasomotor spasm sometimes attains a high degree. There is symmetrical coldness associated with a small pulse. The face is pale and shivering is common, sometimes amounting to a definite rigor. There is often tingling and numbness in the extremities, and sometimes tetanoid spasm. This differs from typical tetany in that the fingers are flexed at all joints. In the treatment of such attacks it is essential to discover any defect in the general health and anything in the conditions of life involving strain on the nervous system, and to put these right as far as possible. Conspicuous anæmia is not often present, but constipation is common and harmful. It is very seldom that any exciting cause for the attacks can be traced, but it is important to avoid all causes of overfatigue. When an epileptic element can be traced, good results follow the use of the bromides. In all cases in which there is vasomotor spasm the regular administration of nitroglycerin is by far the most useful agent. Taken regularly it exerts a permanent steadying effect on the vasomotor centre. Nerve tonics are sometimes useful.

2. **Cancer.**—Welsh reviews the recent work done on cancer. He finds that certain forms of nuclear division appear early in cancer cells, that such nuclear divisions are found only in cells of reproductive tissues preliminary to maturation (and in leucocytes) and that nuclear exchanges (conjugations?) take place between wandering leucocytes and developing cancer cells. There is evidence that two conditions are commonly present—one general and the other local—which

may possibly predispose a group of tissue cells to assume the character of reproductive cells. The general condition is a chemical change in the reaction of the body fluids. Developing cells are induced to undergo increased and abnormal divisions when the alkalinity of the medium of their environment is increased. Such increase in the alkalinity of the body fluids obtains in the case of cancer patients. The local condition is indicated by the fact that the primary appearance of cancer in any tissue is most frequently associated with the senescence of that tissue. This is not strictly the aging of the tissue, but the advent of the period of its functional desuetude. Of the many factors influencing the appearance of new growths the senescence of the tissue of origin is probably the least variable. In all probability the influence of local irritation is exercised in the induction of premature senescence. It is possible that as the period of functional activity draws to a close, the tissue is induced by some obscure biological stimulus to make preparations for self propagation. Such preparations may be looked on as unnatural or perverted, since they occur in cells not specially set apart for reproduction.

3. **High Frequency Currents.**—Sloan has studied the effects of high frequency currents in disease, and arrives at the following conclusions regarding their effects on the pulse and the blood pressure: 1. They cause in all cases at first diminished peripheral resistance. 2. In all cases this is followed sooner or later by increased cardiac force when the currents are given in therapeutic doses. 3. The effects on the blood pressure and the pulse rate of this double action will depend on the cardiovascular stability. 4. Should this be normal, there may be no change whatever in either the pulse rate or the blood pressure. 5. Should there be slight cardiovascular instability then the diminished peripheral relaxation is only in part compensated by the heart. The blood pressure falls slightly, but the pulse rate is unchanged. 6. If the heart is asthenic and the blood pressure low, the increase of the cardiac force obtained from the current may so overpower the tendency to peripheral relaxation that the blood pressure rises while the pulse rate falls. 7. Should the patient, in addition to (6), be fatigued or unduly excited, the heart may not be able to respond to the current; the result will be a dangerous fall of blood pressure with a relatively high pulse rate. 8. The after effect is, in low blood pressure, due to diminished cardiac force prior to the treatment, a higher level of blood pressure. 9. If the blood pressure is already high, due to the high arterial resistance of albuminuria with somewhat weakened cardiac action, the current will probably have the effect of raising the blood pressure without raising the rate of the pulse. 10. When the blood pressure has been high for the individual's age and there is no apparent disease to account for it, after several applications of the current the blood pressure is diminished and there is a corresponding improvement in the pulse rate.

LA SEMAINE MEDICALE.

May 15, 1907.

The Possibility of Making an Accurate Histopathological Diagnosis of Diseases of the Liver and Spleen During Life.

By Professor F. SCHUPFER.

To Make a Histopathological Diagnosis of Diseases of the Liver and Spleen During Life.—Schupfer's idea is to secure particles of these organs for microscopical examination during life by means of puncture.

Myatonia Congenita (Oppenheim's Disease).

By M. A. BAUDOUIN.

Myatonia Congenita.—Baudouin reports a case of this nature, congenital muscular atony, and has collated the literature on the subject.

May 28, 1907.

The Dechlorided Regimen in Scarlet Fever and the Nephritis Following.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT.

May 14, 1907.

1. Concerning Manganese Poisoning and Manganophobia, By VON JAKSCH.
2. The Present Teaching in Regard to Percussion of the Heart, By TREUEP.
3. Concerning the Influence of Nicotine Upon the Organs of Circulation, By GRASSMANN.
4. Treatment of Delirium Tremens, By EICHELBERG.
5. Concerning the Pathogenity of the Typhus Bacillus of Mice for Man, By SHIBAYAMA.
6. How Does the Animal Organism Protect Itself Against the Entrance of Germs from the Digestive Tract? By UFFENHEIMER.
7. Concerning Polyneuritis Cerebralis Acuta with Involvement of the Acoustic Nerves, By SCHÖNBORN.
8. A Case of Severe Lysol Poisoning Internally. By VON BURK.
9. Concerning Digitoxin and Digalen, By CLOETTA.
10. The Process of Sedimentation of Excretion with Hydrogen Peroxide, By SACHS-MÜCHE.
11. Concerning the Influence of Nicotine, Coffee, and Tea on the Digestion (Concluded), By CRÄMER.

1. **Manganese Poisoning and Manganophobia.**—Von Jaksch asserts that in the manganese industry peculiar nervous diseases are met with which are caused by the entrance into the lungs of the workmen of dust impregnated with manganese monoxide, sometimes associated with other injuries. It also appears that a neurosis is met with among those employed in the manufacture of manganese by which the symptoms of chronic manganese poisoning may be simulated. This is designated by the writer as manganophobia.

3. **Influence of Nicotine Upon the Organs of Circulation.**—Grassmann calls attention to the fact that the general impression that nicotine is injurious to the circulatory system does not rest on a firm basis. The opportunities to observe the effect of pure tobacco poisoning on the heart and bloodvessels are very few, it is met with almost always in association with alcohol, coffee, tea, or some other form of poisoning. He seems to doubt that tobacco really does inflict the harm on the circulatory system that it is supposed to.

4. **Treatment of Delirium Tremens.**—Eichelberg describes the treatment followed at the Allgemeine Krankenhaus Hamburg-Eppendorf. Alcohol is avoided and no specific routine is adopted. The heart is watched and carefully supported. On the third day 2 to 4 grammes of chloralformamid are given in the evening. As the thirst is great and the passage of the largest possible quantities of fluid is beneficial, the patients are given a drink, composed of extractum oxycocci 50.0, syrupus simplex 200.0, aqua communis 5000.0, which tastes well, and by its brown color deceives the delirious patients into the belief that they are drinking their desired alcoholic drachm. The patients are kept as far as possible in a common ward in order to take advantage of the interest they take in each other; in exceptional cases only is a patient isolated.

5. **Pathogenity of the Typhus Bacillus of Mice for Man.**—Shibayama says that, after many bacteriological researches, he finds the typhus bacillus of mice to be identical with the enteritis bacillus. If it is correct that the enteritis bacillus produces acute gastroenteritis the conclusion follows that the typhus bacillus of mice is very frequently pathogenic for human beings, and causes in them an acute gastroenteritis.

6. **How Does the Animal Organism Protect Itself Against the Entrance of Germs from the Digestive Tract?**—Uffenheimer says that all of his experiments go to show that the quantity of alexin in the serum of an individual decides whether bacteria which pass

through the walls of the gastrointestinal canal into the circulation can remain in the blood or not. This is a new support for the theory that the bactericide of the blood plays an important part in the struggle against the active agents of infection when they have been able in any way to enter the body.

7. **Polyneuritis Cerebralis Acuta with Involvement of the Acoustic Nerves.**—Schönborn reports a case in which there was an acute, not apoplectic affection, in the region of four cranial nerves, the left abducens, the left facial, and both auditory, the right to only a slight degree. By exclusion he diagnosticates the case as one of polyneuritis.

11. **The Influence of Nicotine, Coffee, and Tea on the Digestion.**—Crämer says that in the treatment of diseases of the gastrointestinal tract, it is usually advisable to limit, if not forbid, the use of tobacco, coffee, and tea. In hyperchloridia only very weak coffee should be drank because of its influence in increasing the secretion, and it may be better perhaps to take tea in its place. The use of tobacco should be reduced to a minimum, as smoking appears to excite the secretion of hydrochloric acid and so to increase the hyperchloridia. When there is lack of acidity tea should be forbidden, while coffee may be beneficial in those cases in which the lack of hydrochloric acid in the gastric secretion is not due to irreparable changes in the mucous membrane of the stomach. Smoking must be absolutely prohibited. In motor insufficiency smoking must be reduced to a minimum or completely stopped in all cases in which it is accompanied or followed by an uncomfortable feeling in the stomach. Very little is known in regard to the effect produced by tea and coffee on the motility of the stomach, both seem rather to influence the secretion, but it is certainly an advantage for patients with motor insufficiency to partake of either sparingly. In gastritis a distinction must be made as to whether hyperchloridia or hypochloridia is present, for according to the condition present a moderate use of either coffee or tea may be permitted, but an immoderate use must be controlled in all cases. The same is true in ulcer of the stomach, and the healing of the ulcer will certainly be interfered with if the patient smokes much.

May 21, 1907.

1. How is the Increasing Mortality from Puerperal Fever to be Checked? Lessening of Operations. Improvement of the Disinfection in Private Practice, By VON HERFF.
2. The Present Position of the Streptococcus Question Particularly in Obstetrics, By ZANGEMEISTER.
3. Transmission of Syphilis Experimentally from the Eyes of One Rabbit to Those of Another, By TOMASCZEWSKI.
4. The Clinical Alexin Test, By MORO.
5. When Should a Myoma be Operated On? By WEISSWANGE.
6. Modern Researches Regarding the Dorsal Reflex of the Foot, By LISSMANN.
7. Concerning Operations with the Skin Protected by Gaudinin, as Recommended by Döderlein, By LITTAUER.
8. The Casuistics of Intestinal Concretions, By WIMMER.
9. A Case of Multiple Neurotic Gangrene of the Skin and Its Relation to Hypnosis, By VON SZOELLOESY.
10. Rare Disturbances of Pregnancy, By KRUMMACHER.
11. The Ætiology of Nonsyphilitic Pemphigus Neonatorum, By KAUPÉ.
12. A Steel Spring for the Correction of Flat Foot, By LENGFELNER.
13. The Present Teaching in Regard to Percussion of the Heart (Concluded), By TREUEP.
14. Karl von Linné, By SUDHOFF.

2. **The Streptococcus Question, Particularly in Obstetrics.**—Zangemeister found, in the lochia of lying in women, streptococci in 13.5 per cent. of the cases of puerperal endometritis, the type of the mildest form of

infection, in 30.5 per cent. of the cases of exudative parametritis, the type of moderately severe infection, and in 50 per cent. of the cases of purulent sepsis, the severest form of infection. In regard to immunization, he says that the streptococci used for immunization must be virulent to the individual to be immunized, that only streptococci which are introduced while living furnish a useful immunity, that the individual must be made very sick by the introduced streptococci, as otherwise the formation of immune bodies is too slight, and that the individual must have recovered to a certain degree from this immunization sickness.

3. Transmission of Syphilis Experimentally from the Eyes of One Rabbit to Those of Another.—Tomaszewski reports his experiments in detail by means of which he was able to obtain all the changes of the iris which have been obtained by means of syphilitic material; so it is probable that a portion at least of the affections were of syphilitic nature, but the diagnosis was rendered uncertain by the failure to detect spirochæte.

5. When Should a Myoma Be Operated On?—Weisswange reports three cases in which he has removed uterine myomata, but he hardly seems to furnish an answer to the question with which he commences his paper.

8. Intestinal Concretions.—Wimmer reports a case of an intestinal concretion of high specific gravity which was removed from a woman, thirty-seven years of age, by laparotomy. It was eight cm. long, six cm. broad, and 19 cm. about its greatest circumference. It contained a grayish white nucleus, about which were concentric white, yellow, and brown layers, which grew darker as they approached the periphery, which was deep black. The concretion consisted chemically of calcium carbonate, calcium phosphate, and ammonium magnesium phosphate.

9. Multiple Neurotic Gangrene of the Skin.—Szoeloesy reports a case of multiple gangrene of the skin which he met with in a young woman, twenty years of age. An ulcer had been present for three years on the back of the left hand, and more recently ulcers had appeared on the upper arm, the breast, the thighs, and the feet. Suggestion while the patient was in a hypnotic sleep resulted in a cure.

10. Rare Disturbances of Pregnancy.—Krummacher reports a case of hysteric fever in a woman, thirty-three years old, pregnant for the first time, and pains which simulated those of a miscarriage in the second pregnancy of a woman, twenty-eight years of age.

Proceedings of Societies.

AMERICAN SOCIETY OF SANITARY AND MORAL PROPHYLAXIS.

Meeting of April 11, 1907.

The President, Dr. PRINCE A. MORROW, in the Chair. **How and to What Effective Extent Can the Health Authorities Aid in the Prophylaxis of Venereal Diseases?**—Dr. W. M. L. COPLIN, director of public health charities, Philadelphia, read this paper (see page 1204).

Professional Secrecy and the Obligatory Notification of Venereal Diseases.—This was the title of a paper by Mr. WILLIAM A. PURRINGTON (see page 1206).

The Prenuptial Sanitary Guarantee.—This paper was read by Dr. EDWARD L. KEYES (see page 1201).

The Medical Secret and the Safeguarding of Marriage from Venereal Infection was the title of a paper by Dr. EGBERT H. GRANDIN.

Dr. WILLIAM S. GOTTHEIL said he had listened to the papers of the evening with much gratification, and especially to that of Dr. Keyes, which emphasized the rights of the individual. This was important in view

of the extension of municipal and corporate authority in the community, and we were too apt to lose sight of it. Dr. Gottheil thought that any law to compel the registration and notification of venereal diseases would defeat itself, because it would have the effect of keeping these patients away from reputable physicians, who would feel it obligatory to obey such a law. Even under present conditions, these patients not infrequently asked to be registered by number instead of by name. The speaker held that any person had the right to keep this personal secret as he had a right to apply for relief, and that no one, physician or other person, had the right to insist upon the official notification of these diseases, even for the purpose of benefiting the community at large. Perhaps in the future something might be accomplished along these lines, but in our present state of society such attempts were largely utopian. Education was the only way in which the venereal peril could be mitigated or removed—not by absolving physicians from the obligations of medical secrecy.

Dr. HERMANN L. COLLYER said he saw no reason why venereal disease should be protected any more than any other disease. As the law now stood, it was obligatory for physicians to report various infectious and contagious diseases, and he saw no reason why syphilis and gonorrhœa should not be included in the list. The main reason why these diseases were kept secret was to protect the character of the patients, and while that argument carried a certain degree of weight, the fact should not be lost sight of that the community at large were entitled to some protection from contamination. Instances in which the venereal diseases were innocently contracted were of such common occurrence that the fact scarcely needed mention. In the case cited by Dr. Grandin the speaker saw no reason why the secret should not have been divulged. The physician should not be asked to be a party to a crime, and it certainly would be a crime to knowingly permit an innocent person to become infected with one of these diseases. It was only a question of time, Dr. Collyer said, when the notification of venereal diseases would become obligatory, as with other infectious and contagious diseases.

Dr. EDWARD L. KEYES, JR., said that in the discussion before the French Society of Sanitary and Moral Prophylaxis, to which Dr. Keyes had already referred in his paper, many curious instances had been brought out, especially in connection with the subject of matrimony. Two medical men reported that they had succeeded in persuading two prospective bridegrooms recently infected with syphilis to go to the fathers of their intended wives and tell them that the marriages must be postponed. In one case the girl's father came to the physician and upbraided him for interfering with other people's business, and in the other case, not only did the girl's father come, but subsequently the mother and the girl herself. They wept and said their social engagements were far more important than any danger to the girl's health.

Dr. Keyes said he agreed with Dr. Grandin that this entire subject could best be approached gradually. What we needed was an entering wedge, and probably the most efficient entering wedge would be to remove from the venereal diseases the stigma of shame. While the obligatory notification of these diseases might act as a deterrent to their contraction to a certain extent, it would, on the other hand, add to the secrecy that now surrounded them. The speaker said that in his experience the agonies that accompanied an attack of gonorrhœa did not as a rule prevent the victim from exposing himself to a subsequent infection, and he had found that moral suasion was the

most potent factor in the hands of the physician in dealing with this class of patients.

Dr. MARY D. HUSSEY, of East Orange, N. J., said that she had been interested for many years in the work of the American Purity Alliance, and had given the subject of the venereal infection of innocent women and children much consideration. She thought that in some cases this might be prevented if fathers would make an effort to protect their daughters by insisting upon an examination of their prospective husbands in cases where they were not above suspicion. She suggested that physicians might set an example in this direction.

The PRESIDENT, in discussing Dr. Coplin's paper, said he thought it was very doubtful whether the present state of professional or public sentiment would render it practicable to secure the obligatory notification of venereal diseases. The health authorities regarded notification as the first active step toward interference, as was the case in tuberculosis. Assuming that the health authorities required a report of venereal diseases as of other infectious diseases dangerous to the public health and the medical profession cooperated in this measure, what could be accomplished? Under existing conditions there were no adequate provisions for the isolation or care of these patients—the hospital facilities for the treatment of this class of cases were exceedingly restricted. In the City Hospital, the only institution in which acute venereal diseases were received, there were only twenty-six beds for the female venereal patients, and about twice that number for the males.

Aside from this aspect of the subject, however, the health authorities could render most efficient aid in the work in which the society was engaged by an official registration of these diseases, which could be secured by asking physicians to report all cases of venereal diseases coming under their care, omitting, however, names and addresses, and by requiring all hospitals and dispensaries to report all such cases. By this method there would be no violation of secrecy, and still we should obtain something in the way of an accurate census and thus get an idea of the extent of the evil. At present we had no reliable statistical data showing the extent of venereal morbidity.

Another way in which the vast machinery of the health department could be utilized was in an educational capacity. Leaflets could be printed giving instruction to those suffering from gonorrhœa or syphilis as to the nature and significance of these diseases—the importance of their cure, the varied modes of their contagion, the rules to be observed in preventing the infection of others, etc.—of the same general character as those now disseminated in regard to tuberculosis. In these leaflets syphilis and gonorrhœa could be referred to in the same light as other infectious diseases, and as a danger to the public health. They could be distributed to the patients at the various hospitals and dispensaries under the judicious supervision of the attending physicians.

The question of the medical secret in relation to venereal diseases was a many sided one, and objections could be raised to it from each and every point of view. As a good illustration of this fact, the speaker recalled the case of a retired physician whose cook had some form of skin eruption. He sent her to a neighboring colleague and friend, a dermatologist, who treated her and apparently cured her. Subsequently she had an eye affection, and he sent her to another colleague, also a friend, an ophthalmologist, who treated her. Later on the physician discovered that his cook, who also assisted in taking care of his children, had had syphilis. He thereupon upbraided his two colleagues for having kept him in ignorance in

regard to the true character of her disease, of which they had been aware, and they both declared that they could not under any circumstances violate the confidence of the patient. Reference was also made to another case, that of a prominent physician whose only daughter was engaged to a young man of good social position. Just before the wedding, the latter had an attack of ocular paralysis which aroused the father's suspicion as to its syphilitic nature. He went to the young man's physician, who happened to be an old friend of his, and who knew of the engagement, and asked him whether his patient had syphilis. He refused to say a word about the case.

In dealing with smallpox, diphtheria, etc., the cardinal indication was to protect others from infection; in dealing with venereal diseases, apparently the only consideration was to protect the secret of the patient. While nonviolation of the medical secret might be laid down as a general rule of practice, yet the speaker thought there were certain situations and conditions under which the binding character of this confidence between physician and patient might be relaxed. When, for example, a young man in the active stage of syphilis contemplated marriage with a woman, with the practical certainty of infecting her, and when he refused to listen to the physician, then the latter should be guided by his own lights and conscience as to adopting other means to cause a postponement of the wedding.

Dr. COPLIN said that in his paper he had not contemplated the urging of obligatory notification of venereal diseases. As a matter of fact, he had distinctly stated that the time was not yet ripe for such a radical step, chiefly because the public were not yet sufficiently educated regarding these matters to submit to it. As an evidence of this, he referred to the fact that even in official records but few cases were traced directly to such diseases; all references to the fact were usually carefully suppressed.

The speaker thought that if young men knew that they would require a clean bill of health before they could be married, it might have some restraining influence upon them. Of course, such a system of inspection might be open to fraud; still, the mere knowledge of its existence would possibly have some restraining influence and certainly some educational value. The entire question, primarily, was one of education, and this knowledge should be imparted to the young men of the land when it would do the most good and the least harm. The speaker said that one of the ablest scholars and teachers he had ever known, and with whom he had long been in close contact, once told him that hygiene, and especially sexual hygiene, was one of the most difficult topics to teach, and that it could not be satisfactorily taught by circulars or books. The printed page fell far short of the necessary requirements.

At a recent meeting in Philadelphia Dr. Howard Kelly had read an interesting paper on the suppression of venereal diseases, in which he took a most hopeless view of any good that might result from professional cooperation in these matters, and held that personal purity and the influence of a good parentage and bringing up were the sheet anchors that would restrain young men and women from falling into these social vices. The speaker had for a long time been in close contact with persons who were connected with the Juvenile Court in Philadelphia, and it was amazing to learn how many of the children that were sent to the House of Detention were affected with venereal disease. Surely there was something wrong in any system of education that did not include in its curriculum a certain amount of instruction regarding these subjects, which were so vital to the health and happiness

of the people. Information on these subjects could not be given by pamphlet, but only by personal teaching.

Mr. PURRINGTON said that the statute relating to the medical secret was only a rule of evidence in the State of New York. The penal law did not enjoin such secrecy, and each physician had to decide for himself whether such knowledge should be divulged or not. There was no absolute rule requiring physicians to keep secret all the information derived from their patients. If the diseases under discussion and their sequelæ were so loathsome and dangerous and so far reaching in their consequences as physicians said they were, there was nothing in the law to prevent physicians from divulging information obtained from patients regarding them, if it was considered wise and necessary to do so. To what extent medical men should disclose professional secrets was, with us, a matter of conscience and judgment, not of statutory law; any disclosure being made, of course, subject to liability for damages in the event of its unjustifiability and resulting damage.

Dr. GRANDIN said that, while the law of the State of New York did not recognize professional secrecy as a rule of evidence, still physicians looked upon it in that light, and if it once became known that certain physicians could not be trusted to guard the professional confidence that had been placed in them, their financial status would soon fall very low, while the financial status of those who still adhered to the dictum laid down by old Hippocrates would be correspondingly high.

As the best and simplest wedge leading to a solution of this entire problem, Dr. Grandin suggested that the various health authorities should include the venereal diseases among the acute infectious diseases. They certainly belonged in that category, and no one would hesitate to say so if the members of his own family were in danger of innocently contracting them. In the promulgation of this subject, education was the essential factor—education not only of the laity, but of health authorities as well—and some day a health commissioner would arise with the requisite amount of courage and mental equipment, and place syphilis and gonorrhœa in the same category and on the same plane as other infectious diseases.

The following officers were reelected for the ensuing year: President, Prince A. Morrow, M. D.; vice-presidents, Stephen Smith, M. D., Professor Edwin R. A. Seligman, Francis Lynde Stetson, Esq.; secretary, Edward L. Keyes, Jr., M. D.; treasurer, Smith Ely Jelliffe, M. D.

Book Notices.

Modern Surgery. General and Operative. By JOHN CHALMERS DA COSTA, M. D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia, etc. Fifth Edition, Thoroughly Revised and Enlarged, with 872 Illustrations, some of them in Colors. Philadelphia: W. B. Saunders Company, 1907. Pp. 1283. (Price, \$7.)

The first edition of this book appeared in 1894. Each successive edition has shown changes. Among the alterations for this edition may be mentioned those in the chapters on hernia, ulcer, and cancer of the stomach and duodenum, tetanus, syphilis of bones and joints, gonorrhœa in children, the brain, injuries by electricity, etc. Many new operations are described. These alterations have become necessary, since the publication of the last (fourth) edition, in 1903, and it can be said that the author has taken advantage of the opportunity to bring his standard book on surgery fully up to date.

History of Modern Medicine. By JAMES J. WALSH, M. D., Ph. D., LL. D., Acting Dean and Professor of the History of Medicine and of Nervous Diseases, Fordham University Medical School, etc. New York: Fordham University Press, 1907. Pp. 360.

We welcome works of this kind. They are evidence of the growth of culture within the medical profession which betokens that the time has come when our teachers have the time to look backward on what has been accomplished.

Dr. Walsh here traces in pleasing fashion the development of modern medicine from the early times of Morgagni, the father of pathology, who was the incarnation of that inspired curiosity which has been the heritage of the master of medicine in every age. Morgagni's patient dead house work laid the foundations of our modern knowledge of ætiology and of the clinical medicine of to-day. The studies of Auenbrugger and of Laennec on the diseases of the chest are outlined with a clear and sympathetic grasp. The man and his times are the things that appeal to Dr. Walsh rather than his bibliography. He treats in the same appreciative manner of the work of Johann Müller, Theodor Schwann, Claude Bernard, and Pasteur. A special and interesting chapter is devoted to the Irish School of Medicine as represented in the work of Graves, Stokes, and Corrigan. A final chapter on the work of Joseph O'Dwyer closes this eminently suggestive and helpful volume.

Pædiatrics. The Hygienic and Medical Treatment of Children. By THOMAS MORGAN ROTCH, M. D., Professor of Pædiatrics, Harvard University. Fifth Edition, Rearranged and Rewritten. Illustrated by Numerous Engravings in the Text and by Colored Plates. Philadelphia and London: J. B. Lippincott Company, 1907. Pp. xxv-17 to 1060.

The previous editions of this excellent work have been reviewed in these columns as they have appeared during the past eleven years. The striking advances that have been made in pædiatrics since 1895 are well shown by a comparison of the first and fifth editions. The latter presents in an admirable manner the subject of pædiatrics as it is understood and taught to-day. Some of the most radical changes to be noted between these two editions are in the chapters on feeding. The authoritative position held by Dr. Rotch upon the subject of feeding and nutrition during infancy and childhood renders this portion of his book of particular interest. The section devoted to this subject is a storehouse of knowledge, and will well repay not only reading, but study. It must be said that the practical feeding of an infant, however, as here presented, is still for the general practitioner a question very complicated and difficult. One of the most serious problems for him is to make his milk mixture contain the percentages of elements which he desires. What is most urgently needed by the practitioner to-day in the direction of infant feeding is a simpler and more practical method of arriving at the data of the actual milk prescription. The prescriber may readily reach a conclusion as to the percentages desired. His difficulty then is to give the mother or nurse directions which will secure those percentages. The milk laboratory is an admirable institution, and does this work for the practitioner easily and accurately, but it is available only for a very minute proportion of artificially fed babies. The overwhelming majority of them are fed and must always be fed upon home modifications. The end most to be desired in this direction is a simpler means of home modification.

A radical change is to be noted in the chapters upon

the diseases of the stomach and intestines. For the first time classification is attempted upon an aetiological basis, and the results on the whole are very satisfactory. Ample space is given to the diseases of the nervous system, and this section is one of special merit. Children are so prone to nervous disorders that no work upon their diseases can be complete without extended consideration of this subject. Reflex phenomena are particularly numerous and are so irregular in their manifestations that from a diagnostic point of view they are very important. Much attention is, therefore, given to the reflex symptoms arising from the various organs.

Much less space is given to diseases of the blood than in the first edition, but the subject is now presented in a much more practical and satisfactory manner. The chapter on premature infants has also been rewritten and is worthy of particular commendation.

Throughout the book case histories are freely used, but they are less prominent than in earlier editions. As in the former editions, the illustrations are a very marked and important feature, and the volume is one of the most notable in paediatric literature.

Miscellany.

The Amended New York State Substitution Law.—The following, entitled "An act to amend section four hundred and one of the penal code, relative to certain offenses connected with the dispensing and sale of drugs and medicines," has been passed by the legislature of the State of New York and signed by the governor. The portions printed in italics are new; those inclosed in brackets are omitted from the old law.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Section four hundred and one of the penal code is hereby amended so as to read as follows:

§401. [An apothecary, or licensed druggist, or licensed pharmacist, or a person employed as clerk or salesman by an apothecary or licensed druggist or licensed pharmacist or otherwise carrying on business as a dealer in drugs or medicines.]—*Any person, who, in putting up any drug [s or] medicine [s], or food or preparation used in medical practice, or making up any prescription, or filling any order for drugs, [or] medicines, food or preparation [wilfully, negligently, or ignorantly omits to label the same, or] puts any untrue label, stamp, or other designation of contents upon any box, bottle, or other package containing a drug, [or] medicine, food or preparation used in medical practice, or substitutes or dispenses a different article for or in lieu of any article prescribed [or] ordered, or demanded, or puts up a greater or less quantity of any [article] ingredient specified in any such prescription, order or demand than that prescribed [or] ordered, or demanded, or otherwise deviates from the terms of the prescription, [or] order, or demand by substituting one drug for another [which he undertakes to follow, in consequence of which human life or health is endangered], is guilty of a misdemeanor; provided, however, that, except in the case of physicians' prescriptions, nothing herein contained shall be deemed or construed to prevent or impair or in any manner affect the right of an apothecary, druggist, pharmacist, or other person to recommend the purchase of an article other than that ordered, required, or demanded, but of a similar nature; or to sell such other article in place or in lieu of an article ordered, required, or demanded, with the knowledge and consent of the purchaser. Upon a second conviction for a violation of this section the offender must be sentenced to imprisonment, for a term*

of not less than ten days nor more than one year, and to the payment of a fine of not less than ten dollars nor more than five hundred dollars. The third conviction of a violation of any of the provisions of this section, in addition to rendering the offender liable to the penalty prescribed by law for a misdemeanor, shall forfeit any right which he may possess under the law of this State at the time of such conviction, to engage as proprietor, agent, employee, or otherwise, in the business of an apothecary, pharmacist, or druggist, or to compound, prepare, or dispense prescriptions or orders for drugs, medicines, or foods or preparations used in medical practice; and the offender shall be by reason of such conviction disqualified from engaging in any such business as proprietor, agent, employee, or otherwise or compounding, preparing, or dispensing medical prescriptions or orders for drugs, medicines, or foods, or preparations used in medical practice.

§2. This act shall not affect or impair any liability, penalty, or punishment under the provisions of section four hundred and one as the same existed prior to the time this act takes effect, but the same may be enforced, prosecuted, or inflicted as fully and to the same extent as though this act had not been passed; and all actions civil or criminal instituted under or by virtue of said section as the same existed prior to the passage of this act, and pending immediately prior to the taking effect hereof, may be prosecuted and defended to final effect in the same manner as though this act had not been passed.

§3. This act shall take effect September first, nineteen hundred and seven.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending June 21, 1907:

Smallpox—United States.

Places.	Date.	Cases.	Deaths.
California—Berkeley	May 25-June 1.....	1	
California—Los Angeles.....	June 1-8.....	1	
Illinois—Chicago.....	June 8-15.....	1	
Illinois—Springfield.....	June 6-13.....	1	
Indiana—Elkhart.....	June 1-8.....	1	
Indiana—Evansville.....	June 1-8.....	1	
Indiana—Indianapolis.....	June 2-9.....	3	
Indiana—South Bend.....	June 1-8.....	1	
Iowa—Jesseup.....	May 16-June 12.....	16	
Iowa—Keokuk.....	May 1-31.....	3	
Kentucky—Louisville.....	June 6-13.....	3	
Louisiana—New Orleans.....	June 1-8.....	8	
Louisiana—Shreveport.....	June 1-8.....	8	
Massachusetts—Lawrence.....	June 1-8.....	1	
Michigan—Detroit.....	June 1-8.....	6	
Michigan—Huron County.....	June 12.....		Present.
Michigan—Saginaw.....	June 1-15.....	6	
Minnesota—Stillwater.....	May 1-31.....	4	
Minnesota—Winona.....	June 1-8.....	1	
Missouri—St. Louis.....	June 1-8.....	1	
North Carolina—Charlotte.....	June 8-15.....	1	
Ohio—Cincinnati.....	June 7-14.....	3	
Pennsylvania—Homestead.....	May 29-June 7.....	2	
Tennessee—Nashville.....	June 8-15.....	2	
Texas—Galveston.....	May 31-June 7.....	3	
Utah—Ogden.....	May 1-31.....	2	
Washington—Spokane.....	June 1-8.....	10	
West Virginia—Charleston.....			
Kanawha County.....	Jan. 1-June 14.....	68	
Wisconsin—Milwaukee.....	June 1-8.....	8	

Smallpox—Foreign.

Brazil—Bahia.....	May 18-25.....	11	
Brazil—Para.....	May 18-June 1.....	13	
Brazil—Rio de Janeiro.....	Apr. 29-May 12.....	1	3
Canada—Halifax.....	June 9-15.....	1	
Canada—Toronto.....	Apr. 28-June 1.....	17	
Chile—Iquique.....	May 6-13.....		Present.
China—Hongkong.....	Apr. 6-27.....	31	23
Colombia—Cartagena.....	May 12.....		Present.
France—Paris.....	May 25-June 1.....	11	2
Germany—General.....	May 18-25.....	9	

Great Britain—Southampton	May 23 June 1	1	
India—Calcutta	May 28 June 1	1	17
Italy—Genoa	May 23 June 2	24	
Italy—Livorno	May 26 June 2	1	
Italy—Messina	May 18-25	2	
Jamaica—Kingston	May 24 June 1	2	
Madagascar—Tananarive	May 26 June 2	20	13
Mexico—Veracruz	May 1-8	13	
Mexico—Mexico	May 26 June 2	2	1
Mexico—Nuevo Laredo	May 7	2	Imported
Portugal—Lisbon	May 23 June 1	10	
Russia—Moscow	May 9-18	3	2
Russia—Odessa	May 18-25	12	2
Russia—Warsaw	May 4-11	5	5
Spain—Barcelona	May 21-31	3	
Spain—Valencia	May 26 June 2	9	

United States Foreign

Brazil—Para	May 18 June 1	4	3
Brazil—Rio de Janeiro	Apr. 29 May 12	5	3
Cuba—San Nicolas	June 12-18	1	
West Indies—San Juan, Port of Spain	May 18-25	3	1

Foreign Foreign

India—Calcutta	Apr. 28 May 1	35	
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United States

California—San Francisco	May 23-26	1	1
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Foreign Foreign

Australia—Brisbane	Apr. 6-20	3	2
Australia—Port Douglas	Apr. 6-13	3	1
Australia—Sydney	Apr. 6-20	5	1
Brazil—Bahia	May 18-25	1	1
Brazil—Rio de Janeiro	Apr. 29 May 5	1	1
Brazil—Para	May 25 June 1	1	1
Chile—Antofagasta	May 6-13	19	19
China—Hongkong	Apr. 26-27	1	1
Egypt—Alexandria	May 18-25	3	1
Egypt—Assuit Province	May 16-23	18	25
Egypt—Bahr el Jebel Province	May 16-23	12	1
Egypt—Gharah Province	May 16-23	7	7
Egypt—Keneh Province	May 16-23	4	7
Egypt—Minieh Province	May 16-23	16	9
Formosa—General	May 5-12	162	132
India—Calcutta	Apr. 28 May 1	344	
Mauritius	Mar. 28 Apr. 25	5	2
Peru—Callao	Apr. 24 May 1	1	
Peru—Chilayo	Apr. 24 May 1	1	
Peru—Ferrenafe	Apr. 24 May 1	1	
Peru—Lima	Apr. 24 May 1	12	4
Peru—Paita	Apr. 24 May 1	6	2
Peru—Pisco	Apr. 24 May 1	2	1
Peru—Tumblo	Apr. 24 May 1	5	3
Peru—Tumulo	Apr. 24 May 1	14	10

Public Health and Marine Hospital Service:

Official List of Changes in the Stations and Duties of Commissioned and Noncommissioned Officers of the United States Public Health and Marine Hospital Service, for the seven days ending June 19, 1907:

- BLAIN, A. C., Acting Assistant Surgeon. Granted leave of absence for thirty days, from June 15, 1907.
- COLLINS, GEORGE L., Assistant Surgeon. Granted leave of absence for one day, June 20, 1907.
- GLENNAN, A. H., Assistant Surgeon General. Reassigned to duty as Chief Division in Bureau, Washington, D. C., effective June 10, 1907.
- HERTY, F. J., Pharmacist. Directed to report to Board of Examiners, June 18, 1907, to determine his fitness for promotion to the grade of pharmacist of the first class.
- HOBBY, W. C., Passed Assistant Surgeon. Directed to proceed to Mare Island, Cal., for special temporary duty, upon completion of which to rejoin his station.
- HOLT, J. M., Passed Assistant Surgeon. Designated to represent the Service at the meeting of the Oregon State Medical Association, at Seaside, Ore.
- HOUGH, J. SPENCER, Acting Assistant Surgeon. Granted leave of absence on account of sickness for twenty-eight days, from March 2, 1907.
- LLOYD, B. J., Passed Assistant Surgeon. Granted leave of absence for twenty-one days, from August 5, 1907.
- LONG, H. D., Assistant Surgeon. Granted leave of absence for one month and twenty-three days, from June 19, 1907.
- MAGRUDER, G. M., Surgeon. Granted leave of absence for one month, from July 10, 1907.
- SMITH, EMMA F., Medical Inspector. Granted leave of absence for thirty days, from June 27, 1907, and excused for a further period of one month, without pay, from the expiration thereof.
- WAKEFIELD, H. C., Acting Assistant Surgeon. Granted leave of absence for twenty days, from June 19, 1907.

WILLIAMS, J. L. B., Acting Assistant Surgeon. Granted leave of absence for thirty days, from June 17, 1907.

Resignation.

Dr. Frederick T. Wright appointed acting assistant surgeon, for duty at Douglas, Ariz.

Resignation.

Resignation of Assistant Surgeon F. H. Jones accepted, by direction of the President, to take effect August 10, 1907.

Casualties.

Acting Assistant Surgeon L. W. Hodgkins died at Ellsworth, Me., June 11, 1907.

Acting Assistant Surgeon Julian Benejam died at Aguadilla, P. R., May 30, 1907.

Boards Convened.

A board of medical officers has been convened to meet at the Bureau, in Washington, D. C., July 15, 1907, for the purpose of examining applicants for the position of assistant surgeon, for entrance to the Service, and also to examine officers for advancement. Detail for the board: Surgeon L. L. Williams, Chairman; Passed Assistant Surgeon H. S. Mathewson, and Passed Assistant Surgeon Joseph Goldberger, Recorders.

A board of medical officers was convened to meet at the Bureau, June 18, 1907, for the physical examination of a pharmacist, to determine his fitness for promotion to the grade of pharmacist of the first class. Detail for the board: Assistant Surgeon General W. J. Pettus, Chairman; Assistant Surgeon General J. M. Eager, Recorder.

A board of medical officers has been convened to meet at Newport News, Va., June 21, 1907, for the physical examination of an applicant for entrance as cadet engineer, Revenue Cutter Service. Detail for the board: Assistant Surgeon F. H. Ashford, Chairman; Acting Assistant Surgeon A. C. Jones, Recorder.

A board of medical officers was convened to meet at New York, N. Y., June 21, 1907, for the physical examination of applicants for entrance as cadet engineer in the Revenue Cutter Service. Detail for the board: Surgeon P. H. Bailhache, Chairman; Passed Assistant Surgeon J. A. Nydegger, Recorder.

A board of medical officers was convened to meet at Washington, D. C., June 21, 1907, for the physical examination of applicants for entrance as cadet engineer in the Revenue Cutter Service. Detail for the board: Assistant Surgeon General W. J. Pettus, Chairman; Assistant Surgeon General J. M. Eager, Recorder.

A board of medical officers was convened to meet at Detroit, Mich., June 21, 1907, for the physical examination of applicants for entrance as cadet engineer in the Revenue Cutter Service. Details for the board: Surgeon Fairfax Irwin, Chairman; Assistant Surgeon R. A. C. Wollenburg, Recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending June 22, 1907:

- BLOOMBERG, H. D., First Lieutenant and Assistant Surgeon. Granted three months' leave of absence, to take effect when his services can be spared; authorized to go beyond the sea and to apply for an extension of one month.
- CLAYTON, JERE B., Captain and Assistant Surgeon. Granted leave of absence for three months.
- CONNOR, C. H., First Lieutenant and Assistant Surgeon. Granted leave of absence for three months.
- DUNCAN, L. C., Captain and Assistant Surgeon. Leave of absence extended ten days.
- GILCHRIST, HARRY L., Captain and Assistant Surgeon. Relieved from duty in command of Company A, Hospital Corps, and ordered to report in person to the commanding general, Army of Cuban Pacification, for assignment to duty. Appointed a member of an Army retiring board, to meet at Camp Columbia, Cuba.
- HUTTON, P. C., Captain and Assistant Surgeon. Relieved from duty at the General Hospital, Fort Bayard, New Mexico, and ordered to Fort William H. Seward, Alaska, for duty.

- JOHNSON, R. W., Major and Surgeon. Appointed a member of an Army retiring board, to meet at Camp Columbia, Cuba.
- KEEFER, F. R., Major and Surgeon. Will proceed to the Presidio of San Francisco, Cal., for consultation as to the sanitary arrangements for camps in connection with the joint Army and militia coast defense exercises.
- KENNEDY, J. M., Major and Surgeon. Appointed a member of an Army retiring board, to meet at San Francisco, Cal.
- KIERSTED, H. S., Captain and Assistant Surgeon. Relieved from duty at Fort St. Michael, Alaska, and ordered to proceed to Seattle, Wash., and upon arrival to report by telegraph to the Adjutant General of the Army for further orders.
- LAMBERT, S. E., First Lieutenant and Assistant Surgeon. Leave of absence extended thirty days.
- LYSTER, W. J. L., Captain and Assistant Surgeon. Will proceed from San Francisco, Cal., to the Presidio of Monterey, Cal., for temporary duty until such time as will enable him to return to San Francisco and proceed on transport to Manila, P. I., on July 5, 1907.
- MORSE, C. F., First Lieutenant and Assistant Surgeon. Granted ten days' sick leave of absence.
- O'CONNOR, R. P., Captain and Assistant Surgeon. Relieved from temporary duty at Fort Crook, Neb., and from further duty at Fort Leavenworth, Kas., and ordered to Fort Gibbon, Alaska, for duty.
- PAGE, HENRY, Captain and Assistant Surgeon. Granted two months' leave of absence.
- PATTERSON, R. U., Captain and Assistant Surgeon. Assigned to the command of Company A, Hospital Corps, and will report to the commanding general, Army of Cuban Pacification, for duty accordingly.
- PIERSON, R. H., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Gibbon, Alaska, and ordered to Fort Mason, Cal., for duty.
- REYNOLDS, F. P., Major and Surgeon. Relieved from duty at Fort William H. Seward, Alaska, and ordered to Fort Sill, Okla., for duty.
- SWEAZEY, V. E., Captain and Assistant Surgeon. Relieved from duty at Fort Williams, Me., and ordered to Fort St. Michael, Alaska, for duty.
- TORNEY, G. H., Lieutenant Colonel and Deputy Surgeon General. Appointed a member of an Army retiring board, to meet at San Francisco, Cal.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending June 22, 1907:

- BERRYHILL, T. A., Surgeon. Detached from command of the Naval Hospital, New Fort Lyon, Colo., and ordered to the *Nebraska*, when commissioned.
- BEYER, H. G., Medical Inspector. Detached from duty on board the *West Virginia*, as fleet surgeon of the Pacific fleet, and appointed a delegate to represent the Medical Corps of the Navy at congresses to be held in Stockholm, Sweden; Amsterdam, Holland, and Berlin, Germany. Ordered to proceed from thence to Washington, D. C., and report to the Surgeon General of the Navy.
- BRADLEY, G. P., Medical Director. Having been examined by a retiring board and found incapacitated for active service on account of disability incident thereto, is retired from active service from June 15, 1907, under the provisions of Section 1453, Revised Statutes.
- BUTLER, C. St. J., Passed Assistant Surgeon. Detached from a course of instruction at the Naval Medical School, Washington, D. C., and ordered to duty at that school.
- CLIFFORD, A. B., Assistant Surgeon. Detached from the Naval Station, Canacao, P. I., and ordered home to await orders.
- DUNN, H. A., Passed Assistant Surgeon. Detached from the *Princeton*, when placed out of commission, and ordered to the *Nebraska*.
- HAINES, B. F., Acting Assistant Surgeon. Appointed an acting assistant surgeon, from June 12, 1907.
- HINDETT, C. T., Medical Inspector. Detached from special duty in the Bureau of Medicine and Surgery, Navy De-

partment, and ordered to command the Naval Hospital, New Fort Lyon, Colo.

- HOLEMAN, C. J., Acting Assistant Surgeon. Appointed an acting assistant surgeon, from June 12, 1907. Ordered to duty at the Naval Hospital, Philadelphia, Pa.
- KELLEY, H. L., Assistant Surgeon. Ordered to the Naval Hospital, Navy Yard, Washington, D. C.
- LEE, A. W., Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Naval Hospital, Canacao, P. I., sailing from San Francisco, Cal., about July 25th, via steamer *Siberia*.
- MCLEAN, N. T., Assistant Surgeon. Detached from the Naval Recruiting Station, Chicago, Ill., and ordered to the *Constellation*, and to additional duty at the Naval Training Station, Newport, R. I.
- PLUMMER, R. W., Passed Assistant Surgeon. Detached from course of instruction at the Naval Medical School, Washington, D. C., June 15th, and ordered to the Naval Recruiting Station, Chicago, Ill.

Births, Marriages, and Deaths.

Married.

- ABRAHAMSON—GILLIS.—In Philadelphia, on Tuesday, June 18th, Dr. Philip Abrahamson and Miss Hettie Edith Gillis.
- BARTLETT—BALLETINE.—In Washington, D. C., on Thursday, June 20th, Dr. William Kay Bartlett, United States Army, and Miss Audrey Balletine.
- BROOKS—GORMAN.—In Salem, Massachusetts, on Tuesday, June 18th, Dr. John Eugene Brooks and Miss Gertrude Josephine Gorman.
- CALVÉ—WOODRUFF.—In Berck Plage, France, Dr. Jacques Calvé and Mrs. Regina D. Woodruff.
- GRAY—CRAWFORD.—In Mt. Elliott, Virginia, on Thursday, June 13th, Dr. Henry Wolf Gray and Miss Florence Crawford.
- LOVING—CASSEL.—In Philadelphia, on Monday, June 17th, Dr. Robert C. Loving and Miss Anna Belle Cassel.
- O'GORMAN—METTILE.—In Buffalo, N. Y., on Wednesday, June 12th, Dr. Joseph C. O'Gorman and Miss Cora Louise Mettile.
- VAN VRANKEN—MILLER.—In Syracuse, N. Y., on Wednesday, June 12th, Dr. Albert B. Van Vranken and Miss Edith Miller.
- WARREN—KREMER.—In New York, on Wednesday, June 19th, Dr. B. H. Warren and Miss Etta May Kremer.

Died.

- BROWN.—In Detroit, Michigan, on Friday, June 14th, Dr. Charles Parsons Brown, aged thirty-three years.
- CARR.—In Providence, Rhode Island, on Tuesday, June 18th, Dr. George Wheaton Carr, aged seventy-three years.
- EBNER.—In St. Louis, Missouri, on Tuesday, June 18th, Dr. Charles F. W. Ebner, aged seventy-five years.
- FORSYTHE.—In Oswego, N. Y., on Tuesday, June 18th, Dr. William B. Forsythe, aged ninety-six years.
- GILBERT.—In Washington, D. C., on Thursday, June 13th, Dr. Charles B. Gilbert, aged sixty years.
- HAYES.—In Hartford, Connecticut, on Monday, June 17th, Dr. Arthur Douglas Hayes, aged forty years.
- HIGGS.—In Detroit, Michigan, on Monday, June 17th, Dr. Carlos F. Higgs, aged twenty-seven years.
- HILL.—In Brooklyn, on Wednesday, June 19th, Dr. Thomas Hill, aged sixty-two years.
- LEONARD.—In Syracuse, N. Y., on Sunday, June 16th, Dr. H. L. Leonard, aged fifty-four years.
- MITCHELL.—In Readville, Maine, on Sunday, May 12th, Dr. Sollace Mitchell, aged forty-nine years.
- MUHLBERG.—In Lancaster, Pennsylvania, on Monday, June 17th, Dr. Henry E. Muhlenberg, aged fifty-seven years.
- SCHULZE.—In Reading, Pennsylvania, on Monday, June 17th, Dr. Charles J. Schulze, aged eighty-nine years.
- SWINTON.—In Somerville, N. J., on Saturday, June 15th, Dr. William J. Swinton, aged fifty-eight years.

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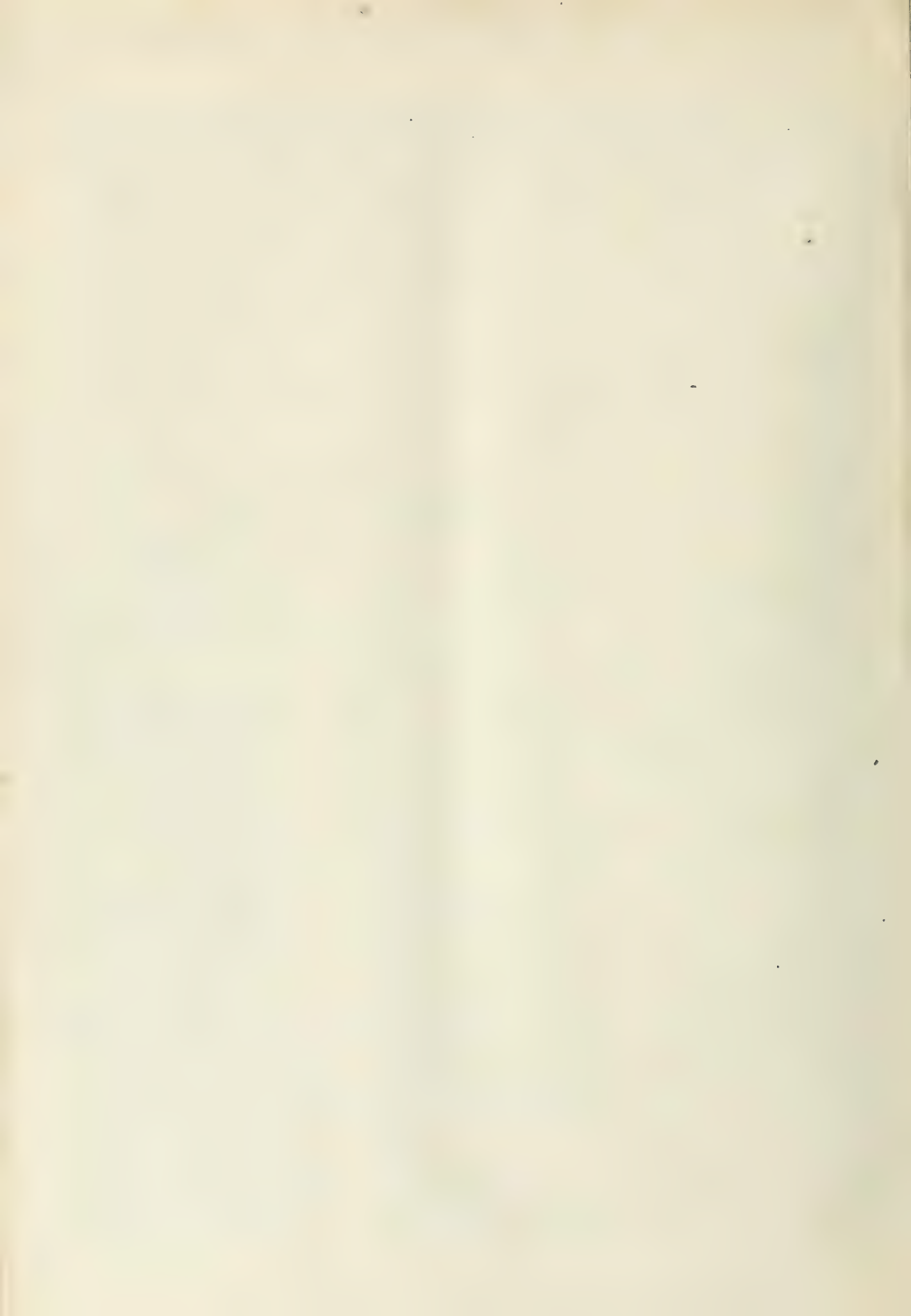
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